Terminal Island (Pier 400) Railyard Enhancement Project

~~Draft~~ Final Initial Study/Mitigated Negative Declaration
APP No. 171106-154

Prepared by:

Los Angeles Harbor Department
Environmental Management Division
425 South Palos Verdes Street
San Pedro, California 90731

With assistance from:

ICF

September 2018

TABLE OF CONTENTS

Appendices

Figures

Tables

This page intentionally left blank

~~DRAFT~~ FINAL INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Pursuant to the California Environmental Quality Act (Division 13, Public Resources Code)

PROPOSED PROJECT

The Los Angeles Harbor Department (LAHD) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) to address the environmental effects of the proposed Terminal Island (Pier 400) Railyard Enhancement Project (Project). The proposed Project involves expansion of the existing Pier 400 rail storage yard to increase capacity and improve yard operations. The proposed Project includes widening of the existing concrete rail bridge to fill the gap between the rail bridge and the roadway bridge on Pier 400's Transportation Corridor and accommodate five new railroad tracks as well as a new access roadway.

DETERMINATION

Based on the analysis provided in this ~~Draft~~ Final IS/MND, LAHD finds that the proposed Project would not have a significant effect on the environment with the incorporation of mitigation.

~~DRAFT IS/MND ORGANIZATION~~

~~This Draft IS/MND has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations Section 15000 et seq. It includes the following sections:~~

- ~~**Section 1.0, Introduction.** This section provides an overview of the proposed Project and the CEQA environmental documentation process.~~
- ~~**Section 2.0, Project Description**. This section provides a detailed description of the proposed Project's objectives and components.~~
- ~~**Section 3.0, Initial Study Checklist.** This section presents the CEQA checklist for all impact areas as well as mandatory findings of significance.~~
- ~~**Section 4.0, Impacts and Mitigation Measures.** This section presents the environmental analysis for each issue area identified in the checklist. If the proposed Project does not have the potential to have a significant impact on a given resource area, then the relevant section provides a brief discussion of the reasons why no impacts are expected. If the proposed Project could have a potentially significant impact on a resource, then the discussion provides a description of the potential impacts and the mitigation measures and/or permit requirements to reduce those impacts to a less than significant level. This document is an IS/MND because there are no impacts associated with the proposed Project that cannot be mitigated to below applicable significance thresholds.~~
- ~~**Section 5.0, Proposed Finding.** This section presents the proposed finding regarding environmental impacts.~~

- ~~**Section 6.0, Preparers and Contributors.** This section provides a list of key personnel involved in preparation of the IS/MND.~~
- ~~**Section 7.0, Acronyms and Abbreviations**. The section provides a list of acronyms and abbreviations used throughout the IS/MND.~~
- ~~**Section 8.0, References.** This section provides a list of reference materials used during preparation of the IS/MND.~~

1.0 Introduction

The Los Angeles Harbor Department (LAHD) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) to address the environmental effects of the proposed Terminal Island (Pier 400) Railyard Enhancement Project (Project). The proposed Project would be located on the existing Pier 400 Transportation Corridor, which connects the Pier 400 Container Terminal to Terminal Island at the Port of Los Angeles (Port or POLA). LAHD is the lead agency under the California Environmental Quality Act (CEQA).

The primary objective of the proposed Project is to increase storage capacity and improve yard operations at the Terminal Island (Pier 400) Railyard. These improvements would allow cargo modes to shift to maximize on-dock rail use, thereby reducing the number of truck trips both within the Port and on local freeways. Shifting from truck to rail cargo would reduce air emissions, improve safety on local transportation routes, and reduce highway congestion and wear.

1.1 CEQA Process

This document was prepared in accordance with CEQA (Public Resources Code [PRC] Section 21000 et seq.), the CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.), and the City of Los Angeles (City) CEQA Guidelines (2006). One of the main objectives of CEQA is to disclose the potential environmental effects of proposed activities to the public and decision-makers. CEQA requires the potential environmental effects of a project to be evaluated prior to implementation. This IS/MND includes a discussion of the proposed Project's effects on the existing environment, including the identification of avoidance, minimization, and mitigation measures. This document is an IS/MND because all impacts associated with the proposed Project can be mitigated to be below applicable significance thresholds.

Under CEQA, the lead agency is the public agency with primary responsibility for approval of a project. Pursuant to Section 15367 of the CEQA Guidelines (14 CCR 15000 et seq.), LAHD is the lead agency for the proposed Project. LAHD prepared this environmental document to comply with CEQA. LAHD will consider the information in this document when determining whether to approve the proposed Project.

Preparation of an Initial Study is guided by Section 15063 of the CEQA Guidelines, while Sections 15070–15075 of the CEQA Guidelines direct the process for preparation of a Negative Declaration or an MND (14 CCR 15000, et seq.). Where appropriate and supportive, references will be made to CEQA, the CEQA Guidelines, or appropriate case law.

This IS/MND meets CEQA content requirements by including a project description; a description of the environmental setting, potential environmental impacts, and mitigation measures for any significant effects; a discussion of consistency with plans and policies; and the names of the document preparers.

In accordance with CEQA and the CEQA Guidelines, this IS/MND ~~will be~~ was circulated for public review and comment for a period of 21 days. The public review period for this IS/MND ~~is scheduled to begin~~

began on August 31, 2018, and concluded September 20, 2018. In addition, the IS/MND ~~will be~~ was distributed to interested or involved public agencies, organizations, and private individuals and made available for general public review at the following locations:

- LAHD, Environmental Management Division, 222 West 6th Street, San Pedro, California 90731
- Los Angeles City Library, San Pedro Branch, 931 South Gaffey Street, San Pedro, California 90731
- Los Angeles City Library, Wilmington Branch, 1300 North Avalon, Wilmington, California 90744

The document ~~is~~ was also available online at https://www.portoflosangeles.org/environment/public_notices.asp.

Approximately 140 notices were sent to community residents, stakeholders, and local agencies.

During the 21-day public review period, the public ~~has~~ had an opportunity to provide written comments on the information contained within this IS/MND. ~~The public comments on the IS/MND as well as the responses to those comments will be included in the record and considered by LAHD during its deliberation as to whether the necessary approvals should be granted for the proposed Project.~~ No comments were received during the public review period. A project will be approved only when LAHD finds that there is no substantial evidence that it will have a significant effect on the environment and that the Negative Declaration or MND reflects the lead agency's independent judgment and analysis (14 CCR 15070).

~~In reviewing the IS/MND, affected public agencies and interested members of the public should focus on the sufficiency of the document with respect to identifying and analyzing potential impacts on the environment and the ways in which the potential significant effects of a project are proposed to be avoided or mitigated. Comments on the IS/MND should be submitted in writing prior to the end of the 21-day public review period and postmarked by September 20, 2018.~~

~~Please submit written comments to:~~

~~Chris Cannon, Director~~
~~Los Angeles Harbor Department~~
~~Environmental Management Division~~
~~425 South Palos Verdes Street~~
~~San Pedro, California 90731~~

~~Written comments may also be sent by email to ceqacomments@portla.org. Comments sent by email should include the project title in the subject line.~~

~~For additional information, please contact the LAHD, Environmental Management Division, at 310.732.3675.~~

1.2 Determination

Based on the analysis provided in this Final IS/MND, LAHD finds that the proposed Project would not have a significant effect on the environment with the incorporation of mitigation.

1.3 Final IS/MND Organization

This Final IS/MND has been prepared in accordance with the requirements of CEQA (California Public Resources Code [PRC] 21000 et seq.) and the CEQA Guidelines (California Code of Regulations [CCR] 15000 et seq.

1.4 Document Format

The following sections were included in the ~~Draft~~ Final IS/MND and are included in this final document:

- **Section 1.0**, **Introduction.** This section provides an overview of the proposed Project and the CEQA environmental documentation process.
- **Section 2.0, Project Description**. This section provides a detailed description of the proposed Project's objectives and components.
- **Section 3.0, Initial Study Checklist.** This section presents the CEQA checklist for all impact areas and mandatory findings of significance.
- **Section 4.0 Impacts and Mitigation Measures**. This section presents the environmental analysis for each issue area identified in the checklist. If the proposed Project does not have the potential to have a significant impact on a given issue area, then the relevant section provides a brief discussion of the reasons why no impacts are expected. If the proposed Project could have a potentially significant impact on a resource, then the discussion provides a description of potential impacts and the mitigation measures and/or permit requirements to reduce those impacts to a less-than-significant level.
- **Section 5.0, Proposed Finding.** This section presents the proposed finding regarding environmental impacts.
- **Section 6.0, Preparers and Contributors.** This section provides a list of key personnel involved in preparation of the IS/MND.
- **Section 7.0, Acronyms and Abbreviations.** This section provides a list of acronyms and abbreviations used throughout the IS/MND.
- **Section 8.0, References.** This section provides a list of reference materials used during preparation of the IS/MND.

The environmental analysis included in Section 4.0, Impacts and Mitigation Measures, is consistent with the CEQA Initial Study format presented in Section 3.0, Initial Study Checklist. Impacts are separated into the following categories:

- **Potentially Significant Impact.** This category is applicable only if there is substantial evidence that an effect may be significant and no feasible mitigation measures can be identified to reduce impacts to

a less-than-significant level. Given that this is an IS/MND, no impacts were identified that fall into this category.

- **Less-than-Significant Impact after Mitigation Incorporated.** This category applies where the incorporation of mitigation measures would reduce an effect from a "potentially significant impact" to a "less-than-significant impact." The lead agency must describe the mitigation measures and briefly explain how they would reduce the effect to a less-than-significant level (mitigation measures from earlier analyses may be cross-referenced).
- **Less-than-Significant Impact.** This category is identified when the proposed Project would result in impacts that are below the threshold of significance and no mitigation measures are required.
- **No Impact.** This category applies when the proposed Project would not create an impact with respect to the specific environmental issue area. "No impact" answers do not require a detailed explanation if they are adequately supported by information sources cited by the lead agency that show that the impact does not apply to a specific project (e.g., the project falls outside of a fault rupture zone). A "no impact" answer should be explained where it is based on project-specific factors and general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2.0 PROJECT DESCRIPTION

This IS/MND is being prepared to evaluate the potential environmental impacts that may result from the proposed Project. The proposed Project involves expansion of the existing Pier 400 rail storage yard to increase on-dock railyard capacity and improve efficiency of railyard operations. The proposed Project includes widening of the existing concrete rail bridge to fill the gap between the rail bridge and the roadway bridge on Pier 400's Transportation Corridor and accommodate five new railroad tracks as well as a new access roadway. This section describes the location for the proposed Project and discusses its background and objectives. This document has been prepared in accordance with CEQA (PRC Section 21000 et seq.) and the CEQA Guidelines (14 CCR 15000 et seq.).

2.1 Project Location

2.1.1 Regional Setting

The Port is located at San Pedro Bay, 20 miles south of downtown Los Angeles (Figure 2-1, Regional Location Map, and Figure 2-2, Vicinity Map). The Port encompasses 7,500 acres, including 43 miles of waterfront. It has approximately 270 commercial berths and 27 terminals, including leased facilities to handle containers, automobiles, dry bulk, breakbulk and liquid bulk products, and cruise ships, as well as extensive transportation infrastructure for intermodal cargo movement by truck and rail. The Port also accommodates boat repair yards and provides slips for approximately 3,800 recreational vessels, 150 commercial fishing boats, 35 miscellaneous small-service crafts, and 15 charter vessels that handle sport fishing and harbor cruises. Retail shops and restaurants are located primarily along the west side of the Main Channel. The Port also accommodates water-dependent recreation, visitor-serving, community, and educational facilities, such as a public beach, the Cabrillo Beach Youth Waterfront Sports Center, Cabrillo Marine Aquarium, Los Angeles Maritime Museum, 22nd Street Park, and Wilmington Waterfront Park.

The LAHD, a proprietary department of the City, is charged with operation, maintenance, and management of the Port. The LAHD is a landlord that leases properties to more than 300 tenants, including private terminal, tug, marine cargo, and cruise industry operators. The LAHD administers the Port under the California Tidelands Trust Act of 1911 and the Los Angeles City Charter. The LAHD is chartered to develop and operate the Port to benefit maritime uses, which include necessary support and access facilities to accommodate the demands of import and export waterborne commerce.

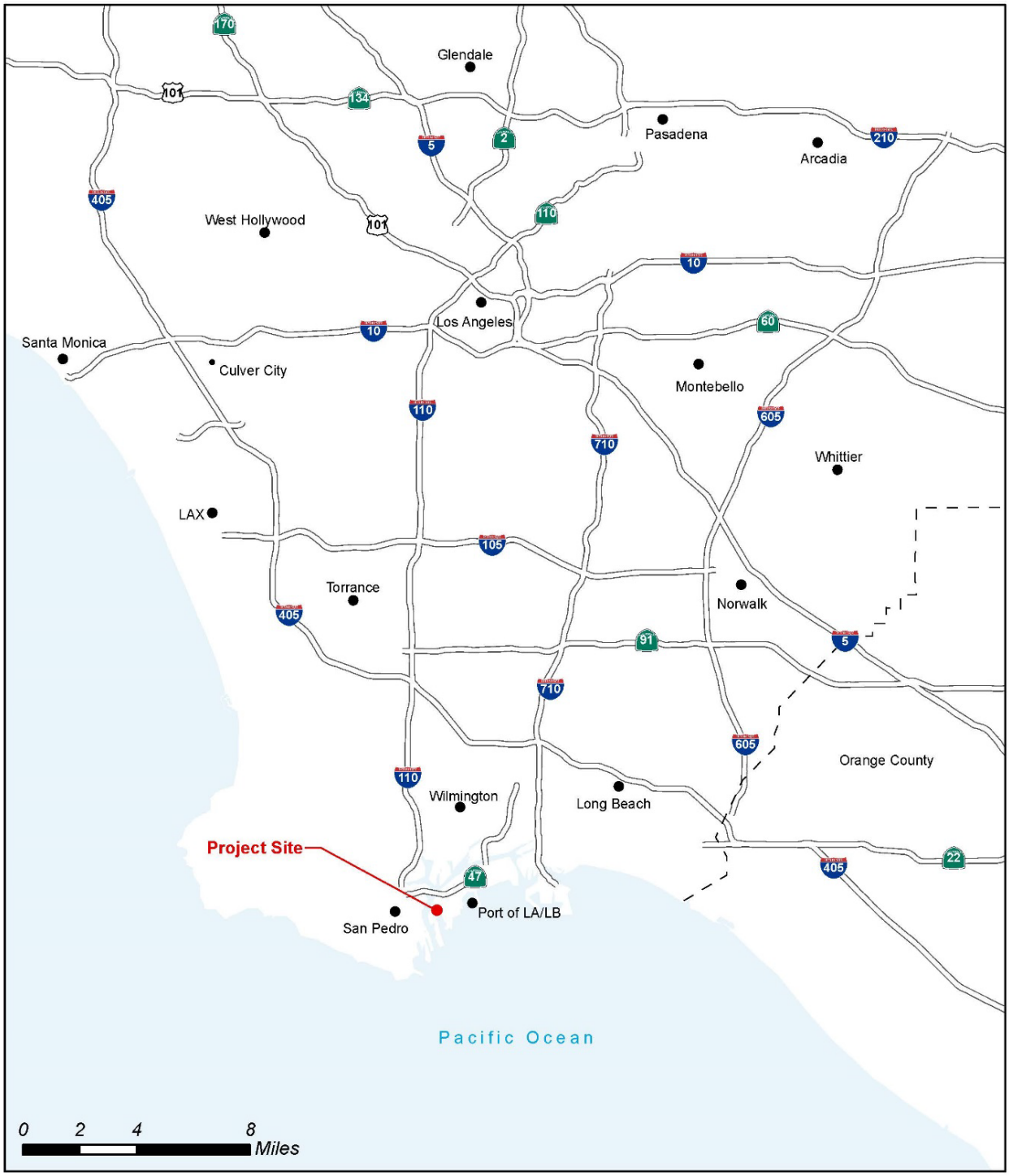


Figure 2-1. Regional Location Map

Figure 2-2. Vicinity Map

2.1.2 Project Setting

The location for the proposed Project is the existing Pier 400 Transportation Corridor, which connects the Pier 400 Container Terminal to Terminal Island (Figure 2-3, Local Setting). The 1-mile-long, 350-foot-wide transportation corridor connects the Pier 400 landfill and the APM Terminals Pacific Container Terminal and Pier 400 Railyard to Terminal Island. The existing Terminal Island (Pier 400) Railyard serves six on-dock railyards, which are located within six container terminals at both the Port of Los Angeles and the Port of Long Beach (POLB). The Project site currently contains six rail tracks, an access road, and a rail bridge that spans approximately 400 feet of water. Navy Way, a four-lane roadway that serves Pier 400 and Terminal Island, parallels the railyard to the west. Pier T Terminal, Navy Mole, and Nimitz Road, within the Port of Long Beach, are directly adjacent to the east.

The Port's Terminal Island intermodal rail line ultimately merges with the Alameda Corridor and a near-dock railyard operated by Union Pacific Railroad (UPRR), to accommodate containerized cargo departing from ports of Los Angeles and Long Beach for destinations throughout North America.

2.1.3 Land Use and Zoning

The proposed Project would be located at the Port of Los Angeles, within the City of Los Angeles General Plan, Port of Los Angeles Plan (1982) Area and the Transportation Element (1999), with a designation of General/Bulk Cargo and Commercial/Industrial Uses Hazardous (City of Los Angeles 1992). The Port of Los Angeles Plan is one of 35 community plans that make up the General Plan of the City of Los Angeles (City of Los Angeles, 1982). This plan provides a 20-year official guide to the continued development and operation of the Port. The Project site is zoned for heavy industrial uses ([Q] M3-1) under the City of Los Angeles Zoning Ordinance (City of Los Angeles 2018).

The Port Master Plan (PMP) (POLA 2014) establishes policies and guidelines to direct future development of the Port. The original plan became effective in April 1980, after it was approved by the Board of Harbor Commissioners and certified by the California Coastal Commission. The 2014 PMP is a comprehensive update and the 28th Amendment to the 1980 PMP. The updated PMP (POLA 2014) includes five planning areas. The proposed Project would be located in Planning Area 3, Terminal Island, which focuses on container operations. Planning Area 3 is the largest planning area, consisting of approximately 1,940 acres and more than 9.5 miles of usable waterfront. It includes all of Terminal Island, except Fish Harbor. Of the Port's nine container terminals, six are located in Planning Area 3. The Terminal Island On-dock Rail Facility was identified as one of the "other projects" in the PMP, consisting of development of a new on-dock rail facility. The Project area is designated primarily for container use, with the northernmost portion of the area extending into land designated for maritime support use.

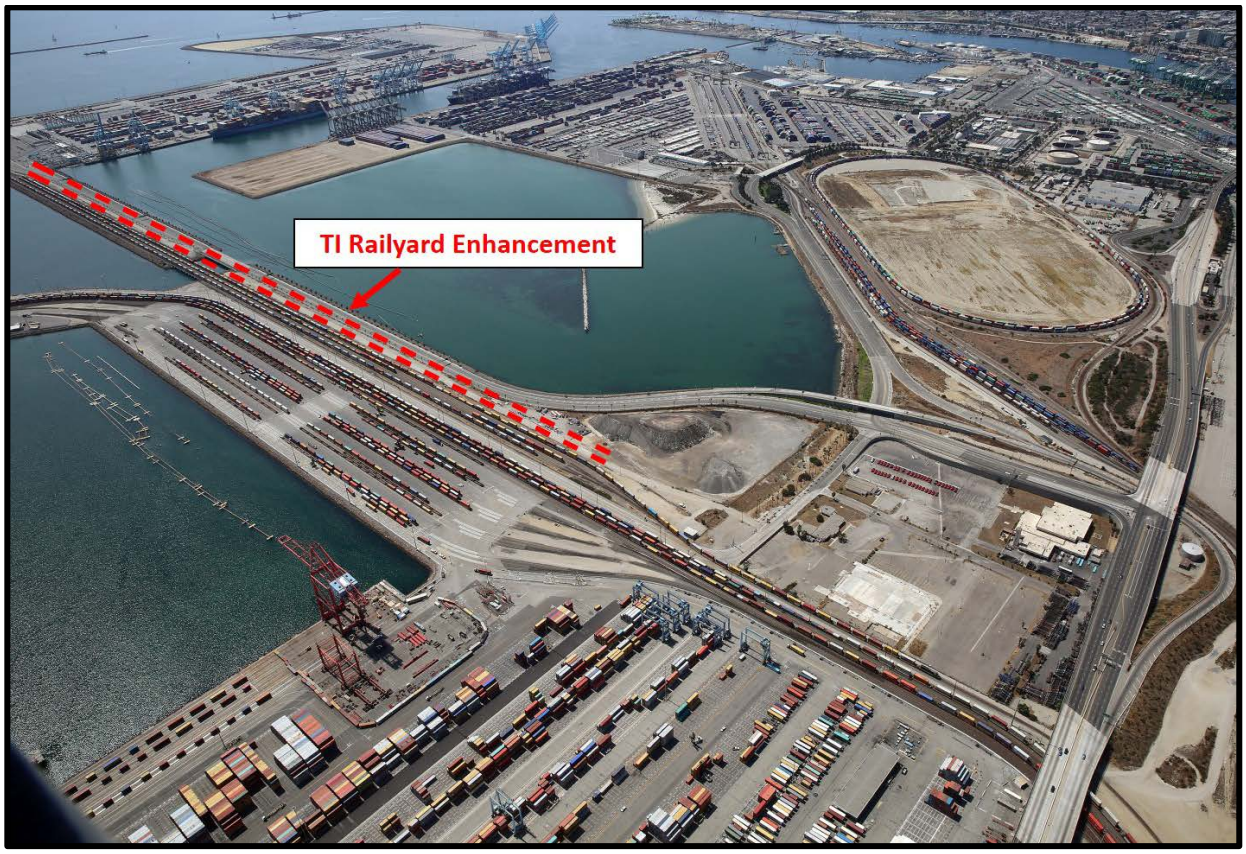


Figure 2-3. Local Setting

2.2 Project Background and Objectives

2.2.1 Project Background

In 2017, the Port of Los Angeles had a record-setting year, with 9.3 million twenty-foot-equivalent units (TEUs) handled, strengthening the Port of Los Angeles' ranking as the number one container port in the United States and North America (POLA 2017). The Port of Los Angeles handles approximately 41 percent of West Coast containerized cargo and approximately 18 percent of national containerized cargo, creating 147,000 jobs in Los Angeles, 526,000 jobs in the five-county region, and 1.6 million jobs across the United States (POLA 2017).

By 2035, Port of Los Angeles is projected to handle approximately 19 million TEUs (35 million TEUs combined with the Port of Long Beach), which will further strain the nation's most important freight transportation network. The Port of Los Angeles is connected to all other regions of the U.S. via an extensive Class I rail network (Figure 2-4). Within Southern California (Figure 2-5), the Port of Los Angeles is served by the Burlington Northern Santa Fe Railway Company (BNSF) and the UPRR via the Alameda Corridor (and the Alameda Corridor East for the UPRR).

Figure 2-4. National Rail Context

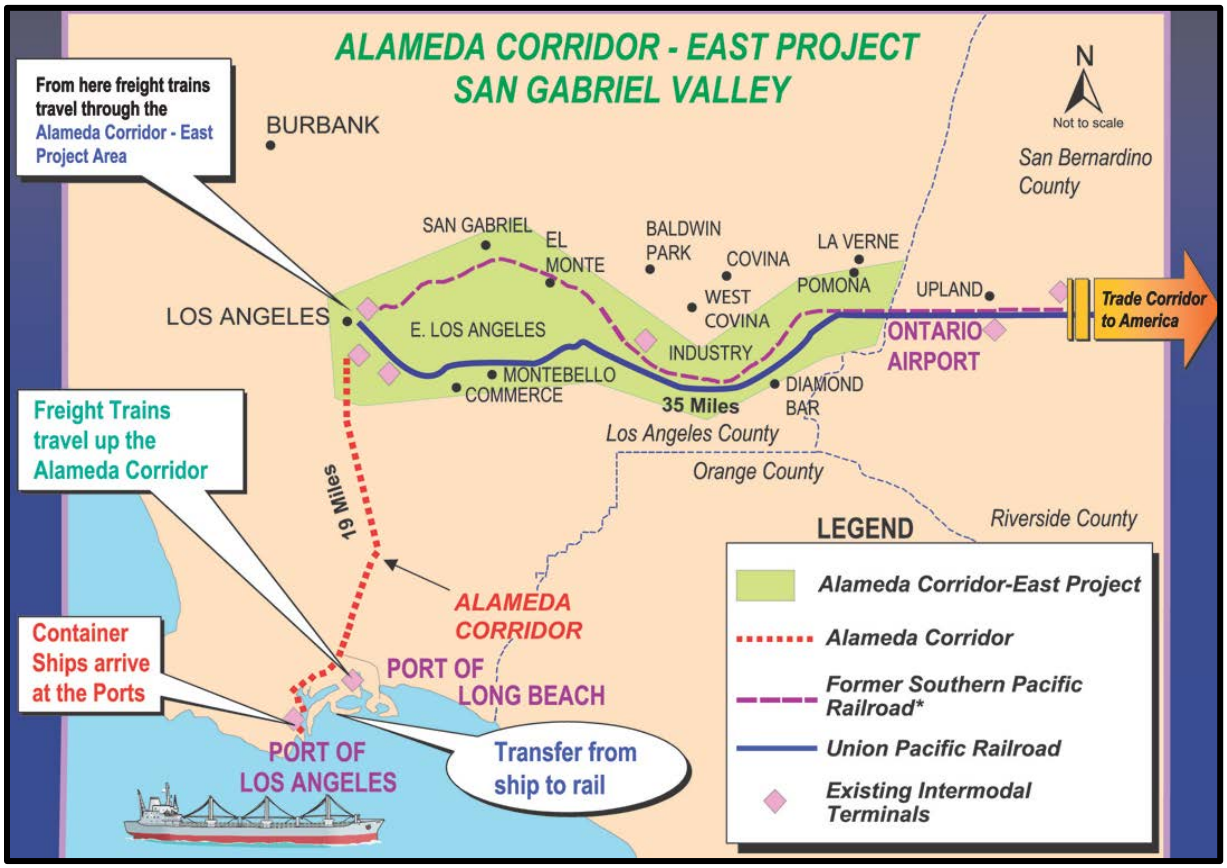


Figure 2-5. Regional Rail Context

For a number of economic, environmental, and efficiency reasons, San Pedro Bay ports have committed to a goal of maximizing on-dock rail use. On-dock rail enables cargo containers to be moved to/from vessels and trains within the confines of the port terminals, thereby minimizing truck trips inside the terminals and outside the National Highway Freight Network/Primary Highway Freight System (NHFN-PHFS). Over the last 10 years, LAHD has invested more than $500 million in railway/roadway grade separations as well as other roadway and rail system projects to reduce the number of truck trips, reduce roadway delay, and optimize the flow of cargo (POLA 2017). To accommodate expected growth in intermodal rail volumes from both exports and imports, a significant number of rail system improvements is needed. Currently, on-dock rail capacity at the ports is insufficient and suffers from congestion and inefficient operations. The lack of rail storage capacity reduces the efficiency of rail car management. For instance, if there are not enough containers unloaded from a ship that are going to the same destination to make a full train at an on-dock railyard, lack of on-dock yard storage forces cargo to be hauled by truck to off-dock railyards outside the ports to build trains. About 33 percent of all containers in the San Pedro Bay Port Complex are loaded onto trains through on-dock and off-dock railyards. Of this 33 percent, about 25 percent are loaded through on-dock railyards.

2.2.2 Project Objectives

The objectives of the proposed Project include the following:

- Shifting cargo movement modes to maximize on-dock rail use, thereby reducing truck trips and miles traveled, within the Port, on adjacent roadways and on local freeways.
- Reducing truck trips on adjacent roadways/freeways could also result in improved safety, reduced congestion and level of service delays, and reduced road wear on NHFN-PHFS routes.
- Increasing capacity and use of the on-dock railyards by up to 525,000 TEUs annually. By boosting the Port's efficiency to maximize waterborne container handling by on-dock rail, reduces emissions and promotes international trade.

2.3 Project Description

2.3.1 Project Elements

The proposed Project involves construction of five new rail storage tracks, totaling approximately 40,000 linear feet of rail, with 15-foot center-to-center spacing between each of the new tracks, and a short rail bridge over the water. The proposed tracks include a new "bad order" track[1] and a new departure track. A new asphalt access roadway would extend the full length of the Project area, paralleling the new tracks along the western edge. The proposed Project would also require widening an existing concrete rail bridge which would encompass area approximately 400 feet long by 100 feet wide (0.94 acre) that would also extend over the water. A new crossover would be installed at the south end, with asphalt concrete paving between the lead tracks up to the crossover. Relocation of the compressed air system at the northern edge of the Project area would be required. The figures provided below outline the improvements. Figure 2-6

[1] "Bad order" track refers to an auxiliary track used to hold trains (locomotives and/or rail cars) that require repair or have mechanical defects. A bad order track would avoid blocking tracks used for inbound/outbound trains.

shows the proposed improvements at the Project site, and Figure 2-7 provides a cross section of the rail bridge extension.

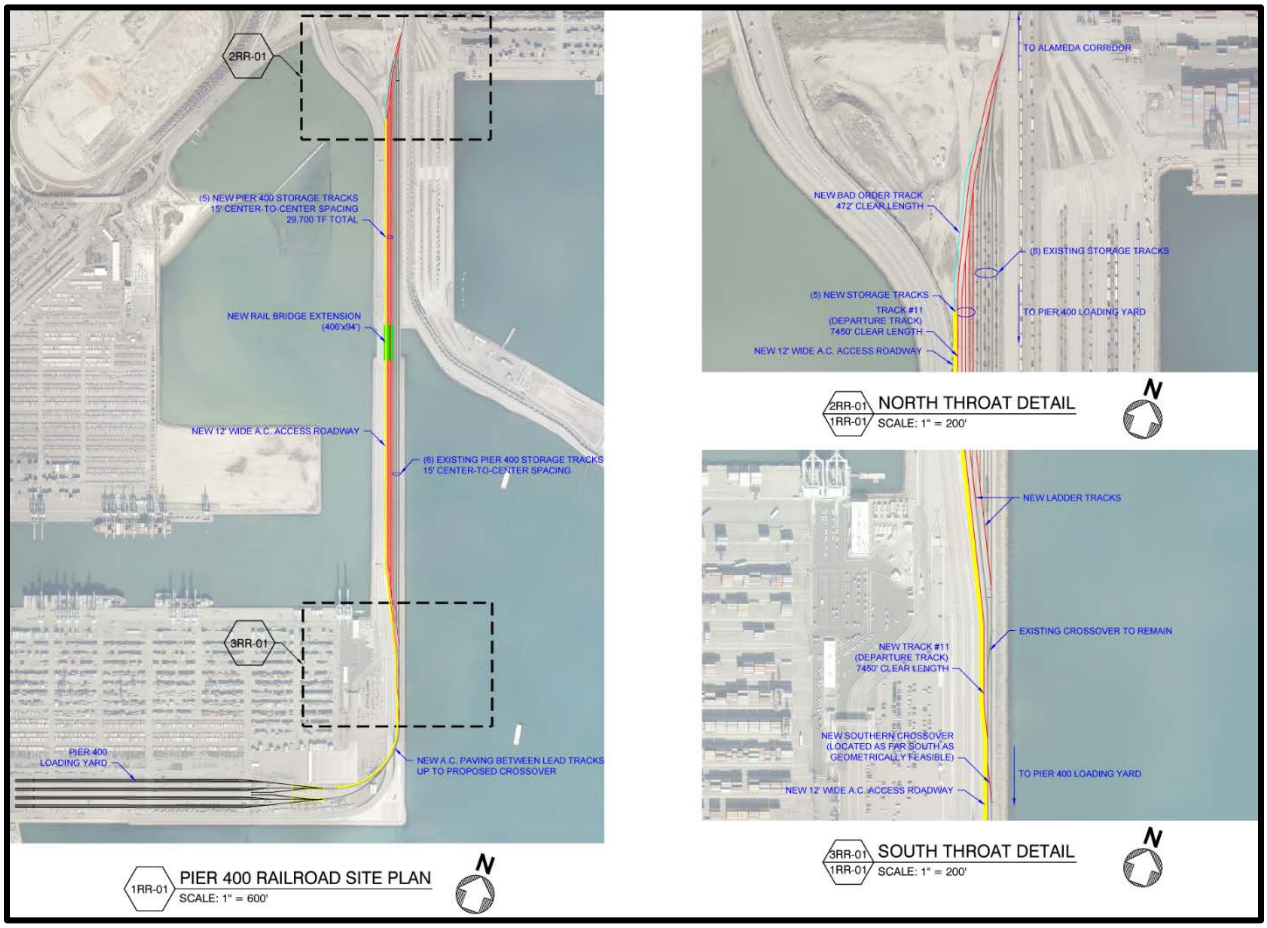


Figure 2-6. Site Plan of Proposed Project

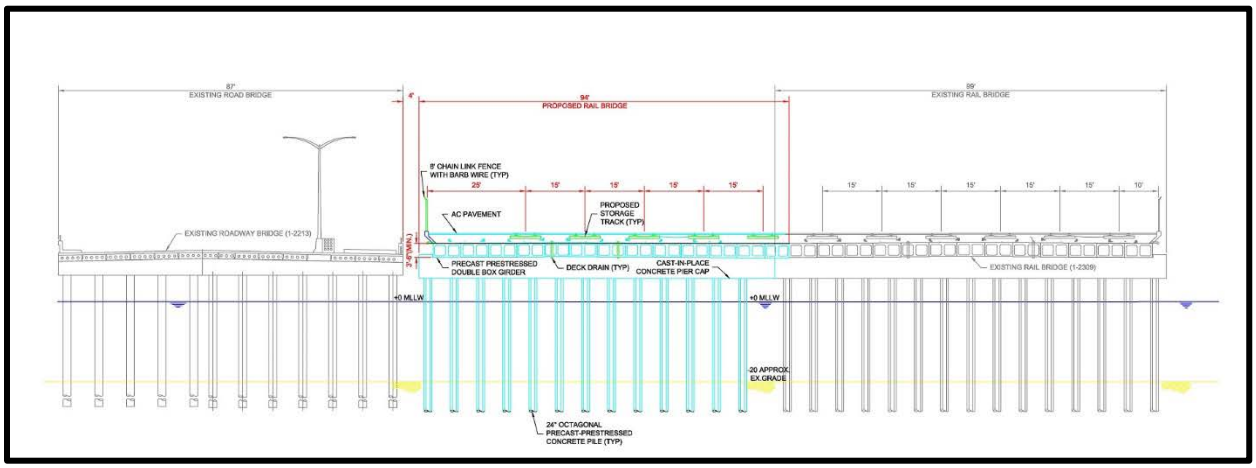


Figure 2-7. Rail Bridge Cross Section of Proposed Improvements

2.3.2 Construction

Construction activities for the proposed Project are expected to take approximately 18 months. Initial activities would involve clearing the landside vegetation within the proposed alignment for the new tracks. Abutment areas for the bridge would be excavated and constructed. Approximately 200 piles would be installed within the water gap area to support the new bridge through impact pile driving methods. Girder sets would top the piles, followed by construction of the new rail tracks. Railroad track turnout and crossover construction would be completed nearing the end of construction, with asphalt paving of the new access road and fencing occurring as the final phase. All construction work would be confined to the Pier 400 Transportation Corridor. The schedule is based on five, 8-hour work days per week. Up to 50 workers would be required at the site at any given time, depending on the construction phase.

2.3.3 Operation

The Pier 400 storage/staging railyard supports the on-dock railyards for six terminals in the San Pedro Bay Port Complex. According to detailed capacity modeling and intermodal analysis, the Terminal Island (Pier 400) Railyard Enhancement Project would increase on-dock capacity and commensurate use by 525,275 TEUs/year. This component of the proposed Project would function as a critical link between the San Pedro Bay Port Complex and the Alameda Corridor, which itself carries about 11 percent of all waterborne containers entering/exiting the entire United States.

The proposed Project would create a long-term mobility benefit in that it would shift containers from on-road heavy-duty trucks and allow greater usage of rail. This shift would decrease vehicle miles traveled, reduce traffic congestion in the San Pedro Bay Port Complex, and reduce associated air emissions. In essence, the capacity/use increase at the Pier 400 on-dock railyard would shift these 525,275 TEUs/year from off-dock yards located between 11 and 27 miles away.

The reduction in the number of truck trips on adjacent roadways/freeways would result in improved safety and reduced wear on NHFN-PHFS routes, including Interstate (I) 710 and I-110. These reductions would, in turn, improve safety, reduce congestion/travel times, and reduce pavement wear. Rail locomotive delay and emissions would also be reduced.

2.4 Project Permits and Approvals

Under CEQA, the lead agency is the public agency with primary responsibility for approval of a proposed Project. Pursuant to the CEQA Guidelines (14 CCR 15367), the CEQA lead agency for the proposed Project is LAHD.

- The following permits and approvals, and/or agency oversight, may be required to implement the proposed Project:
  LAHD Coastal Development Permit
- LAHD Harbor Engineer Permit
- Los Angeles Regional Water Quality Control Board (LARWQCB) Section 401 (Clean Water Act)

- LARWQCB Stormwater Pollution Prevention Plan (SWPPP)
- LARWQCB National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Industrial Activities
- U.S. Army Corps of Engineers Section 404 of the Clean Water Act
- U.S. Coast Guard (USCG) Regulations Pertaining to Navigation Safety and Waterfront Facilities

3.0 Initial Study Checklist

1.	**Project Title:**	Terminal Island (Pier 400) Railyard Enhancement Project
2.	**Lead Agency Name and Address:**	Los Angeles Harbor Department (LAHD) Environmental Management Division 425 South Palos Verdes Street San Pedro, California 90731
3.	**Contact Person and Phone Number:**	Tara Tisopulos 310.732.7713
4.	**Project Location:**	Pier 400, Port of Los Angeles 2500 Navy Way San Pedro, California 90731
5.	**Project Sponsor's Name and Address:**	LAHD Engineering Division 425 South Palos Verdes Street San Pedro, California 90731
6.	**Port Master Plan Designation:**	General/Bulk Cargo (Hazardous Industrial and Commercial Uses)
7.	**Zoning:**	[Q] M3-1
8.	**Description of Project:**	The proposed Project involves expansion of the existing Pier 400 rail storage yard to increase capacity and improve yard operations. The proposed Project includes extension of the existing concrete rail bridge to fill the gap between the rail bridge and the roadway bridge on Pier 400's Transportation Corridor and accommodate five new railroad tracks as well as a new access roadway.
9.	**Surrounding Land Uses/Setting:**	The character of the surrounding area is primarily industrial. The properties to the north, south, and west are all zoned for heavy industrial uses, similar to the Project site. The nearest sensitive receptors to the Project site are the liveaboard boats in the marinas to the north, with the closest located at Newmarks Yacht Centre on Peninsula Road, approximately 4,400 feet away. Aside from the liveaboard boats, the nearest sensitive receptors are the residential areas within the San Pedro community, approximately 2 miles west of the Main Channel.
10.	**Other Public Agencies Whose Approval Is Required:**	• U.S. Army Corps of Engineers • Los Angeles Regional Water Quality Control Board • City of Los Angeles • U.S. Coast Guard

3.1 Environmental Factors Potentially Affected

The environmental factors checked below could be affected by this project, involving at least one impact that is a "potentially significant impact," as indicated by the checklist on the following pages.

☐ Aesthetics ☐ Agriculture and Forestry Resources ☐ Air Quality

☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology and Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☐ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation and Traffic	☐ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Mandatory Findings of Significance	

3.2 Determination (To Be Completed By The Lead Agency)

On the basis of this initial evaluation:

I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐

I find that although the proposed Project could have a significant effect on the environment, there would not be a significant effect in this case because revisions to the Project have been made or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. ☒

I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☐

I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated impact: on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and 2) has been addressed by mitigation measures, based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. ☐

I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required. ☐

08-27-18

Signature
Chris Cannon, Director
Environmental Management Division
Los Angeles Harbor Department

Date

3.3 Environmental Checklist

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
1. AESTHETICS. Would the project:				
a. Have a substantial adverse effect on a scenic vista?				x
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				x
c. Substantially degrade the existing visual character or quality of the site and its surroundings?				x
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?				x
e. Create a new source of substantial shade or shadow that would adversely affect daytime views in the area?				x
2. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forestland, including the Forest and Range Assessment Project and the Forest Legacy Assessment project, and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				x
b. Conflict with existing zoning for agricultural use or a Williamson act contract?				x

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
c. Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?				x
d. Result in the loss of forestland or conversion of forestland to non-forest use?				x
e. Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?				x
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan or clean air programs?			x	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			x	
c. Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?			x	
d. Expose sensitive receptors to substantial pollutant concentrations?			x	
e. Create objectionable odors affecting a substantial number of people?			x	
4. BIOLOGICAL RESOURCES. Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate,		x		

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
sensitive, or special-status species in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		x		
c. Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.), through direct removal, filling, hydrological interruption, or other means?				x
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			x	
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				x
f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?				x
5. CULTURAL RESOURCES. Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5?				x
b. Cause a substantial adverse change in the significance of an archaeological resource, pursuant to Section 15064.5?				x
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				x

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
d. Disturb any human remains, including those interred outside of dedicated cemeteries?				x
6. ENERGY. Would the project:				
a. Conflict with adopted energy conservation plans?			x	
b. Use non-renewable resources in a wasteful and inefficient manner?			x	
c. Result in a need for new systems or substantial alterations to power or natural gas?				x
7. GEOLOGY AND SOILS. Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				x
ii) Strong seismic ground shaking?			x	
iii) Seismically related ground failure, including liquefaction?			x	
iv) Landslides?				x
b. Result in substantial soil erosion or the loss of topsoil?			x	
c. Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?			x	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			x	

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				x
8. GREENHOUSE GAS EMISSIONS: Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			x	
9. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			x	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			x	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?				x
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?			x	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				x
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				x

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			x	
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				x
10. HYDROLOGY AND WATER QUALITY. Would the project:				
a. Violate any water quality standards or waste discharge requirements?			x	
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?				x
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?				x
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?				x
e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				x
f. Otherwise substantially degrade water quality?			x	

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				x
h. Place within a 100-year flood hazard area structures that would impede or redirect floodflows?				x
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				x
j. Inundation by seiche, tsunami, or mudflow?			x	
11. LAND USE AND PLANNING. Would the project:				
a. Physically divide an established community?				x
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over a project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			x	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				x
12. MINERAL RESOURCES. Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				x
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				x
13. NOISE. Would the project:				

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?			x	
b. Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels?			x	
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity, above levels existing without the project?			x	
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity, above levels existing without the project?			x	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the area to excessive noise levels?				x
f. For a project within the vicinity of a private airstrip, expose people residing or working in the area to excessive noise levels?				x
14. POPULATION AND HOUSING. Would the project:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				x
b. Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?				x
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				x
15. PUBLIC SERVICES.				

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?			x	
ii) Police protection?			x	
iii) Schools?				x
iv) Parks?				x
v) Other public facilities?			x	
16. RECREATION.				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				x
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				x
17. TRANSPORTATION AND TRAFFIC. Would the project:				
a. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				x

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
b. Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?				x
c. Result in a change in marine traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				x
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				x
e. Result in inadequate emergency access?				x
f. Conflict with adopted policies, plans, or programs regarding public transit or bicycle or pedestrian facilities or otherwise decrease the performance or safety of such facilities?				x
18. TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as a site, feature, place, cultural landscape, sacred place, or object that has cultural value to a California Native American tribe and is:				
a. Listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources, as defined in Public Resources Code Section 5020.1(k).			x	
b. Determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				x
19. UTILITIES AND SERVICE SYSTEMS. Would the project:				

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				x
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				x
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				x
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?				x
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				x
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			x	
g. Comply with federal, state, and local statutes and regulations related to solid waste?				x
20. MANDATORY FINDINGS OF SIGNIFICANCE.				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?		x		

	Potentially Significant Impact	*Less-than-Significant Impact after Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
b. Does the project have impacts that are individually limited but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.			x	
c. Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?			x	

4.0 Impacts and Mitigation Measures

4.1 Aesthetics

Would the Project:

a) Have a substantial adverse effect on a scenic vista?

No Impact. The Project site is inside a working port and not within or near any protected or designated scenic vistas. The proposed Project is on the existing Pier 400 Transportation Corridor, which connects the Pier 400 Container Terminal to Terminal Island. The Project site is industrial and currently contains six rail tracks, an access road, and a rail bridge that spans approximately 400 feet of water. Navy Way, a four-lane roadway serving Pier 400 and Terminal Island, parallels the railyard to the west. The Project site is surrounded by other port uses, including container terminals, gantry cranes for off-loading and loading containers, and other industrial facilities. Associated with these uses are rail and truck movements and ongoing Port-related maintenance activities. All site improvements would be similar in nature and appearance; thus, the Project improvements would not result in a substantive change in the visual character or quality of the site. In addition, because of topography and intervening development, visibility of the Project site is limited from many public viewing areas or from higher locations.

In the operational stage, the proposed Project would add five staging/storage tracks to the existing Pier 400 railyard and a short rail bridge over the water. The character of the Project site during operation of these additional storage tracks and other infrastructure, including the rail bridge, would be similar to the existing character of the site. Operations would not obstruct views or substantially alter views from scenic areas or other areas outside the Port.

Because proposed improvements would be consistent with existing terminal operations within this working port, this shift in cargo movement from trucks to on-dock rail would not result in a significant impact on views of the site or any scenic vista. Therefore, there would be no impacts on scenic vistas from the proposed Project

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The Project site is not near an eligible or designated state scenic highway, nor are there scenic resources at the Project site. Therefore, the proposed Project would not have the potential to damage scenic resources within a state scenic highway. The California Department of Transportation (Caltrans) is responsible for official nomination and designation of eligible scenic highways. The nearest officially designated state scenic highway is approximately 32 miles north of the proposed Project (State Highway 2, from approximately 3 miles north of I-210 in La Cañada to the San Bernardino county line) (Caltrans 2013a). The nearest eligible state scenic highway is approximately 7 miles northeast of the proposed Project (State Highway 1, from State Highway 19 near Long Beach to I-5 south of San Juan Capistrano) (Caltrans 2013a). The Project site is not

visible from either of these locations; therefore, proposed Project activities would not affect the quality of the scenic views from these locations.

The City of Los Angeles has City-designated scenic highways, which are considered during local planning and development decisions. Several of these highways are in the vicinity of the proposed Project (City of Los Angeles 1999). John S. Gibson Boulevard, Pacific Avenue (from Crescent Avenue to Paseo del Mar), Front Street, and Harbor Boulevard (between Front Street and Crescent Avenue) are City-designated scenic highways because they afford views of the Port and the Vincent Thomas Bridge. However, views of the Project site from the City-designated scenic highways are either very limited or non-existent because of topography and/or intervening development, including buildings, gantry cranes, and stacked containers. Harbor Boulevard is the closest scenic highway to the Project site. Harbor Boulevard is heavily landscaped in the vicinity of the Port to encourage pedestrian use. The Project site is either partially or fully obscured, depending on the viewing angle, and not distinguishable from the other surrounding facilities within the viewscape.

No scenic trees or rock outcroppings exist at the Project site. Improvements associated with the proposed Project would look almost identical to existing facilities, would be consistent with the existing visual context of a working port, and would not alter scenic resources that are visible from a City-designated scenic highway. Therefore, there would be impacts on scenic resources from the proposed Project.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

No Impact. The landscape at the Port is highly engineered to support maritime freight-related operations. The appearance of many freight operations is industrial and functional in nature and characterized by exposed infrastructure, open storage, unfinished or unadorned building materials, and safety-related, high-visibility colors for mobile equipment such as cranes, containers, and railcars.

The existing visual quality at the Pier 400 railyard is low because of the dominance of the equipment and facilities used in marine terminal and intermodal freight transportation activities. Existing features at the Project site include rail tracks and a bridge. The temporary construction activities associated with the proposed Project are common within a port environment. The setting during construction would generally resemble the existing setting with respect to character; thus, construction of the proposed Project would not be incompatible with the general character of the surrounding areas.

The proposed Project includes extension of an already existing concrete rail bridge to fill the gap between the rail bridge and the roadway bridge on Pier 400's Transportation Corridor and accommodate five new railroad tracks as well as a new access roadway. The proposed Project would be at the same location as the existing features, would be similar in appearance, and would not result in a substantive change in the visual character or quality of the site. Therefore, the proposed Project would not degrade or otherwise significantly affect the existing visual character

or quality of the site and its surroundings. There would be no Project-related impacts on existing visual character or quality.

d) Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

No Impact. The Project site has on-site lighting fixtures throughout the railyard and operates during nighttime hours. The Project site has security lighting as well as general nighttime lighting on the property and along the roadway; however, lighting levels are generally lower than they are at nearby container terminals. With respect to mobile light sources at the Project site, a minimal amount of light comes from locomotives; there is no light from trucks or vehicles on the site. Project construction would not occur during nighttime hours; thus, no construction lighting would be required.

The proposed Project would not include elements that could cause glare, such as windows, light-colored building surfaces, or metal or other reflective surfaces. Mobile light sources may increase slightly with the increase in the number of locomotives that may use the site. Existing lighting would be relocated to the westerly side of the proposed new track. The number of lights at the railyard is expected to be maintained and used for the expanded railyard. Therefore, the proposed Project would not create a substantial new source of substantial light or glare that would adversely affect daytime or nighttime views in the area, and Project-related impacts would not occur.

e) Create a new source of substantial shade or shadow that would adversely affect daytime views in the area?

No Impact. The proposed Project involves expansion of the existing Pier 400 rail storage yard to increase capacity and improve yard operations. Shading in the water as a result of the additional rail tracks on the bridge is addressed under Section 4.4 – Biological Resources. The proposed Project includes extension of an existing concrete rail bridge to fill the gap between the rail bridge and the roadway bridge on Pier 400's Transportation Corridor and accommodate five new railroad tracks as well as a new access roadway. The components would be consistent with existing Project site and Port features and would not create a new source of substantial shade or shadow that would affect daytime views in the area, and Project-related impacts would not occur.

4.2 Agriculture and Forestry Resources

Would the Project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The California Department of Conservation's Farmland Mapping and Monitoring Program develops maps and statistical data for analyzing impacts on California's agricultural resources. The Farmland Mapping and Monitoring Program categorizes agricultural land according to soil quality and irrigation status; the best land is identified as Prime Farmland. According to the Farmland Mapping and Monitoring Program, the Project site is an area that has been designated as Urban and Built-Up Land, which is defined as land with structures that have a variety of uses, including industrial, commercial, institutional, and railroad or other transportation yards (California Department of Conservation 2011a, 2016). There is no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance in the Project vicinity or on the Project site. Therefore, the proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use. No impacts would occur, and no mitigation is required.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

No Impact. The Project site is zoned for heavy industrial uses ([Q] M3-1). There are no agricultural zoning designations or agricultural uses within the Project limits or adjacent areas. The Williamson Act applies to parcels consisting of at least 20 acres of Prime Farmland or at least 40 acres of land that is not designated as Prime Farmland. The Project site is not within a Prime Farmland designation, nor does it consist of more than 40 acres of farmland (California Department of Conservation 2011a, 2016). No Williamson Act contracts apply to the Project site. As such, the proposed Project would not conflict with existing zoning for agricultural use or a Williamson Act contract. No impacts would occur, and no mitigation is required.

c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact. The Project site is currently designated a Heavy Industrial Zone ([Q]M3-1) and ZI-2130 Harbor Gateway State Enterprise Zone. It does not support timberland or forestland. Therefore, the proposed Project would not conflict with existing zoning for, or cause rezoning of, forestland, timberland, or timberland zoned Timberland Production. No impact would occur, and no mitigation is required.

d) Result in the loss of forestland or conversion of forestland to non-forest use?

No Impact. The proposed improvements would occur at an existing marine oil terminal, which has no forestland. The proposed Project would not result in a loss of forestland or the conversion of forestland to non-forest use. No impact would occur, and no mitigation is required.

e) Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?

No Impact. As discussed above, no farmland or forestland is within the surrounding area or at the Project site. The proposed Project would not disrupt or damage the existing environment or result in the conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use. No impact would occur, and no mitigation is required.

4.3 Air Quality

Would the Project:

a) Conflict with or obstruct implementation of the applicable air quality plan or clean air programs?

Less-than-Significant Impact. The federal Clean Air Act (CAA) of 1969 and its subsequent amendments form the basis for the nation's air pollution control effort. The U.S. Environmental Protection Agency (EPA) is responsible for implementing most aspects of the CAA. A key element of the CAA is the National Ambient Air Quality Standards (NAAQS) for criteria pollutants. The CAA delegates enforcement of the NAAQS to the states. In California, the California Air Resources Board (CARB) is responsible for enforcing air pollution regulations. CARB, in turn, delegates to local air agencies the responsibility of regulating stationary emission sources. The South Coast Air Quality Management District (SCAQMD) monitors air quality within the Project site and the South Coast Air Basin (Basin), which includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties.

EPA, CARB, and SCAQMD use ambient air quality monitoring data to determine whether geographic areas achieve the NAAQS. Areas with pollutant concentrations within the NAAQS are designated as attainment areas, whereas areas that do not meet the NAAQS are designated as nonattainment or maintenance areas. For regions that do not attain the NAAQS, the CAA requires preparation of a State Implementation Plan (SIP). The Project area is currently designated a nonattainment area for the ozone, fine particulate matter (PM2.5), and lead[2] NAAQS and a maintenance area for the carbon monoxide (CO) and nitrogen dioxide (NO_2) NAAQS (U.S. Environmental Protection Agency 2018).

Air Quality Management Plan. The 2016 Air Quality Management Plan (AQMP) focuses on attainment of the ozone and particulate matter NAAQS through the reduction of ozone and PM2.5 precursor nitrogen oxides (NO_X) as well as direct control of particulate matter. The AQMP proposes emission reduction measures to bring the Basin into attainment with respect to the ambient air quality standards. AQMP attainment strategies include mobile-source control measures and clean fuel programs, which are enforced at the state and federal levels, for engine manufacturers and petroleum refiners and retailers. As a result, the proposed Project would be required to comply with these regulations as they are developed. Compliance with AQMP requirements would further ensure that the Project's activities would not obstruct implementation of the AQMP. The proposed Project would facilitate shifting cargo handling from trucks to trains and reduce emissions within the Basin. Therefore, the proposed Project would not conflict with or obstruct implementation of the AQMP, the SIP, or the CAA. Impacts would be less than significant, and no mitigation is required.

[2] The Los Angeles area is in nonattainment for the lead NAAQS, mainly due to two lead-acid battery recyclers. Lead would not be generated by the proposed Project and is not considered to be a pollutant of concern for the proposed Project. Accordingly, lead is not analyzed further.

Clean Air Action Plan. The LAHD, with the cooperation from SCAQMD, CARB, and EPA, adopted the San Pedro Bay Ports Clean Air Action Plan (CAAP) on November 20, 2006, and adopted an updated CAAP in November 2010 and November 2017 (LAHD 2006, 2010, 2017). The CAAP is designed to reduce the health risks posed by air pollution from all port-related emission sources, including ships, trains, trucks, terminal equipment, and harbor craft.

The scope and framework of the 2017 CAAP update provides new and updated strategies and emission reduction targets to cut emissions from sources operating in and around the ports, setting the ports firmly on the path toward zero-emissions goods movement. Specifically, the 2017 CAAP update calls for clean vehicles and equipment, additional freight infrastructure investment and planning, and increased freight efficiency. The Project would add rail storage tracks to accommodate (not increase) projected throughput more efficiently, and shift the freight transport mode from trucks to trains, resulting in emissions reduction; it does not include any new vehicles or equipment. This is consistent with freight investment and efficiency strategies. Accordingly, the Project would directly support the 2017 CAAP update and would not conflict with its implementation. Impacts would be less than significant, and no mitigation is required.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less-than-Significant Impact. SCAQMD developed significance thresholds for use in CEQA documents. Table 4.3-1 presents the SCAQMD thresholds of significance for potential air quality impacts.

Table 4.3-1
SCAQMD Significance Thresholds
for Daily Emissions and Ambient Pollutant Concentrations

Daily Emission Thresholds		
Air Pollutant	**Construction Threshold (lbs/day)**	**Operation Threshold (lbs/day)**
NOX	100	55
VOC	75	55
PM10	150	150
PM2.5	55	55
SOX	150	150
CO	550	550
Ambient Pollutant Concentration Thresholds		
Air Pollutant	**Ambient Concentration Thresholds**	
Nitrogen dioxide (NO2)a 1-hour average 1-hour average Annual average	 0.18 ppm (339 µg/m3) (state) 0.100 ppm (188 µg/m3)b (federal) 0.03 ppm (57 µg/m3) (state)	
Particulate matter (PM10)b 24-hour average	 10.4 µg/m3 (construction)	

Table 4.3-1
SCAQMD Significance Thresholds
for Daily Emissions and Ambient Pollutant Concentrations

Daily Emission Thresholds	
24-hour average Annual average	2.5 µg/m3 (operation) 1.0 µg/m3
Particulate matter (PM2.5)b 24-hour average 24-hour average	 10.4 µg/m3 (construction) 2.5 µg/m3 (operation)
Sulfur oxide (SOx) 1-hour average 24-hour average	 0.25 ppm (state) and 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)
Carbon monoxide (CO)a 1-hour average 8-hour average	 20 ppm (23,000 µg/m3) (state) 9.0 ppm (10,000 µg/m3) (state/federal)
Toxic Air Contaminant and Odor Thresholds	
Toxic air contaminants (including carcinogens and non-carcinogens)	Maximum Incremental Risk ≥ 10 in 1 million Hazard Index ≥ 1.0 (Project increment)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402

Source: SCAQMD 2015.

a. The nitrogen dioxide and carbon monoxide thresholds are absolute concentration thresholds, meaning that the maximum predicted Project incremental concentration relative to baseline is added to the background concentration for the Project vicinity, and the total concentration is compared to the threshold.

b. The PM10 and PM2.5 thresholds are incremental concentration thresholds, meaning that the maximum predicted Project incremental concentration relative to baseline is directly compared to the threshold without adding the background concentration.

Construction Impacts

Criteria pollutant emissions were estimated for each construction phase, in accordance with the anticipated Project construction schedule found in Appendix A, Air Quality Supporting Documentation. Construction was assumed to occur between April 2020 and September 2021. The actual construction schedule may differ from the one used in the analysis, depending on requirements of the Project proponent and construction contractor. However, any postponement of construction activities would most likely result in lower impacts as increasingly stringent regulatory requirements are implemented compared with those assumed in the analysis years.

Construction activities would require the use of off-road construction equipment and on-road vehicles. These emission sources would use primarily diesel fuel, resulting in combustion exhaust emissions in the form of volatile organic compounds (VOCs), CO, NO_X, sulfur dioxide (SO_2), and particulate matter. Ground-disturbing activities, such as material movement and grading, would also generate particulate matter emissions in the form of fugitive dust. Paving activities could also generate VOC emissions.

Emissions were quantified using CARB's 2017 Off-road Diesel Emission Factors, EMFAC2014, and EPA's AP-42. All off-road construction equipment was assumed to be 5 years old or newer at the start of construction in 2020 (except for pile drivers, which were conservatively modeled as a 25-year-old engine). On-road vehicle emissions account for both employee commute trips and haul truck trips for material and equipment removal and delivery. Please refer to Appendix A, Air Quality Supporting Documentation, for more detailed assumptions and emission calculations.

Construction-related criteria pollutant impacts were based on the proposed Project's peak-day emissions within the Basin, then compared to SCAQMD's regional emission thresholds. Table 4.3-2 summarizes the results and shows that all pollutant emissions would be below the significance thresholds.

In addition to the regional emissions presented above, localized impacts were also analyzed using SCAQMD's Localized Significance Threshold (LST). The LST methodology is based on maximum daily allowable emissions, the area of the source for the emissions, the ambient air quality in each Source Receptor Area (SRA), and the distance to the nearest exposed individual. The LST is set up as a series of look-up tables for emissions of NO_X, CO, particulate matter (PM10), and PM2.5. If anticipated emissions are below the LST look-up table emission levels, then the proposed activity is considered not to violate or substantially contribute to an existing or projected air quality standard.

Table 4.3-2
Regional Construction Emissions (pounds per day)

Construction Phase	VOC	NO_X	CO	PM10	PM2.5	SO_2
Site Removals	1	25	10	10	2	< 1
Abutments	2	42	10	2	1	< 1
Bents	2	19	10	1	1	< 1
Girders	< 1	3	4	< 1	< 1	< 1
Crane Demobilization	< 1	1	2	< 1	< 1	< 1
Rail Track and Turnouts	1	19	15	1	1	< 1
Paving	6	8	6	1	< 1	< 1
Site Removals	1	25	10	10	2	< 1
Project Worst-Case Scenario	6	61	25	10	2	< 1
Threshold	75	100	550	150	55	150
Above CEQA Threshold?	No	No	No	No	No	No
Notes: Project worst-case scenario assumes overlapping activity among concurrent phases.						

The parameters below were selected in determining localized air quality impacts, using the LST methodology. These parameters were selected because they would result in conservative (overstated) impacts:

- Five-acre site (or greater).

- The closest residential receptor is more than 500 meters north of the Project construction area. Receptors farther than 500 meters would experience lower impacts.
- The closest off-site work receptor would be within 25 meters of the Project construction area. Off-site work receptors farther than 25 meters would experience lower impacts.
- The proposed Project would be located in SRA 4, South Coastal Los Angeles County.

Table 4.3-3 summarizes on-site peak daily emissions associated with construction of the proposed Project. The table shows that all pollutant emissions would be below the LST.

Table 4.3-3
Peak Daily Localized On-Site Construction Emissions

	Peak-Day Emissions (lbs/day) – Residential Receptors			
Analysis	**NO_x**	**CO**	**PM10**	**PM2.5**
Project Worst-Case Scenario	47	22	8	2
Localized Significance Threshold	179	10,198	191	120
Significant?	**No**	**No**	**No**	**No**
Notes: Project worst-case scenario assumes overlapping activity among concurrent phases. Off-site emissions excluded from the analysis were assumed to originate from flatbed trucks, haul trucks, and worker commute vehicles.				

Operational Impacts

The proposed Project would shift the transport mode for containers from truck to on-dock rail, thereby reducing truck miles and associated on-road emissions, while adding a small increase in rail volumes and locomotive emissions. Reductions in truck miles were quantified using the Port of Los Angeles and the Port of Long Beach container trip generation model called "QuickTrip." Emissions factors for exhaust, tire wear, and brake wear were generated by CARB's EMFAC2014 model. Truck emissions account for the future truck mix (truck age distribution) and the turnover of existing trucks over 20 years, as estimated by POLA/POLB and their consultants. These detailed truck mix forecasts rely on existing truck information collected from the POLA/POLB annual emissions inventory.[3] These emission calculation methodologies were also used in the POLA/POLB 2017 CAAP. Such fleet forecasts were developed in concert with the POLA/POLB emissions inventory working group, which includes EPA, CARB, and SCAQMD. The PM10 and PM2.5 emissions also include the contribution from re-entrained road dust, based on emission factors derived from the CARB Emission Inventory, Chapter 7.9, Miscellaneous Process Methodology, Entrained Road Travel, Paved Road Dust (November 2016). Moving emissions also depend on estimated VMT and average daily speed on each analyzed roadway segment with reduced truck trips between the APMT terminal and the off-dock railyards.

[3] See https://www.portoflosangeles.org/pdf/2016_Air_Emissions_Inventory.pdf.

Emissions from increased locomotive activity were estimated using the detailed train speeds generated by the Port of Los Angeles' Rail Traffic Controller simulation model and EPA's (2009) Emission Factors for Locomotives. This model is utilized universally by Class I railroads, ports, and commuter passenger rail agencies throughout North America. Varying train speeds generated by the Rail Traffic Controller model were used for various segments inside and outside the POLA, including the Alameda Corridor.

Refer to Appendix A, Air Quality Supporting Documentation, for more detailed assumptions and emissions calculations. The difference between reduced on-road emissions and increased rail emissions represents the net effect of the Project on air quality, which is net reduced emissions as shown on Table 4.3-4. Note that the emissions estimate presented in Table 4.3-4 is conservative because it does not account for reduced emissions, which are attributable to decreases in vehicle delay and travel times for all motorists as a result of fewer truck trips and less congestion.

A significance determination regarding regional air quality impacts is determined by comparing the proposed Project's net daily emissions with SCAQMD thresholds. Emissions were modeled under both Project opening-year (2021) and design-year (2040) conditions to account for changes in regulatory requirements, growth in container volumes, and improvements in vehicle technology. The emissions estimates presented in Table 4.3-4 show that implementation of the Project would result in long-term reductions in all criteria pollutant emissions. Although there would be a slight increase in CO emissions under Project opening-year conditions, this increase would be well below the significance threshold.

Because the proposed Project would result in a long-term regional emissions reduction, localized emissions would also be reduced. No further analysis of localized impacts associated with criteria pollutants is required. Impacts related to violations of air quality standards do not exceed significance thresholds. Therefore, impacts would be less than significant, and no mitigation is required.

c) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

Less-than-Significant Impact. As described above, EPA has adopted the NAAQS to protect human health and prevent environmental and property damage. Within California, CARB has adopted complementary standards (i.e., the California Ambient Air Quality Standards). With respect to the California Ambient Air Quality Standards, the Project site is designated a state nonattainment area for ozone, PM10, and PM2.5 (CARB 2017).

Table 4.3-4
Daily Operational Emissions – Proposed Project (Pounds per Day)

Source Category	VOC	NO_X	CO	PM10	PM2.5	SO_2
Project Opening (2021)						

Table 4.3-4
Daily Operational Emissions – Proposed Project (Pounds per Day)

Source Category	VOC	NO_X	CO	PM10	PM2.5	SO_2
Haul Truck[a]	-2	-115	-9	-3	-1	< 0
Locomotive[a]	2	42	11	1	1	< 1
Net Project Emissions[b]	*-1*	*-73*	*2*	*-2*	*< 0*	*< 0*
Significance Threshold	55	55	550	150	55	150
Significant?	**No**	**No**	**No**	**No**	**No**	**No**
Design Year (2040)						
Haul Truck[a]	-8	-216	-115	-7	-2	-1
Locomotive[a]	1	30	25	< 1	< 1	< 1
Net Project Emissions[b]	*-7*	*-186*	*-90*	*-7*	*-2*	*< 0*
Significance Threshold	55	55	550	150	55	150
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:

a. Represents the difference in emissions with and without the proposed Project and assumes the diversion of all 525,275 containers from truck to rail over time. This assumption is based on likely commercial decisions, which would be based on increased efficiency, speed, and cost savings from on-dock rail compared with trucking to off-dock railyards, although there is no requirement for the diversion from truck to rail.

b. Sum of reduced haul truck emissions and increased locomotive emissions.

Air quality in the Basin has improved over the last several decades. The improvement in air quality is attributed to emissions reductions from industrial sources, the introduction of low-emission fuels for on-road motor vehicles (e.g., low-sulfur fuels, reformulated gasoline, and low-carbon fuel standards), and implementation of the AQMPs, which identify emission reduction strategies and are subsequently promulgated as enforceable regulations.

Cumulative impacts may result from individually minor but collectively significant projects. CEQA Guidelines Section 15355 defines cumulative impacts as "two or more individual effects that, when considered together, are considerable or compound or increase other environmental impacts." CEQA Guidelines Section 15064(h)(4) also states that "the mere existence of cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed Project's incremental effects are cumulatively considerable."

SCAQMD has developed a policy to address the cumulative impacts of CEQA projects (SCAQMD 2003). The policy identifies the cumulative threshold, which is the same as the project-level threshold, and indicates that project impacts are cumulatively considerable if they exceed project-specific air quality significance thresholds. As shown in Tables 4.3-2 through 4.3-4, neither construction nor operation of the Project would exceed SCAQMD's thresholds. Therefore, implementation of the Project would not result in a cumulatively considerable contribution to the

existing pollution burden in the Basin. Impacts would be less than significant, and no mitigation is required.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-Significant Impact. Sensitive receptors include schools, residences (which, for the proposed Project, includes liveaboards[4] on boats used as residences), hospitals, and convalescent facilities. The LAHD also includes off-site workers who can be affected by project activities in CEQA analyses. The nearest sensitive receptors to the Project construction site are the liveaboard boats in the marinas to the north, with the closest at the Newmarks Yacht Centre on Peninsula Road, approximately 4,400 feet away. The nearest offsite residences are liveaboards that are located more than 1.5 miles north of the Project site. The closest off-site workers would be to the north and west, within the Port.

Impacts on sensitive receptors are typically evaluated in terms of exposure to toxic air contaminants, in accordance with the 2015 EPA's Office of Environmental Health Hazard Assessment (OEHHA) Guidelines (OEHHA 2015). Cancer risk is considered to accrue over many decades of exposure. OEHHA Guidelines recommend that cancer risk be analyzed for a 20-year off-site occupational exposure and a 30-year residential exposure. Non-cancer chronic impacts and acute health impacts are evaluated over a maximum 1-year exposure period.

Project construction would be limited to approximately 40,000 feet of track, a new asphalt access roadway, and extension of the existing concrete rail bridge over an 18-month period. This is much shorter than the exposure durations recommended for off-site occupational and residential exposure in the OEHHA Guidelines and therefore unlikely to result in a significant cancer risk. Similarly, because large LAHD terminal projects have not historically resulted in significant non-cancer impacts, construction of the proposed Project is also not anticipated to result in significant non-cancer impacts. Ultimately, construction impacts would not be considerable because an adequate distance would separate sensitive receptors from the Project site and there are no criteria pollutants that exceed a threshold of significance. SCAQMD has determined that toxic air contaminant impacts are localized in nature and that exposure declines by approximately 90 percent at 300 to 500 feet from the source of the emissions (SCAQMD 2005). The nearest sensitive receptors would be more than 1.5 miles from the Project site. Calculated emissions would not exceed the health-protective significance thresholds for sensitive receptors.

Once operational, the Project would reduce trucks miles traveled on PHFS routes, including I-710 and I-110. The number of vehicle trips to the Port on local roadways would also be reduced. Receptors adjacent to PHFS routes and local roadways would therefore be exposed to less diesel particulate matter and fewer associated health risks from on-road mobile sources. The proposed Project would increase on-dock rail activity slightly; however, any increase in locomotive emissions would be localized and would dissipate as a function of distance. Exposure to diesel

[4] Liveaboards are considered people who makes a small yacht in one of the Port marinas their primary residence.

particulate matter at the nearest residential receptor, which is more than 1 mile to the north, would be reduced. Health risks are not expected to exceed significance thresholds.

Because Project construction and operational activities would not expose sensitive receptors to substantial pollutant concentrations, impacts would be less than significant. No mitigation is required.

e) Create objectionable odors affecting a substantial number of people?

Less-than-Significant Impact. Construction activities under the proposed Project would increase air pollutants with the combustion of diesel fuel and the limited paving on the site. Increased on-dock rail activity may also result in additional localized odors from diesel-powered locomotives. Some individuals might find diesel combustion emissions to be objectionable in nature, although quantifying the odorous impacts of these emissions on the public is difficult because of the complex mixture of the chemicals in diesel exhaust and differing odor thresholds. It is difficult to quantify the potential for changes in perceived odors, even when air contaminant concentrations are known.

The mobile nature of most of the proposed Project's emission sources would serve to disperse emissions. In addition, the distance between emission sources and the nearest sensitive receptor is expected to be far enough to allow adequate dispersion. Furthermore, the existing industrial setting for the proposed Project represents an already complex odor environment. For example, at the nearby container terminals, freight movement activities use diesel trucks and diesel cargo-handling equipment, which generate exhaust odors similar to those that would be generated by the proposed Project. Within this context, the proposed Project would not be likely to result in changes to the overall odor environment in the vicinity. Therefore, the proposed Project would not create objectionable odors that would affect a substantial number of people. Impacts would be less than significant, and no mitigation is required.

4.4 Biological Resources

The Port of Los Angeles, in conjunction with the Port of Long Beach, has worked with state and federal resource agencies to conduct periodic evaluations of biological resources within the San Pedro Bay Port Complex and assess biological conditions within the various harbor habitats. The most recent evaluation was conducted in 2013–2014 (MBC 2016).

Terrestrial Biological Resources

The Project is proposed for an area that has been highly modified for industrial use. The proposed terrestrial development would generally occur on land with pavement or hard-packed dirt that is used to access the train tracks. Ruderal vegetation occurs near the track switching area at the northern end of the Project site as well as a low-density buffer zone adjacent to the westernmost track. The ruderal vegetation is characterized by nonnative and common native species that are frequently found in disturbed habitats. The existing access road and the adjacent vegetated and non-vegetated buffer between the existing tracks and Navy Way will be converted into a widened set of rail tracks. A new asphalt access roadway would extend the full length of the Project area, paralleling the new tracks along the western edge. Decorative palm trees

line both sides of Navy Way, which runs parallel to the tracks on the west. California ground squirrels (*Otospermophilus beecheyi*) are likely to be found in the Project area, but no other conspicuous animals are expected to reside in the area. Birds are expected to forage in the ruderal vegetation, but nesting is not likely. Some bird species, especially nonnative European starlings (*Sturnus vulgaris*), are expected to use the decorative palm trees for nesting. Herons and egrets are known to occasionally nest in palm trees around the Port Complex. The Pier 400 least tern colony is more than 1 mile away from the proposed Project.

Marine Biological Resources

The Project includes construction of a new bridge to fill the gap between the rail and the Navy Way bridges. The bridges cross over a channel that connects the Pier 300 Basin with the Outer Harbor of the Port of Los Angeles, a distance of about 360 feet. The width of the channel between the north and south shores is approximately 335 feet. The channel is lined on both sides by rocks and concrete rubble that extends from the roadbed and footing of the bridges, down through the intertidal and subtidal slope, to the base of the channel, at a depth of approximately -20 feet mean lower low water (MLLW). The center of the channel is expected to be soft bottomed and composed primarily of sandy sediments. The existing bridges are supported by concrete piles, similar to those planned for the proposed Project, that have been driven into the sea floor.

Hard-bottom Community

Port Complex riprap habitats are characterized in the high intertidal zone primarily by bare rock with barnacles (*Balanus* and *Chthamalus*) and limpets (*Lottia* spp.) (MBC 2016). Because of shading from the two existing bridges, algae species, such as green alga (*Ulva*), encrusting red and brown algae, and red algal turfs, which are reported on riprap without cover elsewhere in the Port Complex, are expected to be absent on the riprap or, if present, only sparsely represented in the open area between the two bridges. Deeper in the intertidal bryozoans, sponges, tube snails *(Serpulorbis squamigerus*), limpets, and barnacles *(Balanus*, *Chthamalus*, and *Tetraclita)* are expected to be common. However, articulated coralline algae and red algal turfs, which are common elsewhere in the Port Complex, are unlikely to occur on the riprap because of shading. During a visit to the bridge in July 2018, giant kelp (*Macrocystis pyrifera*) was observed growing on the riprap in the Port of Long Beach Outer Harbor, adjacent to and slightly into the corner of the channel, but it was not observed on the riprap under the rail bridge or, to the extent observable, in the gap between the bridges. During the site visit, it was possible to examine this community on some of the piles that support the rail bridge (Figure 4.4-1). The biota was similar to that of the community observed on the piles in the West Basin of the Port of Los Angeles (MBC 2016). The density of the organisms on the piles was generally higher than on the nearby riprap and consisted of barnacles, hydroids, oysters, and mussels. No algae were observed growing on the piles on the outer row of supports.

Figure 4.4-1. Pier Piling Biota, Rail Bridge (July 2018)

Soft-bottom Community

The soft-bottom community in the channel is expected to be similar to that found during sampling conducted in August 2013 and May 2014 at Station LA7 in the Pier 300 Basin, which is approximately 750 feet from the channel and at a comparable depth (MBC 2016). The infauna community at Station LA7 was dominated by small amphipod crustaceans, *Sinocorophium heteroceratum* and *Heterophoxus ellisi*; an annelid, *Cossura* sp. A Phillips, 1987; and the Asian semele (*Theora lubrica*). Each of these species contributed more than 5 percent to the total abundance collected during the two surveys and together accounted for 63 percent of all individuals collected. Overall, 707 individuals (447 in 2013 and 260 in 2014) of 73 species (49 in 2013 and 46 in 2014) were taken. Biomass was very similar between the surveys, at 3.63 grams in 2013 and 3.64 grams in 2014. Diversity was relatively similar, at 2.33 in 2013 and 2.62 in 2014. The Benthic Response Index, an abundance-weighted average pollution tolerance of species occurring in a sample, was 27.4 in 2013 and 24.4 in 2014, both indicating "reference," or undisturbed, conditions at that location. The larger epibenthic invertebrates caught at Station LA7 included black-spotted bay shrimp (*Crangon nigromaculata*), tuberculate pear crab (*Pyromaia tuberculata*), Xantus' swimming crab (*Portunus xantusii*), New Zealand bubble snail (*Philine auriformis*), and unidentified tunicates. Seven invertebrate species were taken during both day and night trawls in 2013, comprising 28 individuals collected during the day and 311 at night. In 2014, 137 individuals of 14 species and 87 individuals of 11 species were collected day and night, respectively.

Eelgrass

Eelgrass (*Zostera marina*) is a temperate seagrass that grows in protected, shallow soft-bottom coastal environments, such as enclosed bays and estuaries. Eelgrass, which is highly productive and habitat forming, contributes to the ecosystem at multiple levels. It is a habitat structuring element, a substrate for epiphytes and epifauna, and a sediment stabilizer. It also cycles nutrients. In addition, eelgrass provides shelter and foraging areas for young fish and invertebrates. Eelgrass is known to occur on shallow soft-bottom habitat near the channel, on the west side of the Pier 300 Basin in the Port of Los Angeles, and about 500 feet away from the channel along the foot of the Navy Mole in the Port of Long Beach

(MBC 2016). However, eelgrass was not reported in the channel during the 2013–2014 survey of the Port Complex. More recent surveys indicate that the eelgrass distribution in the Project area has remained consistent with the 2013–2014 results (Merkel pers. comm.).

Shading

Shading can influence the recruitment of intertidal organisms. In Sydney Harbor, algae and motile invertebrates had greater cover/abundance on unshaded seawalls, while sessile invertebrates had greater cover on shaded seawalls (Blockley and Chapman 2006). The degree of shading was found to influence the composition of fouling invertebrates in Sydney Harbor. Unshaded pilings were covered primarily by filamentous and foliose algae and spirorbid polychaetes. After 9 months of shading, however, the community composition shifted to bryozoans, serpulid polychaetes, solitary ascidians (Styela plicata), and sponges (Glasby 1999).

The acorn barnacle Semibalanus balanoides was studied on the New England coast. Shading high intertidal cobbles from solar radiation decreased rock and barnacle temperatures, dramatically increased survivorship and eliminated the survivorship advantage of high densities. High recruitment of this species has been shown to result in massive density-dependent mortality in physically benign habitats, but in physically stressful habitats, high recruitment density may buffer individuals from stress and facilitate survival (Bertness 1989). South of Cape Cod, high intertidal acorn barnacle survivorship was enhanced by experimental shading. In contrast, at cooler northern sites and coastal bays, shading did not enhance survival, and mortality was driven primarily by predators with large boreal distributions (Bertness et al. 1999).

Fishes

Pelagic fish sampling conducted by lampara net at Station LA7 in May 2014 resulted in a catch of 263 individuals of 10 species during the day and 4,666 individuals of 12 species at night (MBC 2016). Overall 17 different species were collected during the pelagic fish sampling. Northern Anchovy (*Engraulis mordax)* accounted for 90 percent of the day catch and 98 percent of the night catch. White Croaker (*Genyonemus lineatus)* was the second most abundant species during both surveys but contributed less than 3 percent to the total abundance during the day and 1 percent at night. Bottom fish were sampled by otter trawl at Station LA7 in late summer 2013 and spring 2014. Average abundance during day samples for the two seasons was 67 individuals per trawl, with 16 fish species represented. During night trawls, abundance averaged 479 individuals; an average of 21 species were caught. Overall, 26 fish species were taken at Station LA7 during the 2013–2014 survey. In 2013, the otter trawl day catch was dominated by California Lizardfish (*Synodus lucioceps*), which accounted for 75 percent of the abundance for the trawl. At night, the catch was dominated by Queenfish (*Seriphus politus*) (63 percent) and White Croaker (25 percent). In 2014, White Croaker (19 percent), California Lizardfish (18 percent), and California Halibut (*Paralichthys californicus*) (18 percent) were the most common species taken. At night the catch was dominated by White Croaker (60 percent) and Queenfish (8 percent), with another 7 percent of the catch abundance contributed by Barred Sand Bass (*Paralabrax nebulifer*). Beach seine sampling was also conducted in the Pier 300 area in summer 2013 and spring 2014. Three species—Topsmelt (*Atherinops affinis*), California Grunion (*Leuresthes tenuis*), and Pacific Staghorn Sculpin (*Leptocottus armatus*)—were caught in 2013, with 423 individuals,

95 percent of the total from two seine tows, contributed by Topsmelt. In 2014, 166 Topsmelt, representing 91 percent of the combined total catch, were caught. Eight additional species were taken in 2014, although none contributed more than 2 percent to the total abundance.

All of the open-water species collected at Station LA7 are likely to occur, at least occasionally, in the channel in the Project area. In addition, fish that are attracted to structures, such as riprap and piles, are likely to commonly occur in the channel. Fish species reported in similar habitats during the 2013–2014 Port Complex surveys included Opaleye (*Girella nigricans)*, Blacksmith (*Chromis puncipinnis*), Garibaldi (*Hypsypops rubicundus*), Kelp Bass (*Paralabrax clathratus*), Señorita (*Oxyjulis californica*), Blackeye Goby (*Rhinogobiops nicholsii*), Round Stingray (*Urobatis halleri*), and Horn Shark (*Heterodontus francisci*) (MBC 2016).

Essential Fish Habitat

The proposed Project is within an area that has been designated as Essential Fish Habitat (EFH) for both the Coastal Pelagic and Pacific Groundfish Fisheries Management Plans (FMPs) (Pacific Fishery Management Council 2011, 2016a, 2016b). In all, 107 fish species, eight fish species groups, one invertebrate species, and two invertebrate groups were listed as managed or ecosystem component species in the FMPs. Adult or juveniles of 16 of those managed species were collected by lampara net, otter trawl, or beach seine during the 2013–2014 surveys at the Port Complex (Table 4.4-1).

Table 4.4-1
Managed Species Caught by Lampara Net, Otter Trawl, or Beach Seine Sampling in the Port Complex in 2013–2014 (MBC 2016)

Common Name	Scientific Name	Management Plan
Northern Anchovy	*Engraulis mordax*	Coastal Pelagic Species
Pacific Sardine	*Sardinops sagax*	Coastal Pelagic Species
Pacific Mackerel	*Scomber japonicus*	Coastal Pelagic Species
Jack Mackerel	*Trachurus symmetricus*	Coastal Pelagic Species
California Market Squid	*Doryteuthis opalescens*	Coastal Pelagic Species
Jacksmelt	*Atherinopsis californiensis*	Coastal Pelagic Ecosystem Component Species
California Grunion	*Leuresthes tenuis*	Shared Ecosystem Component Species
Topsmelt	*Atherinops affinis*	Shared Ecosystem Component Species
Leopard Shark	*Triakis semifasciata*	Pacific Groundfish Species
Cabezon	*Scorpaenichthys marmoratus*	Pacific Groundfish Species
Brown Rockfish	*Sebastes auriculatus*	Pacific Groundfish Species
Bocaccio	*Sebastes paucispinis*	Pacific Groundfish Species
California Scorpionfish	*Scorpaena guttata*	Pacific Groundfish Species
Gopher Rockfish	*Sebastes carnatus*	Pacific Groundfish Species
Vermillion Rockfish	*Sebastes miniatus*	Pacific Groundfish Species

California Skate	*Raja inornata*	Pacific Groundfish Ecosystem Component Species

Birds

Monthly surveys conducted in the Port Complex for 12 months in 2013–2014 reported 76,260 individuals of 96 bird species (MBC 2016). Although water-associated birds may occasionally forage or roost in the channel, none are likely to rely on the channel for habitat. Some upland bird species, such as rock dove (*Columba livia*), European starling, house sparrow (*Passer domesticus*), and house finch (*Haemorhous mexicanus*), may nest in crevasses in the existing bridge structures.

Marine Mammals

During monthly surveys in 2013–2014, as in previous surveys of the Port Complex, the California sea lion (*Zalophus californianus californianus*) was the most commonly observed marine mammal (MBC 2016). The species accounted for 68 percent of total marine mammal observations, was observed year-round, and was typically found resting on buoys, docks, riprap, shorelines, and the bulbous bows of container ships. Harbor seals (*Phoca vitulina*) were less common, accounting for 26 percent of total marine mammal observations. Harbor seals were usually observed resting or foraging along riprap shorelines, particularly adjacent to the breakwaters of the Outer Harbor.

Cetaceans were much less common during 2013–2014 than they were during previous harbor-wide surveys, with observations limited to occasional sightings of pods or small groups of dolphins foraging in the Outer Harbor (MBC 2016). The only cetacean taxa observed during the study were common dolphins (*Delphinus* spp) (a single observation of a pod of 40 individuals) and bottlenose dolphins (*Tursiops* spp) (groups of three to five individuals). Both dolphin species were observed only in the Outer Harbor of the Port Complex. Previous studies observed occasional gray whales and Pacific white-sided dolphins, but neither species was observed during the 2013–2014 study.

Sea Turtles

No sea turtles were reported in the Port Complex during the 2013–2014 survey (MBC 2016). Locally, green sea turtles (*Chelonia mydas*) are known to reside in the thermally enhanced power plant discharges of the San Gabriel River and at the 7th Street Basin in the Seal Beach National Wildlife Refuge. Some are observed regularly in nearby marinas, including Alamitos Bay and Huntington Harbour.

Nonnative Species

During the 2013–2014 surveys of the Port Complex, 27 nonnative (i.e., "introduced") species, 95 cryptogenic species, and 12 unresolved species where reported among the hundreds of species collected by various sampling methodologies (MBC 2016). In particular, eight of the 343 infauna species (2 percent), eight of the 110 invertebrate taxa collected by otter trawl or beach seine (7 percent), and 18 of the 558 riprap taxa (3 percent) were nonnative species. The riprap community is particularly susceptible to the introduction of nonnative species because it includes fouling organisms that are carried worldwide on the hulls of oceangoing vessels. Eight of the 18 introduced riprap species, including a barnacle, two tunicates, and three bryozoans, are considered to have been introduced on vessel hulls. Three species of mollusks, including Pacific oyster (*Crassostrea gigas*) and two infauna species, were introduced by the aquaculture industry;

bay mussel (*Mytilus galloprovincialis*), a European species, is believed to have been introduced to Southern California between 1900 and 1947. During the 2013–2014 study, most nonnative species were found on a pier piling in the Port of Los Angeles West Basin. Based on the site visit, the community on the piles that support the rail bridge appeared to be similar to that found on the piles in the West Basin.

Special Status Species

Some fish and invertebrate species in Southern California are protected under California Department of Fish and Wildlife (CDFW) regulations, although few marine species are listed as either threatened or endangered. Special-status marine species that occur regionally are listed in Table 4.4-2. In the table, species that occur regionally but have no habitat in the Port Complex are considered unlikely to occur; species with appropriate habitat but no known occurrence are considered rare; uncommon species are those that have been reported, or have potential to occur occasionally, in the Port Complex; common species are those observed consistently in the Port Complex, at least seasonally; and abundant species are those reported in notable numbers, at least on a seasonal basis. Species reported as common or abundant in Table 4.4-2 are discussed further below.

Caspian terns (*Hydroprogne caspia*) are the largest of the terns and known to nest locally at the Pier 400 least tern colony (Kaufman 1996; Langdon Biological Consulting 2017). A total of 60 Caspian terns were observed during 12 months of monitoring during the 2013–2014 survey of the Port Complex (MBC 2016). Although the population of the species is stable, or increasing (Kaufman 1996), it is still considered a Bird of Conservation Concern by the U.S. Fish and Wildlife Service. In 2016, approximately 125 Caspian terns nested at the Pier 400 site (Langdon Biological Consulting 2017).

California gulls *(Larus californicus*) are a common winter visitor, and juveniles remain in Southern California during the summer when most of the adult population has migrated to breed (Hamilton and Willick 1996; Kaufman 1996). Nesting occurs on the ground, occasionally in large mixed-gull colonies (Kaufman 1996), near large freshwater or strongly alkaline lakes throughout west-central North America. Disturbance and a loss of nesting habitat led to a decline in the species, but the population has increased in recent decades. More than 4,500 California gulls were observed during the 2013–2014 Port Complex survey (MBC 2016).

Table 4.4-2
Threatened, Endangered, and Sensitive Marine Species with Potential to Occur in Project Area

Common Name	Scientific Name	Status[a]	Likelihood of Occurrence[b]
Invertebrates			
Black abalone	*Haliotis cracherodii*	FE	Rare
Fish			
Tidewater goby	*Eucyclogobius newberryi*	FE, SSC	Unlikely
Southern steelhead – Southern California ESU	*Oncorhynchus mykiss irideus*	FE	Unlikely

Table 4.4-2
Threatened, Endangered, and Sensitive Marine Species with Potential to Occur in Project Area

Common Name	Scientific Name	Status[a]	Likelihood of Occurrence[b]
Sea Turtles			
Loggerhead sea turtle	*Caretta caretta*	FT	Uncommon
Green sea turtle	*Chelonia mydas*	FT	Uncommon
Leatherback sea turtle	*Dermochelys coriacea*	FE	Uncommon
Pacific olive ridley sea turtle	*Lepidochelys olivacea*	FT	Uncommon
Water-associated Birds			
Western snowy plover	*Charadrius alexandrinus nivosus*	FT, SSC, BCC	Uncommon
Common loon	*Gavia immer*	SSC	Uncommon
Caspian tern	*Hydroprogne caspia*	BCC	Common
California gull	*Larus californicus*	WL	Common
Long-billed curlew	*Numenius americanus*	WL, BCC	Rare
California brown pelican	*Pelecanus occidentalis californicus*	FD, SD, FP	Abundant
Double-crested cormorant	*Phalacrocorax auritus*	WL	Common
Black skimmer	*Rynchops niger*	SSC	Common
California least tern	*Sternula antillarum browni*	FE, SE	Common
Elegant tern	*Thalasseus elegans*	WL	Abundant
Marine Mammals			
Guadalupe fur seal	*Arctocephalus townsendi*	FT, ST	Rare
Right whale	*Balaena glacialis*	FE	Rare
Sei whale	*Balaenoptera borealis*	FE	Rare
Blue whale	*Balaenoptera musculus*	FE	Uncommon
Fin whale	*Balaenoptera physalus*	FE	Uncommon
Southern sea otter	*Enhydra lutris nereis*	FT	Rare
Gray whale	*Eschrichtius robustus*	FD	Common
Steller's sea lion	*Eumetopias jubatus*	FT	Rare
Killer whale – southern resident DPS	*Orcinus orca*	FE	Uncommon
Humpback whale	*Megaptera novaeangliae*	FE	Uncommon
Sperm whale	*Physeter macrocephalus*	FE	Rare

Notes:
[a.] FE = Federal Endangered, FT= Federal Threatened, FC = Federal Candidate, FD = Federal Delisted SE = California State Endangered, ST = California State Threatened, SD = California State Delisted SSC = CDFW Species of Special Concern, BCC = Birds of Conservation Concern, FP = CDFW Fully Protected, WL = CDFW Watch List, DPS = Distinct Population Segment, ESU = Evolutionary Significant Unit
[b.] Abundant, Common, Uncommon, Rare, Unlikely

The California brown pelican (*Pelecanus occidentalis californicus*) was originally listed as endangered because of its low reproductive success, attributed to egg-shell thinning as a consequence of pesticide

contamination. Following the ban on the use of DDT, the population has undergone a major recovery. However, ongoing problems with botulism at the Salton Sea continue to affect the population. Brown pelicans nest on some offshore islands and in Mexico. They are found along the California coast all year, but numbers greatly increase with the influx of post-breeding birds in summer. Brown pelicans are plunge divers, feeding on fish in the open waters of harbors. Northern anchovy contributes a significant portion of their diet. It is likely that brown pelicans use the nearshore environment for resting and foraging and possibly floats, pilings, and other artificial structures in the area for roosting. More than 7,300 California brown pelicans were observed during the 12 months of bird surveys conducted during the 2013–2014 Port Complex study (MBC 2016).

Double-crested cormorant (*Phalacrocorax auritus*) were observed commonly during the survey of the Port Complex, with more than 3,900 observations recorded (MBC 2016). Double-crested cormorants were most commonly observed rafting on the water or roosting on riprap, particularly on the outer breakwaters. Double-crested cormorants nest in the Port Complex on a transmission tower adjacent to the Cerritos Channel in the Port of Long Beach.

Black skimmers (*Rynchops niger*) feed by flying low and dragging their lower bill through water, then snapping it shut when they encounter a prey fish. During the 2013–2014 survey, 116 black skimmers were observed from January through August, with the greatest number of individuals counted in May (MBC 2016). The largest number of skimmers occurred at Cabrillo Beach. In 2016, 50 black skimmers established nests at the Pier 400 least tern colony (Langdon Biological Consulting 2017).

California least tern (*Sternula antillarum browni*), a ground-nesting species, is state and federally listed as endangered because of the loss of nesting habitat associated with human impacts (Kaufman 1996). California least tern historically nested within the Port of Los Angeles; nesting has been monitored every year since 1973 (Langdon Biological Consulting 2017). Since 1984, the Port of Los Angeles has provided 15 acres of suitable protected nesting habitat for the California least tern. Since 1997, the Port of Los Angeles has designated a protected 15.7-acre site for the least tern colony on Pier 400. Typically, California least terns arrive at the Pier 400 nesting site in early April and remain until September, or until all chicks have fledged. During the 12-month 2013–2014 Port Complex study, 222 California least terns were observed from April through July, with most of the birds observed immediately adjacent to the Pier 400 nesting colony or flying over the colony (MBC 2016). During the 2014 nesting season, 93 breeding pairs produced an estimated 126 nests, resulting in 64 fledged chicks from the Pier 400 least tern colony. In 2016, 126 pairs of California least terns produced 141 nests, resulting in 66 fledged chicks (Langdon Biological Consulting 2017).

Elegant tern (*Thalasseus elegans*) was the third most abundant species recorded during the 2013–2014 surveys, with more than 8,000 individuals noted, all between March and September. The peak number of individuals was recorded in July (MBC 2016). Elegant terns, like Caspian and California least terns, have historically nested within the Port of Los Angeles. They currently nest at the Pier 400 least tern colony, which is one of only four breeding areas for the species in Southern California. Although up to 5,000 elegant terns initiated nesting adjacent to the least tern colony by the middle of May 2016, within a few days of the

peak numbers, the site was complete abandoned, most likely due to the presence of a unknown predator (Langdon Biological Consulting 2017).

California gray whales (*Eschrichtius robustus*) pass offshore along Southern California annually during their migration between the Bering Sea and birthing lagoons in Baja California. Traditional southbound paths during the winter months are well offshore of the Project area. Northward migration through Southern California occurs from February through May, with peak occurrence in March (MBC 1989; Bonnell and Dailey 1993). Northbound migration paths tend to be similar to the southbound paths through Southern California; however, most mother/calf pairs tend to remain fairly close to land. Baleen whales, including the gray whale, do not have teeth but instead a series of plates in the roofs of their mouths, which contain bristles that are used like a sieve or mat for feeding. No gray whales were observed during monthly surveys in 2013–2014, but they have been observed in the Port Complex on occasion (MBC 2016).

All marine mammals are protected through the Marine Mammal Protection Act (MMPA) and native birds through the Migratory Bird Treaty Act (MBTA) (see Applicable Regulations, below). In addition to these species, Garibaldi is the Official State Marine Fish of California, and any take of the species in California is banned.

Significant Ecological Area

The least tern colony nesting site on Pier 400 is designated as a Significant Ecological Area by the County of Los Angeles (County of Los Angeles Department of Regional Planning 2015).

Habitat Areas of Particular Concern

As defined in Fisheries Management Plans, Habitat Areas of Particular Concern (HAPCs) have been identified as estuaries, rocky reefs, and giant kelp, seagrass, and other specific areas (such as seamounts). Eelgrass, giant kelp, and rocky reef habitat are known to occur in the Project area.

Areas of Special Biological Significance

Areas of Special Biological Significance (ASBS) are designated by the State Water Resources Control Board (SWRCB) as areas where the protection of species or biological communities is required, to the extent that the alteration of natural water quality would be undesirable. The Northwest Santa Catalina Island ASBS, located about 25 miles away, is the nearest ASBS to the Project area. On the mainland, Heisler Park ASBS, located about 29 miles downcoast in Laguna Beach, is nearest to the Project area.

Marine Protected Areas

The voters of California passed the Marine Life Protection Act (MLPA) into law in 1999 to protect the natural diversity and abundance of marine life and marine ecosystems. The law directed the state to redesign the system of Marine Protected Areas (MPAs) to function as a network, with the goal of increasing its effectiveness with respect to protecting the state's marine life and habitats, marine ecosystems, and marine natural heritage as well as improving the recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbance. MPAs are separate geographic marine or estuarine areas that have been designed to protect or conserve marine life and habitat. Three types of

MPAs have been designated (or recognized) in California: State Marine Reserves (SMRs), State Marine Parks (SMPs), and State Marine Conservation Areas (SMCAs).

In December 2009, after 18 months of work by regional stakeholders, a science advisory team, staff members, and members of the public, the California Fish and Game Commission initiated the regulatory process for the creation of 35 South Coast Region MPAs (between Point Conception and the U.S./Baja California border, including the Channel Islands). The MPAs became effective in 2012.

Two MPAs, the Abalone Cove SMCA and Point Vicente No-take SMCA, are located offshore at the Palos Verdes Peninsula, upcoast from the Port Complex. The Abalone Cove SMCA is closer to the Port Complex and approximately 8 linear miles from the Project area.

Applicable Regulations

Federal Endangered Species Act

The Endangered Species Act (ESA) (16 United States Code [USC] 1531 et seq.) protects threatened and endangered species as well as the ecosystems upon which they depend. Section 9 prohibits take, defined as an action to harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct. Take, when incidental to otherwise lawful activities, can be authorized under Section 7 when there is a federal nexus (e.g., federal funding, license, authorization) and under Section 10 when there is no federal nexus. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share responsibilities for administering the ESA. Whenever actions that have been authorized, funded, or carried out by federal agencies could adversely affect listed species or designated critical habitat, the federal lead agency must consult with USFWS and/or NMFS under Section 7.

Magnuson-Stevens Fishery Conservation and Management Act

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (16 USC 1801 et seq.) require federal agencies that fund, permit, or carry out activities that may affect EFH or federally managed species to consult with NMFS and respond in writing to the conservation recommendations provided by NMFS. In addition, NMFS is required to comment on any state agency activities that would affect EFH or federally managed species.

Migratory Bird Treaty Act

The MBTA (16 USC 703 et seq.), as amended, provides for the protection of migratory birds by making it illegal to possess, pursue, hunt, take, or kill any migratory bird species, unless specifically authorized by a regulation implemented by the Secretary of the Interior, such as designated seasonal hunting. The act also applies to the removal of nests occupied by migratory birds during the breeding season. Under certain circumstances, a depredation permit can be issued to allow limited and specified take of migratory birds.

Marine Mammal Protection Act

The MMPA (16 USC 1361 et seq.) prohibits take (including harassment, disturbance, capture, and death) of any marine mammals, except as set forth in the act. NMFS and USFWS administer the MMPA. Marine mammal species that may be found in the Port Complex are under the jurisdiction of NMFS.

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 et seq.) provides for the protection of rare, threatened, and endangered plants and animals, as recognized by the CDFW, and prohibits the taking of such species without authorization by CDFW under Section 2081 of the California Fish and Game Code. State lead agencies must consult with CDFW during the CEQA process if state-listed threatened or endangered species are present and could be affected by a project. For projects that could affect species that are both state and federally listed, compliance with the federal ESA will satisfy the CESA if CDFW determines that the federal incidental take authorization is consistent with the California Fish and Game Code (Section 2080.1).

Would the Project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less-than-Significant Impact after Mitigation Incorporated. No candidate, sensitive, or special-status species are known to occur on the Project site, and there is no federally designated critical habitat in the harbor. Several state or federally listed species, as well as other sensitive species, have the potential to occur in the Project area or have been observed in the Port Complex. These include four species of sea turtle; one threatened (western snowy plover; *Charadrius alexandrinus nivosus*) and one endangered (California least tern; *Sternula antillarum browni*) bird species; eight other bird species with state and/or federal protection or designation, including the delisted California brown pelican (*Pelecanus occidentalis californicus)*; the delisted gray whale (*Eschrichtius robustus)*; and two pinnipeds protected by the MMPA (California sea lion [*Zalophus californianus californianus*] and Pacific harbor seal [*Phoca vitulina*]).

Because of heavy industrial use within the Project area and the developed nature of the facilities, the Project site is most likely not a nesting area for listed bird species. The Project would be at least 1 mile from the least tern colony on Pier 400. No impact on nesting by California least tern or other sensitive bird species is anticipated as a result of the proposed Project.

During operations, the proposed Project has the potential to provide additional habitat for nonnative species on the new bridge piles. However, because the proposed Project would not increase shipping, there is no potential for the Project to increase the introduction of nonnative species into the harbor, which could substantially disrupt local biological communities.

The invasive algae *Caulerpa* (*C. taxifolia*) is listed as a federal noxious weed under the U.S. Plant Protection Act. In areas outside its native range, it can grow very rapidly, causing ecological devastation by overwhelming local seaweed species and altering fish distributions. Although this species has never been observed in the Port Complex, it is a threat in Southern California, having been found in two Southern California coastal lagoons in 2000. This has prompted regulatory control measures described in the *Caulerpa* Control Protocol prior to specific underwater

construction activities such as bulkhead repair, dredging, and pile driving (NOAA Fisheries 2008). If required by the USCG or US Army Corps of Engineers Section 404 permit and the *Caulerpa* Control Protocol, a *Caulerpa* survey will be conducted at the Project site prior to the start of construction activities.

Marine mammals, including dolphins, seals, and sea lions, are protected by the MMPA of 1972. California sea lions have been observed in the harbor, especially adjacent to the municipal fish market in the Main Channel and in Fish Harbor. Marine mammals may forage in the harbor but do not breed there. Marine mammals were frequently sighted during the 2013–2014 biological surveys of the Port Complex (MBC 2016). During the survey timeframe, California sea lions were observed throughout the Los Angeles–Long Beach harbor area, including near the Project site, while harbor seals were limited to Outer Harbor waters. Neither of these pinniped species is endangered, and there are no designated significant ecological areas for either species within the Port Complex. Pile installation at the Project site could disturb marine mammals in the vicinity of construction operations and result in Level A harassment during impact driving of sheet piles and king piles at very close range. Therefore, mitigation measure MM-BIO-1 has been proposed to reduce the potential for impacts on marine mammals.

Mitigation Measures

Impacts on marine mammals resulting from noise associated with pile driving would be reduced with implementation of MM-BIO-1. This measure would ensure that marine mammals would be readily able to avoid pile driving areas, and no injuries to marine mammals from pile driving sounds would be expected.

> **MM-BIO-1: Protect Marine Mammals.** Although it is expected that marine mammals will voluntarily move away from the area at the commencement of vibratory or "soft start" pile driving, as a precautionary measure, pile driving activities occurring as part of pile installation will include establishment of a safety zone by a qualified marine mammal professional, and the area surrounding the operations (including the safety zones) will be zones) will be monitored for marine mammals by a qualified marine mammal observer.[5] The pile driving site will move with each new pile; therefore, the safety zones will move accordingly as necessary.

Installation of the piles required to support the bridge would cause underwater sound levels that could also adversely affect fish. However, MM-BIO-1 has been proposed to reduce the potential for pile driving impacts on marine mammals; its implementation would also reduce the likelihood

[5] Marine mammal professional qualifications shall be identified based on criteria established by LAHD during the construction bid specification process. Upon selection as part of the construction award winning team, the qualified marine mammal professional shall develop site specific pile driving safety zone requirements, which shall follow NOAA Fisheries Technical Guidance Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Fisheries 2016) in consultation with the Acoustic Threshold White Paper prepared for this purpose by LAHD (LAHD 2017b). Final pile driving safety zone requirements developed by the selected marine mammal professional shall be submitted to LAHD Construction and Environmental Management Divisions.

of impacts on fish as a result of pile driving. Therefore, with inclusion of MM-BIO-1, impacts associated with listed and other sensitive species would be less than significant.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less-than-Significant Impact after Mitigation Incorporated. There is no riparian habitat at the Project site or in the vicinity; therefore, no impact on riparian habitat would occur.

Pile driving for bridge construction would temporarily affect marine biota through the resuspension of sediments. However, the impact would be limited in extent and duration. After construction, the suspended sediments would settle, and communities disturbed by the temporary turbidity would recover.

Installation of piles would result in conversion of soft-bottom habitat to horizontal hard-surface. The reduction in benthic habitat in the Project area would be minor; however, compared with area of similar available habitat throughout the Port Complex. Impacts from the conversion of the soft-bottom habitat to hard-bottom habitat as a result of the Project would be less than significant.

Bridge construction and operation would affect primarily the local fish and invertebrate communities in two ways: (1) by adding new habitat in the form of a hard substrate (pilings), as discussed above, and (2) by shading (from the new bridge).

Because of the low deck height and the predominantly north–south orientation of the bridges, the uncovered channel between the existing bridges is very likely already mostly shaded, except during the middle of the day when the sun is near its zenith. Covering the channel is not likely to notably change light characteristics in the channel. As stated above, reduced light in intertidal and subtidal systems could result in a reduction in algae and motile invertebrates but an increase in the abundance of sessile organisms. However, no algae were observed during the site visit to the western bridge, even on the outer row of piles, which should receive more light than those under the bridge. This suggests that increased shading as a result of bridge construction is unlikely to result in a change in community composition in the channel, and impacts would be less than significant.

Eelgrass is known to occur on shallow soft-bottom habitat near the channel, on the west side of the Pier 300 Basin in the Port of Los Angeles, and about 500 feet away from the channel along the foot of the Navy Mole in the Port of Long Beach (MBC 2016). Eelgrass is legally protected for its importance to species managed under the Magnuson Stevens Fishery Conservation and Management Act and designated an EFH HAPC for federally managed fish species within the Pacific Coast Groundfish FMP. Because of the depth of the channel in the Project area, in compliance with the California Eelgrass Mitigation Policy, a pre-construction eelgrass survey of the channel would be required. If eelgrass is found, compliance with the California Eelgrass Mitigation Policy (NOAA 2014) would be required to ensure no net loss of eelgrass habitat, and a post-construction survey would be required to assess the loss of eelgrass as a result of construction.

As a result, incorporation of mitigation measure MM-BIO-2 has been proposed to mitigate for any potential loss of eelgrass.

The Project could result in the removal of about 90 decorative palm trees on the eastern edge of Navy Way, which runs parallel to the existing tracks on the west. Some bird species, especially nonnative European starlings, are expected to use the decorative palm trees for nesting. Herons and egrets are also known to occasionally nest in palm trees around the Port Complex. The Project will also result in ground-disturbing activities that, although unlikely, could disturb nests of migratory bird species. The MBTA prohibits the harassment or removal of nests occupied by migratory birds during the breeding season. Incorporation of mitigation measure MM-BIO-3 would avoid impacts on nesting birds as a result of removal of the decorative palm trees or ground disturbance.

Mitigation Measures

Loss of eelgrass would be reduced with implementation of MM-BIO-2.

MM-BIO-2: Protect Eelgrass. The proposed Project shall comply with the California Eelgrass Mitigation Policy. Pursuant to the Policy, the following activities shall be performed:

- A pre-construction eelgrass survey to map the location and extent of eelgrass that could potentially be affected by wharf demolition and construction;
- Use of minimization measures or Best Management Practices, such as silt curtains, to reduce potential effects to eelgrass during Project construction (if present);
- A post-construction eelgrass survey to map the location and extent of eelgrass after completion of wharf demolition and construction;
- If eelgrass is lost due to Project construction, eelgrass shall be mitigated in accordance with the California Eelgrass Mitigation Policy.
- Timing of eelgrass surveys, including the frequency of post-mitigation surveys (if applicable), shall comply with provisions in the California Eelgrass Mitigation Policy.

Therefore, with inclusion of MM-BIO-2, impacts associated with the loss of eelgrass in the Project area would be mitigated to less than significant.

Impacts on potentially nesting birds would be reduced with implementation of MM-BIO-3.

MM-BIO-3: Nesting Bird Protection. If construction occurs between mid-January and mid-September, prior to tree removal, the clearing, removal, or grubbing of any vegetation, or ground disturbing activities ("construction activity"), a qualified biologist will conduct surveys for the presence of nesting birds. Surveys will be conducted 24 - 72 hours prior to the construction activity. If an active nest is found, a work buffer of 150 feet will be established to avoid disturbance of the nest for most bird species. For raptors, a safety buffer of 300 feet will be required. The construction activity will be delayed in the buffer until the chicks are fledged and the area is approved for construction activity by the qualified biologist.

Therefore, with the inclusion of MM-BIO-3, impacts associated with the removal of trees and other vegetation and ground disturbance on active nests of native bird species would be mitigated to less than significant.

c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.), through direct removal, filling, hydrological interruption, or other means?

No Impact. The proposed Project would not affect federally protected wetlands (as defined by Section 404 of the Clean Water Act) during in-water construction activities (i.e., pile driving and bridge construction) because there are no federally protected wetlands in the Project area. The only federally protected wetlands in the harbor area are Anchorage Road Salt Marsh and the Cabrillo Salt Marsh, approximately 1 and 3 miles from the Project site, respectively. Neither of these wetlands would be affected or otherwise disturbed by the proposed Project. Therefore, no impacts would be associated with federally protected wetlands, as defined by Section 404 of the Clean Water Act. No mitigation is required.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less-than-Significant Impact. There are no known terrestrial migration corridors within the Port Complex, including the Project site, because the Port is not located between natural resource areas that terrestrial wildlife would need to traverse. In addition, no fish migratory corridors are located at the Port. Fish nursery habitat exists in shallow areas within the harbor, including the Pier 300 Basin in the Port of Los Angeles which is contiguous with the channel below the new proposed Project bridge and in the Port of Long Beach, adjacent to Pier 400 near the southern terminal of the Proposed project.

Construction activities could temporarily affect marine mammal and fish movement patterns in the vicinity of the Project; however, this impact would be short term in nature. Runoff from the upland portions of the Project site would flow into the Harbor, along with runoff from other adjacent areas of the Harbor's subwatershed. Runoff at the Project site is managed in compliance with applicable permits and ordinances. During construction, runoff from the construction site would be subject to SWPPP requirements, including implementation of BMPs, to control pollutant discharges and implemented prior to start of any construction activities. This construction SWPPP would specify BMPs to prevent and/or control releases of soils and contaminants and avoid impacts on runoff. One or more types of runoff control structures would be placed and maintained around the construction area to minimize loss of site soils to the storm drain system. As another standard measure, concrete truck wash water and runoff of any water that has come in contact with wet cement would be contained on site so that it does not runoff into the Harbor. These measures would minimize any soil and contaminant loading to the Harbor resulting from construction activities. The SWPPP would be prepared by LAHD (or consultant) with LAHD designated as the "Legally Responsible Person."

Construction SWPPPs and standard Port BMPs (e.g., use of drip pans, contained refueling areas, regular inspections of equipment and vehicles, and immediate repairs of leaks) would reduce potentials for materials from onshore construction activities to be transported off site and enter storm drains.

Operation of the proposed Project facilities would not involve any direct point source discharges of wastes or wastewaters to the Harbor or shallow water habitat. Particulates would be deposited on the site and subject to subsequent transport by storm runoff. Transport of contaminants, such as metals, by runoff from the Project site would contribute incrementally to changes in receiving water quality. However, this incremental change is relatively minor. Therefore, impacts associated with movement of any native resident or migratory fish or wildlife species would be less than significant. No mitigation is required

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The Project may result in the removal of about 90 decorative palm trees on the eastern edge of Navy Way, which is parallel to the existing tracks on the west. The only biological resources protected by City of Los Angeles ordinance (City of Los Angeles 2006b) pertain to certain tree species. These species include the Valley Oak (*Quercus lobata*) and California Live Oak (*Quercus agrifolia*), or any other tree of the oak genus indigenous to California excluding the Scrub Oak (*Quercus dumosa*), Southern California Black Walnut (*Juglans californica var. californica*), Western Sycamore (*Platanus racemosa*), and California Bay (*Umbellularia californica*), none of which exists on the Project site. Therefore, no impacts would occur to protected biological resources, and no mitigation is required.

f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The Project site is not within the area of an adopted natural community conservation plan or habitat conservation plan. Only one natural community conservation plan has been approved near the Port. The plan, which is for Rancho Palos Verdes, was designed to protect coastal scrub habitat (CDFW 2015).

There are no habitat conservation plans in place for the Port. However, a memorandum of understanding is in place in order for the Port, the CDFW, the USFWS, and the U.S. Army Corps of Engineers to protect the California least tern. It requires a 15-acre nesting site to be protected during the annual nesting season (May through October). The least tern colony nesting site on Pier 400 is designated as a Significant Ecological Area by the County of Los Angeles (County of Los Angeles, Department of Regional Planning 2015). The Project site is approximately 1 mile from the least tern colony and does not contain nesting habitat or foraging habitat. The proposed Project would have no impact on habitat conservation plans, natural community conservation plans, the memorandum of understanding, or the Significant Ecological Area for California least tern. Therefore, no impact would occur, and no mitigation is required.

4.5 Cultural Resources

This section addresses potential impacts on cultural resources that could result from implementation of the proposed Project. Cultural resources customarily include archaeological resources, ethnographic resources, and those of the built environment (architectural resources). Although not specifically a cultural resource, paleontological resources (fossils predating human occupation) are also considered in this evaluation, as discussed further in Appendix G of the CEQA Guidelines (Environmental Checklist Form).

Would the Project:

a) Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5?

No Impact. From 1994–2000, the Port of Los Angeles undertook a major dredging and landfill project at Pier 400 to accommodate increasing trade activity. It completely reconfigured the area that now makes up Pier 400 in the current Project area. The 1990's-era project created the extension to the Navy Way roadway, with the accompanying rail bridge, and a completely new Pier 400 Transportation Corridor landfill. All newly proposed expansion work at Pier 400 would occur on or adjacent to the landfill that was created after 1994. Because the proposed work would be performed on a landfill that has existed less than 30 years and the pre-1994 setting for this area was completely altered with the post-1994 landfill, Pier 400 has little connection to historic activities that occurred at the Port and does not meet the eligibility requirements for listing on the National Register of Historic Places or California Register of Historical Resources or inclusion as a Los Angeles Historic-Cultural Monument.

It does not appear that Pier 400 was previously evaluated as a historic resource, and it was not previously identified as a Los Angeles Historic-Cultural Monument. Pier 400 was also not identified through SurveyLA, the Los Angeles Conservancy, or the California Historical Resources Inventory Database. Because Pier 400 has not been previously listed and does not meet eligibility requirements for listing on the National Register of Historic Places or California Register of Historical Resources or inclusion as a Los Angeles Historic-Cultural Monument, there would be no impacts on historical resources, and no mitigation is required.

b) Cause a substantial adverse change in the significance of an archaeological resource, pursuant to Section 15064.5?

No Impact. As discussed above, the proposed Project would be located on artificial fill that was part of a landfill project at Pier 400 between 1994 and 2000. Given the absence of known archaeological resources in the Project area, adverse change to an archaeological resource would not occur. There would be no impacts, and no mitigation is required.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. Please see responses to Sections 4.5 (a) and (b) above. There would be no impacts, and no mitigation is required.

d) Disturb any human remains, including those interred outside of dedicated cemeteries?

No Impact. Please see responses to Sections 4.5 (a) and (b) above. There would be no impacts, and no mitigation is required.

4.6 Energy

a) Would the project conflict with adopted energy conservation plans?

Less-than-Significant Impact. The proposed Project would require minimal energy for construction and ultimate operation of the site. The Project would shift freight transport modes to maximize on-dock rail use and minimize truck trips. On-dock rail reduces the amount of cargo transported by truck along roadways to inland railyards, as well as congestion at the on-dock railyard, thereby increasing the overall efficiency of freight movement. Accordingly, the Project would reduce wasteful, inefficient, or unnecessary consumption of energy over the long term, consistent with City of Los Angeles Executive Directive No. 10, the Sustainable City pLAn, and CAAP. Impacts on energy conservation plans would be less than significant, and no mitigation is required.

b) Would the project use non-renewable resources in a wasteful and inefficient manner?

Less-than-Significant Impact. Energy (primarily diesel fuel but also minor amounts of gasoline) would be used during construction of the proposed Project. Energy expenditures during construction would be temporary, lasting for approximately 18 months, and necessary to achieve the overall objective of expanding on-dock rail capacity and improving efficiency. Construction would not result in wasteful or inefficient use of energy. Construction would be consistent with the policies in the Port's Sustainable Construction Guidelines, which require engine emission standards for construction equipment, in accordance with the CAAP.

During operations, the proposed Project would increase the number of containers being loaded/unloaded on/off trains, thereby reducing truck miles and associated diesel fuel consumption. However, shifting containers to on-dock rail lines would result in a small increase in rail volumes as well as the diesel fuel consumed by the locomotives. The difference between reduced on-road activity and increased rail activity represents the net effect of the proposed Project on energy resources. Both rail and on-road fuel consumption were quantified under Project opening-year (2021) and design-year (2040) conditions by converting greenhouse gas (GHG) emissions to gallons of diesel, based on the rate of carbon dioxide (CO_2) emitted per gallon of combusted diesel (22.5 pounds CO_2/gallon) (The Climate Registry 2017).

Tables 4.6-1 and 4.6-2 show energy consumption during construction and operation. Construction fuel consumption represents total fuel use over the 18-month construction period. As shown in Table 4.6-2, long-term operation of the Project would result in a net reduction in diesel consumption, which would offset the short-term fuel use during construction in less than 1 year. Therefore, the proposed Project would not use non-renewable resources in a wasteful or inefficient manner. Impacts would be less than significant, and no mitigation is required.

Table 4.6-1
Total Fuel Use during Project Construction

Source Category	Fuel	Fuel Use (gal)
Off-road Construction Equipment and on-Road Construction Vehicles	Diesel	97,000
Worker commute vehicles	Gasoline	17,000
Total Fuel Consumption	**—**	**114,000**

Table 4.6-2
Fuel Use during Project Operation

Source Category	Fuel	Fuel Use (gal/yr)
2021 Operation		
Haul Truck[a]	Diesel	-291,367
Locomotive[a]	Diesel	59,560
Net Project Fuel[b]	Diesel	-231,807
2040 Operation		
Haul Truck[a]	Diesel	-883,833
Locomotive[a]	Diesel	139,615
Net Project Fuel[b]	Diesel	-744,218

Notes:
a. Represents the difference in fuel use with and without the proposed Project.
b. Sum of reduced haul truck fuel use and increased locomotive fuel use.

c) Would the project result in a need for new systems or substantial alterations to power or natural gas?

No Impact. The proposed Project would not consume any electricity or natural gas or place any additional demand on existing electric or gas infrastructure maintained by the Los Angeles Department of Water and Power. Therefore, the Project would have no impact related to the need for new or substantially altered power or natural gas systems, and no mitigation is required.

4.7 Geology and Soils

Would the Project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the state geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact. No active faults traverse the Project area; therefore, fault rupture is unlikely to occur during Project implementation. In addition, the Project area is not within a Alquist-Priolo Earthquake Fault Hazard Zone (the nearest fault zone is the Newport-Inglewood-Rose Canyon Fault Zone, 5.5 miles northeast of the proposed Project). The proposed Project includes widening of an existing concrete rail bridge, modifications to accommodate five new railroad tracks as well as a new asphalt access road, a new crossover at the south end of the Project area, and relocation of a compressed air system at the northern edge of the Project area. It does not include the addition of new structures meant for human occupancy. In addition, the City of Los Angeles has building and construction design codes that are meant to minimize structural damage resulting from a seismic event. The proposed Project would also be required to comply with applicable engineering standards, Port engineering criteria, and the Los Angeles Building Code. Therefore, impacts related to rupture of a known earthquake fault would not occur, and no mitigation is required.

(ii) Strong seismic ground shaking?

Less-than-Significant Impact. Although the Project area is not within the Alquist-Priolo Earthquake Fault Hazard Zone, potential hazards exist due to seismic activity associated with active faults in the Project vicinity and the presence of engineered fill throughout the Project area. The most important active and potentially active faults for the harbor are the Palos Verdes, Newport-Inglewood, Torrance-Wilmington, San Andrea, San Jacinto, Whittier-Elsinore, and Sierra Madre faults (U.S. Army Corps of Engineers 1992). As discussed in Threshold 4.7.a.i, no structures intended for human occupation would be built, and thus the potential risk to personnel working within the Project area would be limited. In addition, the proposed Project would comply with applicable engineering standards, Port engineering criteria, and the Los Angeles Building Code. Compliance with current regulations and standard engineering practices would reduce anticipated impacts related to the proximity of earthquake faults by requiring Project features to be built to withstand seismic ground shaking. Thus, impacts related to seismic ground shaking would be less than significant, and no mitigation is required.

iii) Seismically related ground failure, including liquefaction?

Less-than-Significant Impact. Liquefaction occurs when saturated, low-density, and loose materials (e.g., sand or silty sand) are weakened and transformed from a solid to a near-liquid state as a result of increased pore water pressure. The increase in pressure is caused by strong ground motion from an earthquake. Liquefaction most often occurs in areas underlain by silts and fine

sands and where shallow groundwater exists. The Project site is identified as an area that is susceptible to liquefaction, per the California Geological Survey's Earthquake Zones of Required Investigation, because of the presence of engineered fill and shallow groundwater. As previously mentioned, the proposed Project would comply with the applicable engineering standards, Port engineering criteria, and the Los Angeles Building Code. Through compliance with appropriate requirements, engineering standards, and building codes, impacts associated with the risk of seismically related ground failure, including liquefaction, would be less than significant, and no mitigation is required.

iv) Landslides?

No Impact. The proposed Project would be constructed and operated on Terminal Island, which is flat and has no significant natural or graded slopes. Furthermore, the proposed Project is not in a California Geological Survey–designated landslide zone. No impacts related to landslides would occur, and no mitigation is required.

b) Result in substantial soil erosion or the loss of topsoil?

Less-than-Significant Impact. Construction of the proposed Project would result in some pavement and soil disturbance during construction activities (i.e., grading and excavating). However, best management practices (BMPs) would be employed during construction, such as sediment and erosion control measures to prevent pollutants from leaving the site. Furthermore, pavement would be repaired following construction, which would prevent on-site soils from eroding during Project operations. The proposed Project would not result in significant soil erosion or the loss of topsoil, and no mitigation is required.

c) Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less-than-Significant Impact. According to the Natural Resources Conservation Service's Web Soil Survey, the Project site is constructed on artificial fill (classified as Urban Land, 0 to 2 percent slopes, dredged fill substratum), which could be susceptible to lateral spreading, subsidence, liquefaction, or collapse. However, the proposed Project would comply with applicable engineering standards, Port engineering criteria, and the Los Angeles Building Code. In addition, Project features do not include structures meant for human occupancy. Compliance with the aforementioned codes, standards, and regulations would reduce potential impacts associated with unstable soils to less than significant, and no mitigation is required.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less-than-Significant Impact. Expansive soils are fine-grained soils (generally high-plasticity clays) that can undergo a significant increase in volume with an increase in water content as well as a significant decrease in volume with a decrease in water content. Changes in the water content of highly expansive soils can result in severe distress for structures constructed on or against the soils. Clay minerals in geologic deposits within the Port and previously imported fill soils could

have expansive characteristics (LAHD 2018). However, the proposed Project would comply with applicable engineering standards, Port engineering criteria, and the Los Angeles Building Code. Adherence to the aforementioned codes, standards, and regulations would reduce potential impacts associated with expansive soils to less than significant, and no mitigation is required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. Project features do not include septic tanks or alternative wastewater disposal systems. During the construction phase, portable toilets would be brought to the site for the construction crew, and the wastewater would be disposed of in the existing sanitary sewer system. No impacts would occur, and no mitigation is required.

4.8 Greenhouse Gas Emissions

This section includes a description of the potential effects of GHGs and analyses of potential GHG emissions and impacts of the proposed Project. The methods of analysis for Project emissions are consistent with the guidelines of the SCAQMD and LAHD's standard protocols.

Emissions of carbon dioxide equivalent (CO_2e) were quantified for construction of the proposed Project using CARB's 2017 Off-road Diesel Emission Factors, EMFAC2014, and EPA's AP-42. Sources contributing to GHG emissions during construction are described in detail Section 4.3, *Air Quality*. The construction contractor shall be required to comply with applicable BMPs and LAHD Sustainable Construction Guidelines (see Section 4.3, *Air Quality*).

Sources contributing to GHG emissions during operation are described in detail in Section 4.3, *Air Quality*, and include on-road haul trucks and locomotives. As previously discussed, the proposed Project would increase the number of containers being loaded/unloaded on/off trains, thereby reducing truck miles and associated on-road GHG emissions. However, shifting to on-dock rail lines would result in a small increase in rail volumes and emissions from locomotives. The difference in emissions between reduced on-road activity and increased rail activity represents the net effect of the Project related to GHGs. Refer to Appendix A, Air Quality Supporting Documentation, for more detailed assumptions and emissions calculations.

CEQA Guidelines Section 15064.4(b) sets forth the factors that should be considered by a lead agency when assessing the significance of impacts from GHG emissions on the environment. These factors are as follows:

- The extent to which a project may increase or reduce GHG emissions compared with the existing environmental setting.
- Whether project emissions exceed a threshold of significance that the lead agency determines applicable to a project.
- The extent to which a project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and reduce or mitigate a project's incremental contribution of GHG emissions.

The guidelines do not specify significance thresholds and allow the lead agencies discretion in how to address and evaluate significance, based on these criteria. To provide guidance to local lead agencies regarding determining significance for GHG emissions in CEQA documents, SCAQMD convened the GHG CEQA Significance Threshold Working Group. Members of the working group included government agencies that implement CEQA and representatives from various stakeholder groups that provide input to SCAQMD staff members regarding developing the GHG CEQA significance thresholds.

On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal regarding an interim GHG significance threshold for projects where SCAQMD is lead agency. For industrial projects, a

significance threshold of 10,000 metric tons per year CO_2e was established. Construction GHG emissions, amortized over project life, are required to be included in a project's annual GHG emissions totals (SCAQMD 2010).

After considering the SCAQMD policy, CEQA Guidelines and LAHD-specific climate change impact issues, LAHD has set a threshold of 10,000 metric tons per year of CO2e for use in this IS/MND to determine the significance of proposed Project–related GHG impacts.

Would the Project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less-than-Significant Impact. GHGs are gases that trap heat in the atmosphere and result from both natural processes and human activities. GHG emissions would be released from combustion sources associated with the proposed Project during construction and operation.

Based on criteria set by the SCAQMD, GHG impacts are determined by analyzing combined amortized construction and future operational emissions. Table 4.8-1 presents the proposed Project's annual GHG emissions and shows that implementation of the Project would result in a net GHG reduction. Therefore, the proposed Project would not generate GHG emissions that may have a significant impact on the environment, and no mitigation is required.

Table 4.8-1. Estimated Project GHG Emissions (metric tons per year)

Source Category	CO_2e
Construction	
2020	538
2021	590
Total Construction	1,127
Amortized Annual Construction	38
2021 Operation	
Haul Truck[a]	-3,008
Locomotive[a]	614
Net Project Emissions[b]	-2,394
2040 Operation	
Haul Truck[a]	-9,105
Locomotive[a]	1,440
Net Project Emissions[b]	-7,665
CEQA Impacts	
2021 Net Operation Plus Amortized Construction	-2,356
2040 Net Operation Plus Amortized Construction	-7,627
Significance Threshold	10,000
Significant?	**No**
Notes: Construction emissions were amortized over 30 years.	

Table 4.8-1. Estimated Project GHG Emissions (metric tons per year)

Source Category	CO_2e
[a.] Represents the difference in emissions with and without the proposed Project.	
[b.] Sum of reduced haul truck emissions and increased locomotive emissions.	

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Informational Assessment. CEQA Guidelines Section 15064.4(b) provides another factor to be considered in assessing the significance of GHG emissions on the environment: "the extent to which a project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions."

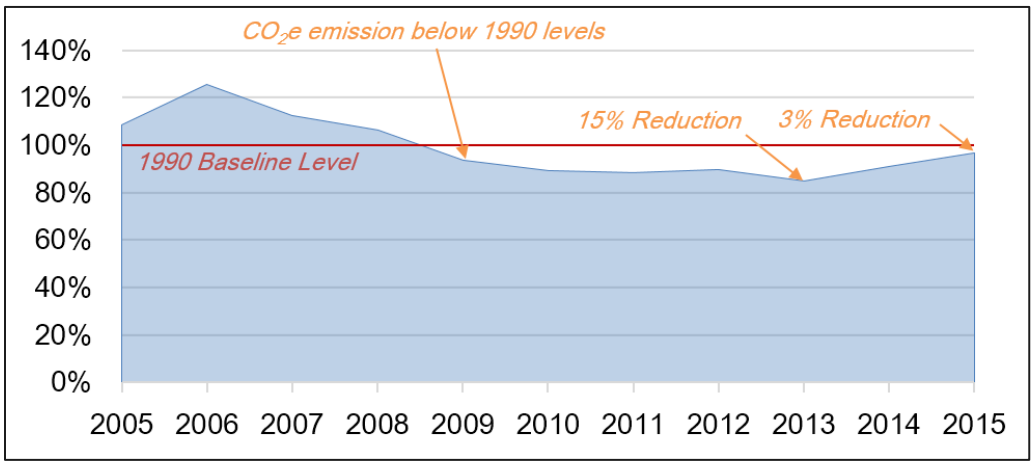
Several state, regional, and local plans have been developed that set goals for the reduction of GHG emissions over the next few years and decades. Some of these plans and policies (notably, EO S-3-05 and AB 32) were considered by the SCAQMD in developing the 10,000-metric-ton-per-year CO_2e threshold. However, no regulations or requirements have been adopted by relevant public agencies to implement those plans for specific projects, within the meaning of CEQA Guidelines Section 15064.4(b)(3) (see *Center for Biological Diversity v. Cal. Dept. of Fish and Wildlife* (*Newhall Ranch*) (2015) 62 Cal.4th 204, 223). Consequently, no CEQA significance assessment based on compliance with such regulations or requirements can be made for the proposed Project. Nevertheless, for the purpose of disclosure, LAHD has considered, for informational purposes only, whether the proposed Project's activities and features, would be consistent with federal, state, or local plans, policies, or regulations for the reduction of GHG emissions, as set forth below.

The State of California is leading the way in the United States with respect to GHG reductions. Several legislative and municipal targets for reducing GHG emissions below 1990 levels have been established. Key examples include the following:

- AB 32
  - 1990 levels by 2020
- Senate Bill (SB) 32
  - 40 percent below 1990 levels by 2030
- EO S-3-05
  - 80 percent below 1990 levels by 2050
- City of Los Angeles Sustainable City Plan
  - 45 percent below 1990 levels by 2025
  - 60 percent below 1990 levels by 2035
  - 80 percent below 1990 levels by 2050

LAHD has been tracking GHG emissions, in terms of CO2e, since 2005 through its Municipal GHG Inventory and Annual Inventory of Air Emissions (see Figure 4.8-1). As illustrated in Figure 4.8-1, significant reductions in Port-related GHG emissions began in 2006, with CO_2e levels 15 percent below 1990 levels as of 2013. Subsequently, 2014 and 2015 saw GHG levels rise temporarily during a period of Port congestion that arose from circumstances outside the control of either the LAHD or its tenants. This event illustrates a major challenge related to managing GHG emissions. Events that are outside the control of the LAHD and its individual tenants will continue to have a varying degree of impact on the progress of reduction efforts.

Figure 4.8-1. GHG Emissions 2005–2015



LAHD and its tenants have initiated many wide-ranging strategies to reduce all port-related GHGs, which includes the benefits associated with the CAAP, Zero-Emissions Road Map, Energy Management Action Plan (EMAP), operational efficiency improvements, and land use and planning initiatives. Looking toward 2050, there are several unknowns that will affect future GHG emission levels. These unknowns include grid power portfolios; maritime industry preferences of power sources and fuel types for ships, harbor craft, terminal equipment, locomotives, and trucks; advances in cargo movement efficiencies; the locations of manufacturing centers for products and commodities moved; and increasing consumer demand for goods. The key relationships that have led to operational efficiency improvements to date are the cost of energy, current and upcoming regulatory programs, and the competitive nature of the goods movement industry. These relationships will continue to produce benefits with regards to GHG emissions for the foreseeable future.

Figure 4.8-2. Actual GHG Emissions
2005–2015 and 2015–2050 GHG Compliance Trajectory

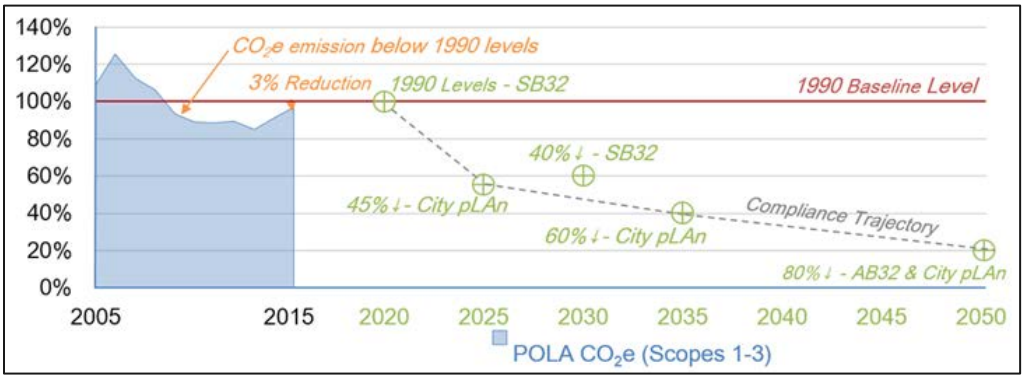


Figure 4.8-2 shows the key GHG targets listed above, with a postulated "compliance trajectory" set to meet the most stringent targets. It is important to note that the targets shown in Figure 4.8-2 are not Project-specific targets, and no specific Project-level regulations or requirements have been developed by agencies for implementation of these plans. Instead, these targets are goals and meant to apply to all applicable GHG sources in aggregate, which means some sources will need to go beyond these targets, while others may not be able to meet the target level.

Ultimately, with the very aggressive reduction targets, shown in Figure 4.8-2, it is not possible at this time to determine whether Port-wide emissions or any particular Project applicant will be able to meet the long-term statewide compliance trajectory. Compliance will depend on future regulations or requirements that may be adopted, future technologies that have not been identified or fully developed at this time, or other Port-wide GHG reduction strategies that may be established.

4.9 Hazards and Hazardous Materials

Would the Project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less-than-Significant Impact. Implementation of the proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Construction of the proposed Project is expected to last approximately 18 months, during which time construction activities would involve the routine transport, use, and disposal of hazardous materials such as (but not limited to) fuel, solvents, paints, oils, and grease. Such transport, use, and disposal must comply with applicable federal and state regulations, such as the Resource Conservation and Recovery Act, Department of Transportation Hazardous Materials Regulations, etc. Although small amounts of solvents, paints, oils, and grease would be transported, used, and disposed of during the construction phase, these materials are typically used in construction projects and would not represent the transport, use, and disposal of acutely hazardous materials. In addition, construction activities would be conducted using BMPs, in accordance with City guidelines, as detailed in the *Development Best Management Practices Handbook* (City of Los Angeles 2011). BMPs used during construction activities could include, but would not be limited to, practices related to controls for vehicle and equipment fueling and maintenance; material delivery, storage, and use; spill prevention and control; and solid and hazardous waste management. Impacts would be less than significant.

Because the proposed Project involves extension of an existing concrete rail bridge, modifications to accommodate five new railroad tracks, a new asphalt access road, a new crossover, and relocation of a compressed air system, no hazardous materials would be used or stored on the site as part of normal Project operations. Impacts would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less-than-Significant Impact. Implementation of the proposed Project is not expected to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As mentioned under Threshold 4.9.a, construction-related hazardous materials would be used during construction of the proposed Project, including fuel, solvents, paints, oils, grease, etc. It is possible that any of these substances could be released during construction activities. However, compliance with federal, state, and local regulations, in combination with construction BMPs, would ensure that all hazardous materials are used, stored, and disposed of properly, which would minimize potential impacts related to a hazardous materials release during the construction phase of the Project. Impacts would be less than significant.

Operation of the proposed Project involves the mode shift of containers entering the San Pedro Bay Complex to exit via on-dock rail rather than being transported via truck to near-dock railyards. The

contents of the containers will not change or be any more hazardous as a result of the Project nor will the mode of transportation create a higher potential for an accidental release than what exists with trucks today.

Project construction and operation will not increase the likelihood of a release of hazardous materials into the environment nor would it exacerbate an event would it to occur. Impacts would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

No Impact. There are no schools within 0.25 mile of the proposed Project. The closest school is Port of Los Angeles High School, approximately 2 miles to the west. No impact would occur, and no mitigation is required.

d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?

Less-than-Significant Impact. A portion of the Project site's northern terminus is within the footprint of the former naval air base site. The base encompassed 369 acres and was built (1937) to act as a fleet air base, servicing and overhauling battleships and carrier-based aircraft. The base was decommissioned in 1947. Upon decommissioning, the site was operated as part of Naval Air Station, Terminal Island. By 1978, the Navy had released most of the site back to the City of Los Angeles (as of 2007, the Navy owned and/or leased only 63 acres). Historic land uses have included munitions production and aviation fuel storage.

A Site Inspection (SI), dated May 2007, was conducted on the site to discern the presence or absence of munitions and explosives of concern (MECs), munitions debris (MD), and munitions constituents (MCs). The SI determined that there was no affected media (either soil or groundwater) on the site and that further human health and ecological risk assessments were not warranted. The site was granted "No Further Action" status by the DTSC in September 2007. Further, this area is not being disturbed as a result of the proposed Project. Potential impacts from hazardous materials exposure related to the former Naval Air Base would be less than significant, and no mitigation is required.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area?

No Impact. The proposed Project is not within an airport land use plan or within 2 miles of a public airport or a public use airport. The closest airport is Long Beach Airport, approximately 7 miles to the northeast. No impact would occur, and no mitigation is required.

f) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?

No Impact. A helicopter landing pad for Island Express Helicopter Service is located at Berth 95 (Catalina Express Sea and Air Terminal), approximately 1.5 mile west of the Project's northern terminus. Small helicopters operate from this location via the Main Channel. Thus, the proximity of the heliport would not result in a safety hazard for people working in the Project area. No impact would occur, and no mitigation is required.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less-than-Significant Impact. Construction activities occurring within the Port require that the contractor coordinate with the Los Angeles Harbor Department Port Police (Port Police), the Los Angeles Police Department (LAPD), the United States Coast Guard and fire protection/service providers, as appropriate, regarding traffic management issues. Traffic control equipment would be in place to direct local traffic around the work area, if necessary. An emergency response action plan has been prepared for the railyard, which provides detailed procedures to be followed in the event of an emergency at the terminal. During Project implementation, the USCG, Port Police, and fire emergency response plans would be employed as necessary, in accordance with the requirements of the Port's Risk Management Plan. Moreover, the Project has as an objective to reduce the number of truck trips on adjacent roadways, resulting in improved safety and less congestion and potentially benefitting overall emergency response operations in the area. The proposed Project would comply with all aforementioned requirements and, therefore, would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant, and no mitigation is required.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. The Project site is in a fully developed portion of Terminal Island; therefore, **t**here are no wildlands within or adjacent to the Project site. Furthermore, the Project area is not in a Very High Fire Hazard Severity Zone (California Department of Forestry and Fire Protection 2011). No impacts related to wildland fires would occur, and no mitigation is required.

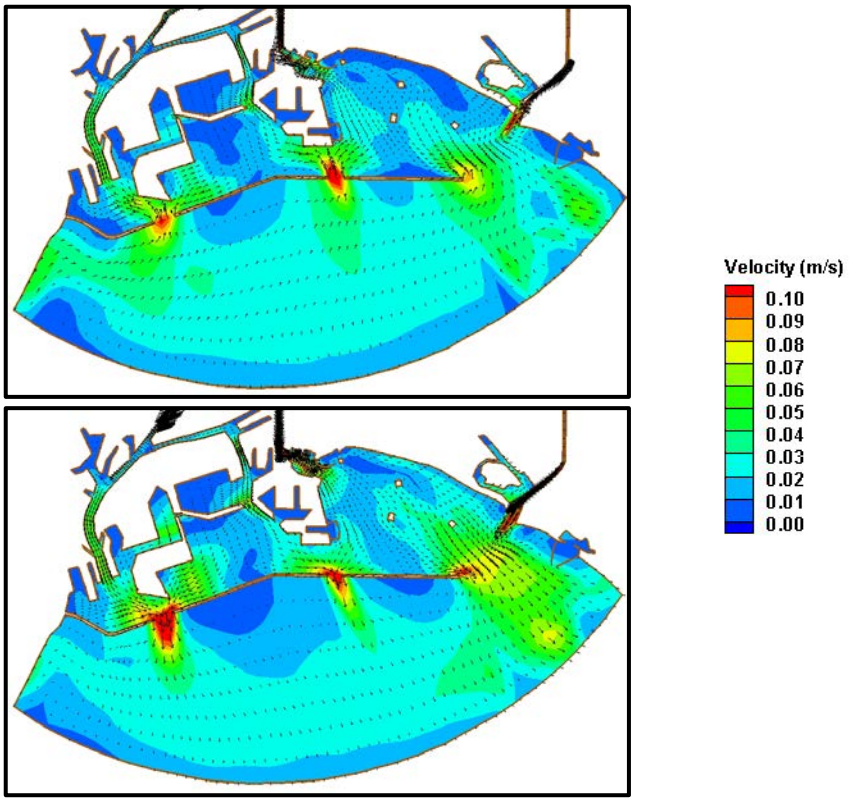
4.10 Hydrology and Water Quality

Tides and Currents

Tides in Southern California are classified as mixed, semi-diurnal tides, with two unequal high tides (high water and higher high water) and two unequal low tides (low water and lower low water) each day. Since 2003, water levels in the Outer Harbor have ranged from -2.34 feet to + 7.92 feet above MLLW.

The Port Complex is protected from incoming waves by the three breakwaters. In addition to wave protection, the breakwaters reduce the exchange of water between the Port Complex and the rest of San Pedro Bay, thereby creating unique tidal circulation patterns. Maximum flood and ebb current patterns in the Port Complex under typical tidal conditions are predicted by the Water Resources Action Plan's (WRAP's) hydrodynamic and sediment transport model (Figure 4.10-1).

Figure 4.10-1. Current Patterns in the Ports of Long Beach and Los Angeles Predicted by the WRAP Model (POLA and POLB 2009)



Top: Typical flood tide currents. Bottom: Typical ebb tide currents.

On the Long Beach side, flood currents enter the harbor through Queen's Gate as well as the opening at the eastern tip of the Long Beach Breakwater. Flood currents coming through Angel's Gate flow principally up the Los Angeles Main Channel but also into the Outer Harbor east of Pier 400. During ebb tide, water is drawn from all parts of the Port Complex toward the openings in the breakwaters. Ebb currents leaving

the Los Angeles side flow through Angel's Gate, while ebb currents leaving the Long Beach side exit either through Queen's Gate or the eastern opening.

In the Project area, the flood tide flows north through the channel from the Long Beach Outer Harbor to the Pier 300 Basin. On ebb tide, the flow reverses. Currents are locally accelerated as they pass through the relatively narrow channel, with a typical velocity of about 0.23 feet per second.

Water Quality

Water quality measurements (temperature, dissolved oxygen concentrations, salinity, chlorophyll, pH, and water clarity) were conducted in summer 2013 and in winter and spring 2014 at 32 stations in the Port Complex. The results were consistent with results measured previously in the Port complex and other embayments in Southern California (MBC 2016). Overall, surface water temperatures ranged from approximately 15.5°C (all three seasons) to 21.1°C (summer high temperature). Water temperatures at most stations decreased with depth, particularly at the deeper stations and in summer; this pattern is typical of coastal marine waters. At Station LA7, water temperatures ranged from 15.4°C near the bottom during the summer and winter surveys to 19.2°C at the surface in summer 2013 see (Table 4.10-1) (MBC 2016).

Table 4.10-1
Summary Water Quality Statistics for Station LA7 during Three Surveys in 2013 and 2014 (MBC 2016)

	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Hydrogen Ion (pH)	Transmissivity (% light)	Salinity (psu)	Conductivity (ms/cm)	Density (kg/m3)	Fluorescence (mg/m3)
27 August 2013									
MINIMUM	0.0	15.4	8.7	8.1	48.6	33.4	41.7	23.8	3.1
MAXIMUM	6.0	19.2	9.8	8.2	61.5	33.6	45.2	24.7	17.9
AVERAGE	3.0	16.8	9.2	8.1	55.8	33.5	43.0	24.4	9.3
SECCHI DEPTH	3.5	-	-	-	-	-	-	-	-
13 February 2014									
MINIMUM	0.0	15.4	8.3	8.1	53.1	33.4	41.6	24.3	3.8
MAXIMUM	4.0	16.9	8.4	8.1	65.5	33.4	43.0	24.7	6.3
AVERAGE	2.0	16.3	8.3	8.1	56.7	33.4	42.4	24.5	4.6
SECCHI DEPTH	2.0	-	-	-	-	-	-	-	-
1 May 2014									
MINIMUM	0.0	15.8	8.1	7.9	40.1	33.6	42.1	24.0	5.6
MAXIMUM	4.0	18.7	8.4	8.0	46.9	33.6	44.9	24.7	10.5
AVERAGE	2.0	18.0	8.3	8.0	40.1	33.6	44.2	24.2	8.0
SECCHI DEPTH	1.5	-	-	-	-	-	-	-	-

Dissolved oxygen (DO) at the surface throughout he Port Complex exceeded 6 milligrams per liter (mg/l) during all three seasons (the regulatory threshold for DO is 5 mg/L), reaching a high of 10.1 mg/L in the Outer Harbor during the summer survey (MBC 2016). In spring, DO concentrations below 5 mg/l were measured near the bottom at 11 stations on the Long Beach side of the Port Complex and at four stations on the Los Angeles side. The lowest value, 4.0 mg/L, occurred in the Consolidated Slip of Los Angeles Harbor, but most of the other values below 5 mg/L occurred at the bottom of the deep stations (> 10 meters) throughout the Port Complex. Patterns of DO concentration with depth in the study were similar to those reported during the two previous biological surveys, except that the DO values of less than 5 mg/l in summer and at mid-depth in spring reported during the 2000 study were not found during the current study. At Station LA7, DO ranged between 8.1 and 9.8 mg/L among the three surveys (Table 4.10-1) (MBC 2016).

Salinity throughout the Port Complex during the 2013–2014 surveys averaged 33.5 practical salinity units (psu), which is similar to the average salinity of open coastal water in Southern California. Salinity tended to be similar at all depths, although near the surface salinity was slightly lower than average at a few locations (indicative of freshwater input) (MBC 2016). In winter, salinity throughout the water column was generally slightly lower than in spring and summer. Salinity at Station LA7 ranged narrowly between 33.4 and 33.6 psu during the three water quality surveys (Table 4.10-1) (MBC 2016). Water clarity was variable with season and depth but, in general, was higher in winter than in spring or summer and lower near the bottom than at mid-depth. At Station LA7, however, highest transmissivity was found at the surface in summer 2013, and values decreased with depth (Table 4.10-1) (MBC 2016). During both the winter and spring, lowest transmissivity was reported at the surface and clarity increased with depth, with the lowest values throughout the water column reported in spring 2014.

Hydrogen ion concentration (pH) is a measure of the acidity of water and important in marine ecology because many organisms have adapted to the narrow range within which ocean pH varies. Surface pH values throughout the Port Complex during the 2013–2014 study were highest during the summer survey and lowest during the spring survey, but overall pH varied little, around an average of approximately 7.95, which is typical of coastal Southern California ocean waters (MBC 2016). At Station LA7, pH ranged narrowly from 7.9 to 8.2 units among the three surveys (Table 4.10-1) (MBC 2016).

Because of growing concerns over harmful algal blooms in coastal waters, data on chlorophyll-a concentrations (a primary indicator of plant biomass) was collected during the water quality sampling surveys. Chlorophyll-a was generally low (less than 20 milligrams per cubic meter), with highest values usually reported at mid-depth or, less frequently, near the bottom (MBC 2016). Overall, chlorophyll-a levels were highest during the summer survey. No red tides (toxic phytoplankton blooms) were noted during any of the water quality surveys. At Station LA7, chlorophyll-a values were similar to those reported throughout the Port Complex and overall ranged from 3.1 to 17.9 milligrams per cubic meter, with both of these values reported in summer 2013 (Table 4.10-1) (MBC 2016).

The spatial and temporal patterns of temperature, salinity, and DO recorded at Station LA7, and throughout the Port Complex during the 2013–2014 study, were consistent with those measured in previous harbor-wide surveys and indicative of conditions that would support healthy biological communities (MBC 2016).

Applicable Regulations

Clean Water Act of 1972

The Clean Water Act (CWA) provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation's waters. Discharges of wastes to waters of the United States (e.g., surface waters) must be authorized through NPDES permits (under Section 402 of the CWA). In California, the SWRCB and the nine RWQCBs have authority, delegated by EPA, to issue NPDES permits. California permits are also issued as WDRs, as required under California law by the Porter-Cologne Water Quality Control Act (see below). Section 301(a) of the CWA prohibits discharges without a permit and is the basis of the NPDES permit program.

Section 303 of the CWA requires states to develop water quality standards for all waters and submit to EPA for approval all new or revised standards established for inland surface waters, estuaries, and ocean waters. Under Section 303(d), the state is required to list water segments that do not meet water quality standards and develop action plans to improve water quality. The SWRCB and the RWQCBs implement sections of the CWA through the Water Quality Control Plan for Ocean Waters of California (Ocean Plan), the Enclosed Bays and Estuaries Plan, the nine Water Quality Control Plans (one for each region), and permits for waste discharges.

The RWQCB can issue CWA Section 401 Water Quality Certification, certifying that actions occurring in waters of the United States would not have adverse water quality impacts. Permits typically include the following conditions to minimize water quality effects:

- U.S. Amy Corps of Engineers review and approval of sediment quality analysis prior to dredging and dredged material disposal;
- Detailed pre- and post-construction monitoring plan that includes disposal site monitoring;
- Return flow that is free of solid dredged material; and
- Compensation for loss of waters of the United States.

California Ocean Plan

The Ocean Plan was designed to protect the quality of ocean waters through the control of waste discharges. The Ocean Plan was last updated in 2012; it is reviewed every 3 years. The Ocean Plan establishes beneficial uses for nearshore and offshore waters as well as water quality objectives and effluent limitations to ensure reasonable protection of beneficial uses and the prevention of nuisance.

Porter-Cologne Water Quality Control Act of 1972

The Porter-Cologne Water Quality Control Act (or Porter-Cologne Act) (California Water Code Section 13000 et seq.), the principal law governing receiving water quality in California, establishes a comprehensive program to protect water quality and the beneficial uses of state waters. Unlike the federal CWA, the Porter-Cologne Act covers both surface water and groundwater. Since 1973, the SWRCB and the nine RWQCBs, which were established by this act, have been delegated responsibility for implementing the act's provisions and administering permitted waste discharges into the coastal marine waters of California.

The Porter-Cologne Act also implements many provisions of the CWA, such as the NPDES permitting program. Under the Porter Cologne Act, any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state must file a report of the discharge with the appropriate RWQCB. The RWQCB may then prescribe WDRs that add conditions related to control of the discharge. The Porter-Cologne Act defines "waste" broadly; the term has been applied to a diverse array of materials, including nonpoint-source pollution. When regulating discharges that are covered under the CWA, the SWRCB and RWQCBs issue WDRs and NPDES permits as a single permitting vehicle. In April 1991, the SWRCB and other state environmental agencies were incorporated into the California Environmental Protection Agency (Cal/EPA). Section 401 of the CWA gives the SWRCB the authority to review any proposed federally permitted or federally licensed activity that may affect water quality and certify, condition, or deny the activity if it does not comply with state water quality standards. If the SWRCB imposes a condition on its certification, those conditions (including WDRs) must be included in the federal permit or license. Standard WDRs include conditions and requirements to minimize potential impacts on surface water, groundwater, and sediment from dredging and filling activities.

Water Quality Control Plan

The RWQCB adopted the Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan) on September 11, 2014. The Basin Plan was subsequently approved by the SWRCB on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the RWQCB and approved by the SWRCB. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Basin Plan relies primarily on the requirements of the Ocean Plan for protection of the beneficial uses of the state ocean waters. The Basin Plan, however, may contain additional water quality objectives applicable to the discharger.

Coastal Nonpoint-Source Pollution Control Program

This is a joint program between EPA and NOAA. Established during reauthorization of the Coastal Zone Management Act of 1972, the program provides a more comprehensive solution to the problem of polluted runoff in coastal areas. The program sets economically achievable measures to prevent and mitigate runoff pollution problems stemming from agriculture, forestry, urban developments, marinas, hydromodification (e.g., stream channelization), and the loss of wetland and riparian areas. The Coastalonpoint-Source

Pollution Control Program is implemented by the SWRCB, the RWQCBs, and the California Coastal Commission.

State Water Resources Control Board General Stormwater Permits

The SWRCB issues and periodically renews a statewide General Construction Activity Stormwater Permit (GCASP) and a statewide General Industrial Activities Stormwater Permit (GIASP) for projects that do not require an individual permit for these activities. The GCASP was adopted in 2009 and further revised in 2012 (Order No. 2012-0006-DWQ). All construction activities that disturb 1 acre or more must prepare and implement a construction SWPPP that specifies BMPs to prevent pollutants from contacting stormwater. BMPs are effective, practical, structural, or nonstructural methods to prevent or reduce the movement of sediments, nutrients, and pollutants from land to surface waters. The intent of the SWPPP and BMPs is to keep all products of erosion from moving off the site and into receiving waters, eliminate or reduce non-stormwater discharges to storm sewer systems and waters of the United States, and perform sampling and analysis to determine the effectiveness of BMPs in reducing or preventing pollutants (even if not visually detectable) in stormwater discharges that cause or contribute to violations of water quality objectives.

The most recent GIASP (Order No. 2014-0057-DWQ) was adopted in April 2014 and requires dischargers to develop and implement a SWPPP to reduce or prevent industrial pollutants in stormwater discharges, eliminate unauthorized non-storm discharges, conduct visual and analytical stormwater discharge monitoring to verify the effectiveness of the SWPPP, and submit an annual report.

California Toxics Rule

This rule establishes numeric criteria for priority toxic pollutants in inland waters, as well as enclosed bays and estuaries, to protect ambient aquatic life (23 priority toxics) and human health (57 priority toxics). The numeric criteria are the same as those recommended by EPA in its CWA Section 304(a) guidance. The California Toxics Rule also includes provisions for compliance schedules to be issued for new or revised NPDES permit limits when certain conditions are met.

Would the Project:

a) Violate any water quality standards or waste discharge requirements?

Less-than-Significant Impact. Construction of the proposed Project could result in sediment resuspension during pile installation and platform/decking construction. The construction contractor would adhere to water quality requirements issued from the LARWQCB (WDRs/Section 401 Water Quality Certification). This would limit the potential for violations of water quality standards to below a level of significance. Driving of the piles would suspend some bottom sediments and create localized and temporary turbidity plumes and associated water quality issues. However, such impacts would occur over a relatively small, localized area.

In addition to water quality effects related to re-suspended sediments, accidents resulting in spills of fuel, lubricants, or hydraulic fluid from equipment used during pile installation and bridge deck construction could occur. However, large volumes of these materials typically are not used or stored

at construction sites. In addition, the facility is subject to hazardous materials management requirements under the Certified Unified Program Agencies (CUPA).

Potential construction impacts would also be regulated under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, which requires a site-specific SWPPP that defines actions to minimize spills, manage runoff, and prevent impacts on water quality. BMPs would be implemented during construction in accordance with the SWPPP as well as the CWA Section 401 Water Quality Certification issued by the LARWQCB. As a consequence, accidents that result in spills of contaminants during Project construction are not expected to adversely affect beneficial uses of harbor waters or result in violations of water quality standards.

Stormwater from the existing overwater rail line and access road flows directly to Los Angeles and Long Beach Harbors. Once the Project is completed, stormwater on the new rail lines, access road, and trestle bridge would also flow directly into the local harbors. Operation of the facility would remain the same, and the facility would continue to comply with all BMPs and rules and regulations pertaining to water quality and waste discharges. Therefore, potential construction and operational impacts related to water quality standards and waste discharge requirements would be less than significant, and no mitigation is required.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

No Impact. Groundwater at the Project site is affected by saltwater intrusion (high salinity); therefore, it is unsuitable for use as drinking water. The limited landside activities of the proposed Project would not adversely affect groundwater recharge because the Project area is not a recharge site and Project activities would not adversely affect drinking water supplies because there are none on or near the site. The proposed Project would not change the amount of impervious surface at the site, nor would it substantively alter the land surface; therefore, groundwater recharge would not change. The proposed Project would not install any new groundwater wells, and groundwater extraction would not occur as part of the proposed Project. Thus, the proposed Project would not affect existing groundwater supplies, drinking water supplies, groundwater recharge facilities, or aquifers. The proposed Project would have no impact with respect to groundwater, and no mitigation is required.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?

No Impact. The Project site is currently developed and composed of a paved or hard-packed dirt road, some soft-packed non-landscaped dirt strips adjacent to the existing tracks, and a ballast trackbed, which supports the railroad ties. These various surfaces can be characterized as semi-permeable. The proposed Project would alter the surfaces by replacing the hard-packed road with a ballast trackbed and creating a new asphalt access road adjacent to Navy Way; however, a change

in the semi-permeable characteristics of the surfaces is not expected. As discussed above, site drainage systems/patterns would not be altered as a result of the proposed Project. Therefore, no impacts related to alteration of drainage patterns resulting in erosion or siltation would occur, and no mitigation is required.

d) Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

No Impact. There would be no change in site drainage patterns as a result of the proposed Project. Therefore, no impacts related to alteration of drainage patterns, resulting in flooding, would occur. No mitigation is required.

e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Impact. The Project site is semi-permeable and currently drains to harbor waters. No changes in surface area, site topography, or drainage systems would occur. The proposed Project would have no impact with respect to exceeding the capacity of the stormwater drainage system or providing substantial sources of polluted runoff. No mitigation is required.

f) Otherwise substantially degrade water quality?

Less-than-Significant Impact. There are no additional water quality issues associated with construction and operation of the proposed Project that would otherwise substantially degrade water quality. Spill prevention and response measures would be in place during both construction and facility operations to minimize any release of contaminants from the facility. The proposed Project would have a less-than-significant impact with respect to degradation of water quality, and no mitigation is required.

g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. No housing is proposed under the proposed Project. Therefore, there would be no impact, and no mitigation is required.

h) Place within a 100-year flood hazard area structures, which would impede or redirect floodflows?

No Impact. According to Flood Hazard Map FM06037C2032F, the Project site is in Zone AE, identified as a Special Flood Hazard Area that is subject to inundation by the 1 percent annual-chance flood, also known as the base flood, which has a 1 percent chance of being equaled or exceeded in any given year (Federal Emergency Management Agency 2008). Therefore, there would be no impact related to placing structures within a 100-year flood hazard area, and no mitigation is required.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. There are no levees or dams in the vicinity of the Project site that would expose people or structures to a significant risk of loss, injury, or death involving flooding associated with levee or dam failure (City of Los Angeles 1996). For additional information, refer to Threshold 4.9.h. Therefore, no impact associated with risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam would occur, and no mitigation is required.

j) Inundation by seiche, tsunami, or mudflow?

Less-than-Significant Impact. The proposed Project would not increase impacts associated with seiche, tsunami, or mudflow. The Project site and surrounding area are primarily flat, with relatively small elevation differences; therefore, mudflows would not occur. Seiches are seismically induced water waves that surge back and forth in an enclosed basin. Seiches could occur in the harbor as a result of earthquakes. A Port Complex model that assessed tsunami and seiche scenarios determined that impacts from a tsunami were equal to or more severe than those from a seiche in each case modeled (Moffatt and Nichol 2007). Therefore, the discussion below refers to tsunami as the worst-case scenario for potential impacts. Potential impacts related to seiche would be the same as or less than those identified below.

Construction and operation of the proposed Project would not increase the potential for tsunami damage to occur. As part of the proposed Project, approximately 200 piles would be installed to accommodate the expanded bridge structure. No other new structures would be constructed that would be subject to damage, including inundation, by tsunami.

The Port Complex model indicates that a reasonable maximum source for future tsunami events within the harbor area would either be a magnitude (M) 7 earthquake on the Santa Catalina fault or a submarine landslide along the nearby Palos Verdes Peninsula. The tsunami study notes that large offshore earthquakes (M~7.5) in the Port region are very infrequent. Furthermore, not every large earthquake is expected to generate a tsunami, based on historical occurrences. Based on seismicity, geodetics, and geology, a large locally generated tsunami from either local seismic activity or a local submarine landslide would most likely not occur more than once every 10,000 years. A Sea-Level Rise Vulnerability Report for the City of Los Angeles presented initial research on the potential impacts of sea-level rise and associated flooding from storms in Los Angeles coastal communities. For the period of 2000–2050, the report suggests that the sea level can rise by up to 2 feet by 2050 (USC 2013). A maximum tsunami wave height of 7.2 feet along the Main Channel (Moffatt and Nicholl 2007), on top of a 2-foot sea-level rise, would result in a combined potential wave height of 9.2 feet above mean sea level in the vicinity of the Project site. No overtopping at the Project site is anticipated as a result of a tsunami. The proposed Project would meet all engineering requirements and standards. It is not expected to contribute to increased potential for inundation by seiche, tsunami, or mudflow. Therefore, there would be a less-than-significant impact associated with inundation by seiche, tsunami, or mudflow, and no mitigation is required.

4.11 Land Use and Planning

This section contains a description and analysis of the land use and planning considerations that would result from implementation of the proposed Project.

Would the Project:

a) Physically divide an established community?

No Impact. The proposed Project would be located on Terminal Island, a heavy industrial area of the Port that does not include established communities. The nearest residential areas to the Project site are the single-family and multi-family residences along South Beacon Street, across the Main Channel in San Pedro (approximately 2 miles to the west). Therefore, no impacts associated with physical division of an established community would occur, and no mitigation is required.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less-than-Significant Impact. The proposed Project would be located at the Port of Los Angeles, within the City of Los Angeles General Plan, Port of Los Angeles Plan (1982) Area and the Transportation Element (1999), with a designation of General/Bulk Cargo and Commercial/Industrial Uses Hazardous (City of Los Angeles 1992). The Project site is zoned for heavy industrial uses ([Q] M3-1) under the City of Los Angeles Zoning Ordinance (City of Los Angeles 2018). The Port of Los Angeles Plan is one of 35 community plans that make up the General Plan of the City of Los Angeles (City of Los Angeles, 1982). This plan provides a 20-year official guide to the continued development and operation of the Port.

The Port Master Plan (PMP) (POLA 2014) establishes policies and guidelines to direct future development of the Port. The proposed Project is located in Planning Area 3, Terminal Island, which focuses on container operations. Of the Port's nine container terminals, six are located in Planning Area 3. The Terminal Island On-Dock Rail Facility was identified as one of the "other projects" in the PMP, consisting of development of a new on-dock rail facility. The Project area is designated primarily for container use, with the northernmost portion of the area extending into land designated for maritime support use. The Port of Los Angeles Plan is designed to be consistent with the PMP discussed above. The proposed Project would be consistent with allowable land uses and the goals and policies of the General Plan—Port of Los Angeles Plan.

The San Pedro Community Plan (City of Los Angeles, 1999) serves as a basis for future development of the community. It is also the land use plan portion of the City's Local Coastal Program for San Pedro. The Port is not part of the San Pedro Community Plan area. However, the San Pedro Community Plan does make recommendations regarding the Port, particularly for areas adjacent to commercial and residential areas of San Pedro. The proposed Project would be consistent with these recommendations, as LAHD has taken into consideration the residential and

commercial communities of San Pedro during proposed Project development through the scoping process.

The proposed Project would provide for continuation of the existing use, which is consistent with the [Q] M3-1 zoning for the site. Continuing use under the proposed Project (i.e., increasing storage capacity and improving yard operations at the Pier 400 rail storage yard) would be consistent with surrounding uses. As such, the proposed Project would not conflict with any applicable land use plan, policy, or regulation. Impacts would be less than significant, and no mitigation is required.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. As discussed in the Section 4.4, *Biological Resources*, the Project site does not fall within or near an area covered by a habitat conservation plan or natural community conservation plan; therefore, the proposed Project would not conflict with any habitat conservation plan or natural community conservation plan. No impacts associated with conservation plans would occur, and no mitigation is required.

4.12 Mineral Resources

Would the Project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. The proposed Project would be located on Pier 400, which is composed mostly of artificial fill material. The Wilmington Oil Field, the third-largest oil field in the United States, based on cumulative production, extends from Torrance to the Harbor District of Long Beach, a distance of approximately 13 miles (Otott and Clarke 1996). This is the closest oil field to the proposed Project. According to the City of Los Angeles General Plan's Safety Element and the California Department of Conservation, Division of Oil, Gas, and Geothermic Resources, the Project site would be outside the boundary of the Wilmington Oil Field. There are no active oil well on the Project site (California Department of Conservation 2014; City of Los Angeles 2014). Therefore, no impacts related to the loss of availability of a known valued mineral resources would occur with the implementation of the proposed Project. No impact would occur, and no mitigation is required.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact. As described under Threshold 4.12.a, there are no active oil wells on the Project site. The proposed Project would not result in the loss of availability of a mineral resource recovery site, as described under Threshold 4.12.a. Therefore, no impact with respect to the availability of a mineral resource would result from construction and operation of the proposed Project. No impact would occur, and no mitigation is required.

4.13 Noise

The purpose of this section is to identify sensitive noise receptors in the Project area and determine the degree of noise impact that would be attributable to the proposed Project. Noise levels are regulated by the LAMC, Chapter XI, Noise Regulation (City of Los Angeles 2016). The sound limits apply to noise generation from one property to an adjacent property.

Would the Project:

a) Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?

Less-than-Significant Impact. A significant impact may occur if the proposed Project were to generate excess noise that would cause the ambient noise environment at the Project site to exceed applicable noise standards set forth in the City of Los Angeles General Plan (Noise Element) and the LAMC.

Construction

Noise regulations pertaining to construction activities in the city of Los Angeles have been established in the LAMC. In particular, Section 41.40(a) of the LAMC prohibits the use, operation, repair, or servicing of construction equipment as well as job-site delivery of construction materials between the hours of 9:00 p.m. and 7:00 a.m. where such activities would disturb "persons occupying sleeping quarters in any dwelling, hotel or apartment, or other place of residence." Construction noise emanating from property zoned for manufacturing or industrial uses is exempted from the Section 41.40(a) standards. In addition, Section 41.40(c) prohibits construction, grading, and related job-site deliveries on or within 500 feet of land developed with residential structures before 8:00 a.m. or after 6:00 p.m. on Saturday or a national holiday or at any time on Sunday.

Section 112.05 of the LAMC places limits on the maximum noise levels (75 A-weighted decibels [dBA] at a distance of 50 feet for typical construction equipment) that may be produced by powered equipment or tools in or within 500 feet of any residential zone between the hours of 7:00 a.m. and 10:00 p.m. The limits shall not apply where compliance is technically infeasible. Technical infeasibility means that the noise limit cannot be achieved, despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques during operation of the equipment.

Construction work associated with the proposed Project would be confined to the Pier 400 Transportation Corridor. This construction area is not in proximity to any noise-sensitive land uses such that construction noise regulations under Sections 41.40(a) and 112.05 of the LAMC would be violated during Project construction activities. The nearest sensitive receptors to the Project construction site are the liveaboard boats in the marinas to the north, with the closest at the Newmarks Yacht Centre on Peninsula Road, approximately 4,400 feet away. Aside from the liveaboard boats, the nearest sensitive receptors would be the residential area west of the Main

Channel, which is more than 10,000 feet from the construction site. Given the location of these nearest sensitive receptors, Project construction activities would not occur within 500 feet of a residential zone and, therefore, would not disturb persons occupying sleeping quarters in any dwelling, hotel or apartment, or other place of residence. In addition, Project construction activities, which are scheduled for five, 8-hour work days per week, would occur only during the allowable construction hours established under Section 41.40(a) of the LAMC. Therefore, construction activities at the Project site would not exceed any City noise standards. Furthermore, based on the *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006), construction activities for a project that would be more than 500 feet from a noise-sensitive land use and occurring within the designated construction hours established by the City would generally not require further evaluation in an environmental document because no significant noise impact from the project would be anticipated. Therefore, construction-related noise impacts resulting from implementation of the Project would be less than significant, and no mitigation is required.

Operations

Chapter XI, Noise Regulation, of the LAMC regulates noise from non-transportation noise sources, such as commercial or industrial operations, mechanical equipment, or residential activities. The exact noise standards vary, depending on the type of noise source; however, the allowable noise levels are generally determined relative to the existing ambient noise levels at the affected location. Section 112.02 of Chapter XI, which addresses noise from air-conditioning, refrigeration, heating, pumping, and filtration equipment, states that such equipment may not generate noise that would exceed the ambient noise level at any adjacent property by more than 5 dBA. Section 114.02 of Chapter XI, which addresses noise from motor-driven vehicles, states that such vehicles may not generate noise that would exceed the ambient noise level at any occupied residential property by more than 5 dBA. (It is noted that the code applies to vehicles on private property only and does not apply to vehicles operated within public rights-of-way.)

The City's Noise Element also provides land use/noise compatibility guidelines, as shown in Table 4.13-1. Based on the *L.A. CEQA Thresholds Guide*, the City's land use/noise compatibility guidelines are used to determine whether operational noise impacts would occur from a project. Specifically, the *L.A. CEQA Thresholds Guide* contains the following significance threshold for operational noise impacts due to stationary sources, vehicular traffic, or increased railroad operations:

- The ambient noise level measured at the property line of affected uses would increase by 3 dBA, community noise equivalent level (CNEL), to or within the "normally unacceptable" or "clearly unacceptable" category, or 5 dBA or greater.

Table 4.13-1
Land Use Noise Compatibility Guidelines

Land Use	Community Noise Exposure CNEL (decibels)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single-Family, Duplex, Mobile Homes	50–60	55–70	70–75	above 70
Multi-family Homes	60–65	60–70	70–75	above 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50–70	60–70	70–80	above 80
Playgrounds, Neighborhoods Parks	50–70	—	67–75	above 72
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50–75	—	70–80	above 80

Source: City of Los Angeles 2006.

Normally Acceptable: Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction and without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air-conditioning, will normally suffice.

Normally Unacceptable: New construction or development generally should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development generally should not be undertaken.

On-site Noise Increase

On-site operational noise at the Pier 400 storage/staging railyard currently includes the intermittent sounds of operations, such as rail movements. By adding five storage/staging tracks (about 31,000 lineal feet) to the existing Pier 400 railyard and a short rail bridge over water, the Project would increase the storage capacity of the railyard and shift cargo movement modes to maximize on-dock rail use at the site. Ultimately, the capacity/use increase at the Pier 400 on-dock railyard would result in potentially 525,275 TEUs/year shifting from off-dock yards, which are 11 to 27 miles away from the Project site. It should be noted that the Project would not increase cargo deliveries or handling at cargo terminals; the primary change resulting from the Project would be a shift in cargo movement modes to maximize on-dock rail use and reduce the number of truck trips required to transport cargo to off-dock yards. As such, on-site noise levels associated with daily operations at the site from Project implementation are anticipated to be similar to noise levels under baseline conditions. The proposed Project would not result in a noticeable increase in noise levels at noise-sensitive receptors (a doubling of the noise from the noise source/activity would be required for a minimally audible 3-decibel increase in noise to occur). Therefore, impacts from the Project's on-site operational noise sources would be less than significant, and no mitigation is required.

Off-site Noise Increase

In addition to the on-site noise levels generated by daily operations within the Pier 400 storage/staging railyard, Project-related vehicular traffic and rail operations would generate noise at off-site locations. The vehicular traffic would include daily truck trips to and from the Project site to transport cargo. However, under the Project, there would be a shift in cargo movement modes, whereby the use of on-dock rail would increase, while the number of truck trips to transport cargo would decrease. This shift would decrease daily truck trips by approximately 560 and 1,520 in 2021 and 2040, respectively, and reduce traffic congestion in the San Pedro Bay Port Complex. Consequently, traffic noise levels would be reduced from baseline conditions under the proposed Project, and no increase in the ambient noise levels at off-site noise-sensitive uses would occur from the Project's truck traffic.

The Project would result in an increase in on-dock rail use. All on-dock rail trips would leave the Project site (on Terminal Island) and travel toward the Alameda Corridor via Henry Ford Bridge (also known as Badger Avenue Bridge). Although the effects of Project-generated on-dock rail traffic would lessen as the rail network spreads out from the Port, the potential exists for the liveaboard boats at the marinas in the Cerritos Channel to be affected by increases in Project-generated rail noise. In particular, the nearest liveaboard boats, approximately 70 feet west of Henry Ford Bridge, would experience the greatest change with respect to their noise environment from increased train operations under the proposed Project. Rail noise levels at the nearest sensitive receptors from train travel on Henry Ford Bridge, both with and without the Project, were forecast using the rail noise calculation methods recommended by the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment* guidance manual and train volume data provided by LAHD. The increase in noise levels at the nearest liveaboard boats resulting from the Project's train operations is identified in Table 4.13-2.

Table 4.13-2
Rail Noise Levels with Project

Sensitive Receptor	Noise Levels (dBA CNEL)		
	Existing Without-Project Train Volumes	Existing With-Project Train Volumes[a]	Increase
Liveaboard boats at Island Yacht Anchorage	61.7	64.1	2.4
[a] Although the Project would gradually increase daily train trips between 2021 (Project initiation year) and 2040 (Project buildout year), for the purpose of this analysis, the highest increase in daily train trips resulting from the Project has been accounted for and evaluated.			

As shown in Table 4.13-2, the Project-related increase in the number of on-dock rail trips over the CEQA baseline condition would result in less than a 3 dBA increase in CNEL at the nearest liveaboard boats. Therefore, the increase in the number of rail trips resulting from the Project would not result in a noticeable increase in noise levels at noise-sensitive receptors. Additionally, while

the increase in train operations resulting from the Project would likely increase the occurrence of train horns being sounded, the number of these occurrences would not be substantial when compared to existing conditions. It is anticipated that the Project would result in only five additional daily train trips south of the Intermodal Container Transfer Facility (ICTF) Yard and one additional daily train trip north of the ICTF Yard by Project buildout in 2040. Furthermore, it should be noted that train horns would only be sounded at public highway/rail grade crossings for safety and warning purposes[6], and are exempt from the noise regulations of the LAMC (FRA 2013). Overall, potential noise impacts resulting from the Project's off-site noise sources would be less than significant, and no mitigation is required.

b) Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels?

Less-than-Significant Impact. Ground-borne vibration is an oscillatory motion of the soil with respect to the equilibrium position. It can be quantified in terms of velocity or acceleration. Ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility. For example, it can cause buildings to shake and rumbling sounds to be heard. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Most perceptible indoor vibration is caused by sources within buildings, such as mechanical equipment, people, or doors. Typical outdoor sources of perceptible ground-borne vibration are heavy construction activities (such as blasting and pile driving), steel-wheeled trains, and heavy trucks on rough roads. If a roadway is smooth, the ground-borne vibration from traffic is rarely perceptible.

Ground-borne vibration can be described in terms of peak particle velocity (PPV). PPV is defined as the maximum instantaneous positive or negative peak amplitude of the vibration velocity. The unit of measurement for PPV is inches per second (in/s). The PPV is most frequently used to describe vibration impacts on buildings. The root-mean-square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. Peak particle velocity is typically 1.7 to 6 times greater than RMS vibration velocity (Federal Transit Administration 2006). The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment. Generally, as the duration and frequency of a ground-borne vibration occurrence increases, the potential for adverse human response increases. Typical background vibration levels in residential areas are usually 50 VdB or lower, well below the threshold (65 VdB) of perception for most humans.

[6] FRA's Final Rule on the Use of Locomotive Horns at Highway/Rail Grade Crossings effective June 24, 2005.

Ground-borne noise is a secondary phenomenon of ground-borne vibration. When a building vibrates, noise is radiated into the interior of the building. Typically, this is a low-frequency sound that would be perceived as a low rumble. The magnitude of the sound depends on the frequency characteristic of the vibration and the manner in which the room surfaces in the building radiate sound. Ground-borne noise is quantified by the A-weighted sound level inside the building. The sound level accompanying vibration is generally 25 to 40 dBA lower than the vibration velocity level in VdB. Ground-borne vibration levels of 65 VdB can result in ground-borne noise levels up to 40 dBA, which can disturb sleep. Ground-borne vibration levels of 85 VdB can result in ground-borne noise levels up to 60 dBA, which can be annoying to daytime noise-sensitive land uses such as schools (Federal Transit Administration 2006).

Construction

During Project construction, the operation of heavy construction equipment could generate localized ground-borne vibration at buildings/structures adjacent to the construction site, especially during operation of high-impact equipment, such as pile drivers. Vibration from large construction equipment (e.g., large dozers, trucks) is typically below the threshold of perception when the activity is more than about 150 feet from the sensitive receptors. Vibration from small construction equipment (e.g., small dozers and truck traffic) is typically below the threshold of perception when the activity is more than about 50 feet from the sensitive receptors (Federal Transit Administration 2006). Although the Project would involve pile driving to construct the concrete rail bridge extension and could generate high ground-borne vibration velocity levels in the immediate area surrounding construction, pile driving would not result in ground-borne vibration impacts at sensitive receptors because the nearest sensitive receptors (i.e., the liveaboard boats in the Cerritos Channel) are approximately 7,935 feet from the nearest site where pile driving would occur. At this distance, no perceptible ground-borne vibration levels would be received at the sensitive receptors. Therefore, ground-borne vibration impacts resulting from Project construction would be less than significant, and no mitigation is required.

Operations

During Project operations, ground-borne vibration and noise could be generated by trucks and trains traveling along area roadways and railways, respectively. However, because Project implementation would result in an overall reduction in the number of trucks traveling to and from the Project site (i.e., approximately 1,520 fewer trips by 2040), no increases in ground-borne vibration and noise levels at noise-sensitive receptors along area roadways would occur as a result of the Project compared with baseline conditions. In addition, it is unusual for vibration from sources such as trucks to be perceptible, even when close to major roads. If a roadway is smooth, the ground-borne vibration from traffic is rarely perceptible (Federal Transit Administration 2006).

Although operation of the Project would maximize on-dock rail use and, therefore, increase the number of trains along the rail systems, the overall increase in the number of daily train trips would not be substantial. By Project buildout in 2040, it is anticipated that the Project would result in only five additional daily train trips south of the ICTF Yard and one additional daily train trip north of

the ICTF Yard. In addition, the five new rail storage tracks would be located within the Pier 400 Transportation Corridor. Outside the Pier 400 Transportation Corridor, trains would access the Alameda Corridor by merging onto the existing rail system, which would remain unchanged with Project implementation. Therefore, because no new rail tracks would be constructed under the Project in the vicinity of off-site noise-sensitive receptors, ground-borne vibration and noise levels generated by each train that passes by these off-site receptors would not increase under the proposed Project. Furthermore, because the Project site is on Terminal Island, with water separating the site from noise-sensitive receptors in the vicinity, ground-borne vibration and noise generated by train travel would attenuate quickly as the trains pass the water body (i.e., the channels). Overall, ground-borne vibration and noise impacts from the Project's train operations would be less than significant, and no mitigation is required.

c) Result in a substantial permanent increase in ambient noise levels in the project vicinity, above levels existing without the project?

Less-than-Significant Impact. As discussed under Threshold 4.13.a, above, operational (long-term) noise generated by the Project would result from both on-site and off-site noise sources. On-site operational noise, which includes noise generated from the operation of gantry cranes for off-loading and loading containers, rail and truck movements, and ongoing Port-related maintenance activities, are expected to stay relatively the same compared to baseline conditions because the primary change resulting from the Project would be only a shift in cargo movement modes, whereby on-dock rail use would increase and truck trips to transport cargo to off-dock yards would decrease. As such, because the amount of cargo delivered and handled at the Project site would not change, on-site noise levels associated with daily operations at the site under the Project would not result in a noticeable increase in noise levels at noise-sensitive receptors.

With respect to off-site noise sources, it was determined that the Project-related increase in the number of on-dock rail trips over the CEQA baseline condition would result in less than a 3 dBA increase in CNEL at the nearest liveaboard boats in the Cerritos Channel (refer to Table 4.13-2). In addition, because the proposed Project would decrease daily truck travel by up to 19,720 miles by 2040, vehicular traffic noise levels would be reduced compared with baseline conditions. Overall, Project operations would not result in a substantial permanent increase in ambient noise levels in the Project vicinity, above levels existing without the Project. Impacts would be less than significant, and no mitigation is required.

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity, above levels existing without the project?

Less-than-Significant Impact. As discussed under Threshold 4.13.a, above, construction (short-term) noise generated by the Project would not exceed any City noise standards. The Project's construction activities would not occur within 500 feet of a residential zone and thus would not disturb persons occupying sleeping quarters in any dwelling, hotel or apartment, or place of residence. In addition, the Project's construction activities would only occur during the allowable construction hours established under Section 41.40(a) of the LAMC. Thus, construction activities at the Project site would not result in a substantial temporary or periodic increase in ambient noise

levels in the Project vicinity above levels existing without the Project, and impacts would be less than significant, and no mitigation is required.

e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within 2 miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?

No Impact. The proposed Project would not be within 2 miles of a public airport or public use airport. No impacts would result, and no mitigation is required.

f) For a project located in the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels?

No Impact. The proposed Project would not be within the vicinity of a private airstrip. Although a helicopter-landing pad for Island Express Helicopter Service is located at Berth 95 (Catalina Express Sea and Air Terminal), approximately 1.5 mile west of the Project's northern terminus, the small helicopters at this location operate via the Main Channel. No impacts would result, and no mitigation is required.

4.14 Population and Housing

Would the Project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The proposed Project would not establish new residential uses within the Port, require the extension of roads or other growth-accommodating infrastructure, or result in the relocation of substantial numbers of people from outside of the region. Therefore, the proposed Project would not directly or indirectly induce substantial population growth through the extension of roads or other infrastructure. Therefore, no impacts associated with population growth would occur, and no mitigation is required.

b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?

No Impact. There is no housing within the boundaries of the Project site that would be displaced as a result of the proposed Project. No replacement housing would be needed or required with implementation of the proposed Project. No impact would occur, and no mitigation is required.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. There is no housing within the boundaries of the Project site that would be displaced as a result of the proposed Project. The proposed Project would not result in the displacement of any persons or the need for replacement housing. No impact would occur, and no mitigation is required.

4.15 Public Services

Would the Project:

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

i) Fire Protection?

Less-than-Significant Impact. The Los Angeles Fire Department (LAFD) currently provides fire protection and emergency services to the Project site and surrounding area. LAFD facilities in the Port include land-based fire stations and fireboat companies. The nearest station with direct fireboat access is Fire Station No. 111, located in Fish Harbor, about 1.5 miles west of the Project site. The approximate travel distance to the Project site is just under 3 miles. Fire Station No. 112, which also has fireboat access, is about 1.5 miles northwest of the Project site. The closest station is Fire Station No. 40, located to the north at 330 Ferry Street. The approximate travel distance to the Project site is approximately 1.75 miles distance. This station is located on Terminal Island and equipped with a single engine company, an assessment engine, rescue ambulance, and rehab air tender. This station would provide fire service by land.

As described above, the Project site is currently served by fire protection and emergency services. Construction of the proposed Project would not increase the need for services. Furthermore, construction would occur within the Project site and harbor and would not affect service ratios, response times, or other performance objectives of the LAFD.

Operation of the proposed Project would not result in any increase in demand for LAFD personnel, equipment, facilities, or firefighting capabilities, nor would it affect response times and lead to a substantial adverse physical impact.

Construction activities would include implementation of standard safety requirements, including preparation of an emergency response plan, and coordination with emergency service providers, including the LAFD. Accordingly, construction of the proposed Project is not expected to result in an increase in demand for LAFD personnel, equipment, facilities, or firefighting capabilities, nor would it affect response times and lead to a substantial adverse physical impact.

Operation of the proposed Project would comply with fire safety requirements as well as state and city fire codes, standards, and regulations. It would not increase the demand for fire protection services. Therefore, impacts related to fire protection would be less than significant, and no mitigation is required.

ii) Police Protection?

Less-than-Significant Impact. The LAPD and Port Police provide police services at the Port, with the latter being the primary law enforcement agency within the Port of Los Angeles. Specifically,

Port Police officers are responsible for patrol and surveillance within the Port's boundaries, including Port-owned properties in the communities of Wilmington, San Pedro, and Harbor City. Port Police officers maintain 24-hour land and water patrols and enforce federal, state, and local public safety statutes, Port tariff regulations, as well as environmental and maritime safety regulations. Port Police headquarters is at 330 Centre Street in San Pedro.

Although Port Police are the first responders in an emergency, the LAPD is also responsible for police services in the Project vicinity because the Port is part of the city of Los Angeles. The LAPD Harbor Division is located at 2175 John S. Gibson Boulevard in San Pedro, which is approximately 1.9 miles northwest of the Project site. The Harbor Division is responsible for patrols throughout San Pedro, Harbor City, and Wilmington.

Construction of the proposed Project would occur within the Project site. Street closures would not be required. Therefore, Project construction would not affect the demand for law enforcement such that new facilities would be required.

The proposed Project would be the same distance from service providers as the existing railyard and, therefore, would not increase emergency response times. The proposed Project would increase rail traffic to Pier 400, thereby decreasing the number of vehicles on roads that are used by service providers. It would not substantively alter terminal activities, increase long-term employment, or result in indirect growth such that additional police protection would be necessary. Therefore, impacts related to police protection would be less than significant, and no mitigation is required.

iii) Schools?

No Impact. The proposed Project would not generate population that would result in increased students or other impacts at schools. Therefore, no impacts on existing schools would occur and no mitigation is required.

iv) Parks?

No Impact. As further discussed in Section 4.16, *Recreation*, no residential uses or other land uses that are typically associated with directly inducing population growth are included as part of the proposed Project. An increase in patronage at park facilities is not expected. Therefore, no impacts associated with the construction or expansion of park facilities would occur, and no mitigation is required.

v) Other Public Facilities?

Less-than-Significant Impact. The USCG is a federal agency and responsible for a broad range of regulatory, law-enforcement, humanitarian, and emergency-response duties. The USCG mission includes maritime safety, maritime law enforcement, protection of natural resources, maritime mobility, national defense, and homeland security. The USCG's primary responsibility is to ensure the safety of vessel traffic in the channels of the Port and in coastal waters. The proposed Project would not result in impacts on USCG facilities or operations. No expansion of the Vessel Traffic Information System would be needed with the proposed Project. Therefore, the proposed Project is

not expected to result in an increase in demand for other public facilities, including the USCG, that could lead to a substantial adverse physical impact. Impacts would be less than significant, and no mitigation is required.

4.16 Recreation

Would the Project:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The proposed Project would not directly or indirectly result in physical deterioration of parks or other recreational facilities. Therefore, impacts associated with parks or other recreational facilities would not occur, and no mitigation is required.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The proposed Project would not include recreational facilities or new residential development that would require construction or expansion of recreational facilities. Therefore, no new or expanded recreational facilities would be constructed, and no impact would occur. No mitigation is required.

4.17 Transportation and Traffic

Would the Project:

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

No Impact. The proposed project is expected to reduce truck traffic on local and regional roadways and highways. Currently, on-dock rail capacity at the Port of Los Angeles/Port of Long Beach is insufficient, forcing cargo to be hauled by truck on highways to railyards outside the ports. Many intersections, roadways, freeways within the Port, as well as the I-710 corridor, currently operate at unacceptable levels of service. The poor operating conditions are expected to deteriorate over the next 20 years. The proposed Project would increase the number of containers being loaded/unloaded on/off trains at the Port of Los Angeles/Port of Long Beach, thereby reducing trucks miles traveled on NHFN-PHFS routes, including I-710 and I-110. These reductions would, in turn, improve safety, reduce congestion/travel times, and reduce pavement wear.

Terminal and Rail Capacity Analyses

A container terminal capacity analysis was conducted for the Pier 400 container terminal as a whole. To estimate terminal capacity, the POLA and most ports in the world use a methodology that relies on two capacity models, one that analyzes the terminals' container yard capacity and one that analyzes the terminals' berth capacity (a terminal could be berth constrained or backlands constrained or evenly balanced between the two). Key model variables include the length of the berth, number/size of berth cranes, size of vessels, berth crane productivity, size of the storage area, how the containers are stored (i.e., chassis vs. grounded) and how long the containers remain in storage (container dwell time), and operating hours for the berth and the yard. This analysis determined that the wharf capacity is less than the container yard capacity and thus is the governing capacity. The terminal capacity is estimated to be 4.852 million TEUs per year.

An analysis was also conducted to estimate the increase in capacity and commensurate use of the Pier 400 on-dock railyard. The proposed improvements will increase railyard capacity and ultimately commensurate use by approximately 525,275 TEUs/year under 2040 conditions. Hence, the same number of containers will shift from off-dock railyards to the on-dock railyard. This shifting of off-dock to on-dock use potentially reduces the dwell time of these same containers in the Pier 400 terminal by a day or so, which theoretically could increase the container yard capacity a nominal amount. However, because the Pier 400 terminal limiting capacity is that of the wharf, the increased on-dock railyard use will not increase the total terminal volume. Thus, the net effect of the proposed storage tracks is the shifting about 525,275 TEUs/year from off-dock yards to the Pier 400 on-dock yard (by 2040). This assumption of the full 525,275 TEUs shifting is based on likely commercial decisions, which would be based on increased efficiency, speed, and cost savings from on-dock rail compared with trucking to off-dock railyards, although there is no requirement

for the diversion from truck to rail. The following table summarizes the resultant terminal and on-dock volumes analyzed for two horizon years.

Table 4.17-1
Pier 400 Terminal and On-dock Volumes for 2021 and 2040

	Total Volume	On-dock Volume
Year 2021 w/o project	2,879,500	730,300
Year 2021 w/project	2,879,500	891,000
Year 2040 w/o project	4,852,200	1,037,400
Year 2040 w/project	4,852,200	1,562,600

Truck Traffic Analysis

The increase in capacity/use at the Pier 400 on-dock railyard will result in the shifting of 525,275 TEUs/year from the following three off-dock railyards: the UPRR ICTF, the UPRR East Los Angeles (ELA) yard on East Washington Boulevard in the city of Commerce, and the BNSF Hobart yard on Washington Boulevard in the city of Vernon. For the 2021 and 2040 container volume projections for on-dock railyard capacity increases/utilization, the truck trip estimates and reductions were quantified using the Port of Los Angeles and Port of Long Beach container trip generation model, called "QuickTrip." This model has been used on all POLA environmental documents since 2002 and is constantly updated and enhanced. The trip generation model is also used by the Southern California Association of Governments (SCAG) in its federally required Regional Transportation Plan (RTP).

Using comprehensive port-specific truck trip generation and POLA's travel demand model (Port Area Travel Demand Model [PortTAM]), the Terminal Island Railyard Enhancement Project truck volumes on the regional roadway system were produced for 2021 and 2040 conditions, without and with the Terminal Island (Pier 400) Railyard Enhancement Project. The PortTAM is a detailed model of truck and/or auto trips at all POLA/POLB container terminals, other cargo terminals and facilities within POLA/POLB boundaries, off-dock intermodal railyards owned and operated by the UPRR and BNSF, International Longshore and Warehouse Union labor dispatch halls, the POLA World Cruise Center, Ports 'O Call, the Carnival Cruise terminal, and the Queen Mary. Since its inception, POLA/POLB have constantly updated PortTAM to account for POLA/POLB cargo forecasts and resultant truck and auto trips; land use changes/forecasts and specific development projects within a 3- to 5-mile radius of the ports; constant logistics operations research that affects truck trips, such as on-dock and off-dock rail mode splits, empty container management, chassis management, dual transactions in the terminals, street-turns, and terminal operating hours; roadway system changes; and SCAG RTP model updates every 4 years, when they are released publicly. The logistics elements represent the structure of the aforementioned QuickTrip model. SCAG also updates its RTP model to incorporate the POLA/POLB PortTAM updates. POLA's models are also contained in other agency models and projects, such as, but not limited to, the SCAG RTP, the Gateway Cities Council of Governments Strategic Transportation Plan, and the

ongoing Caltrans/Los Angeles County Metropolitan Transportation Authority I-710 Corridor Project Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (State of California 2017).

The difference in the PortTAM model represents the shifting of containers from off-dock railyards to on-dock railyards. The amounts shifted from the three railyards were computed using historical off-dock volumes from UPRR and BNSF. This data yielded the following shares for the shitted containers: BNSF: 50 percent, UPRR ICTF: 45 percent, UPRR ELA: 5 percent. These shares have been used for many years, including recent POLA environmental documents, the I-710 Environmental Impact Report/Environmental Impact Statement, and the SCAG RTP. This shifting of containers will eliminate truck trips and reduce truck miles traveled, which in turn will reduce delay and increase vehicle hours traveled for all other motorists, as shown in Table 4.17-2.

Table 4.17-2
Daily Mobility Benefits (Trip, Miles-traveled, and Hours-traveled Reductions)

Year	Trips	Miles	Hours
2021	-560	-7,220	-350
2040	-1,520	-19,720	-7,980

To yield reasonable and conservative results, an increment of only 161,000 TEUs/year in on-dock volume was assumed under 2021 conditions. This value was estimated considering intermodal growth and actual volumes at the Pier 400 railyard over the last 10 years. The PortTAM model was then used to produce the truck miles traveled and vehicle hours traveled results.

Rail Analysis

The shift in containers being moved from off-dock yards to the Pier 400 on-dock railyard will result in a small increase in on-dock rail volumes moving to/from the Pier 400 railyard and the northern end of the Alameda Corridor, just east of both the UPRR ELA yard and the BNSF Hobart yard. There will be no net increase rail volumes east of these locations on the UPRR and BNSF rail lines because these shifted containers would have been otherwise loaded/unloaded onto trains in the ELA and Hobart railyards without the proposed Terminal Island (Pier 400) Railyard Enhancement Project. Similarly, there will also be a small increase in train volumes between the UPRR ICTF and the Pier 400 railyard, in addition to the shift from the ELA and Hobart yards (see Appendix B, Pier 400 Railyard Train Volumes). Tables 4.17-3 and 4.17-4 show the projected daily train volumes in Years 2021 and 2045 with and without the proposed project that would occur between the Pier 400 On-Dock Railyard and ICTF, and between ICTF and Downtown Los Angeles railyards.

TABLE 4.17-3
PIER 400 ON-DOCK YARD TO ICTF JCT. (SOUTH OF ICTF YARD) DAILY TRAINS

Year 2021 Conditions			Year 2045 Conditions		
No Project	With Project	Difference	No Project	With Project	Difference
On-Dock IPI Trains	On-Dock IPI Trains	On-Dock IPI Trains	On-Dock IPI Trains	On-Dock IPI Trains	On-Dock IPI Trains
6.7	8.2	1.5	9.6	14.4	4.8

TABLE 4.17-4
ICTF JCT. TO L.A. DOWNTOWN (NORTH OF ICTF YARD) DAILY TRAINS

Year 2021 Conditions			Year 2045 Conditions		
No Project	With Project	Difference	No Project	With Project	Difference
Total Trains	Total Trains	Total Trains	Total Trains	Total Trains	Total Trains
4.3	4.8	0.5	6.9	8.3	1.4

The shift in containers being moved from off-dock yards to the Pier 400 on-dock railyard will result in a small increase in on-dock rail volumes and locomotive emissions. The rail volumes were estimated for 2021 and 2040 conditions using the following basic factors:

- Total on-dock volumes, not just the estimated increment
- Average rail car length (depends on mix of cars that make up the trains)
- Locomotive length
- Number of locomotives per train for different train lengths
- Slot utilization (percentage of rail car capacity actually used by containers [e.g., a five-well railcar can hold 10 double-stacked containers; typical utilization is about 95 percent on average for eastbound trains])
- Market-wise distribution of trains by length (percentage of trains that are 6,000 feet, 8,000 feet, 10,000 feet, and 12,000 feet long, including locomotives)
- Switching movements (less than full unit trains) to/from the Terminal Island storage/staging yard (uses only one locomotive)
- Proportion of shifting from ELA yard, ICTF, and Hobart yard

There is no at-grade rail-roadway crossings between the POLA and the ELA and Hobart yards. Thus, the small number of additional on-dock train movements will not have any traffic impacts. The Terminal Island (Pier 400) Railyard Enhancement Project will also improve the movement of trains on Terminal Island, thus reducing train delays (operating hours). However, this particular benefit has not been quantified.

In conclusion, based on the above terminal rail capacity analysis, the Terminal Island (Pier 400) Railyard Enhancement Project would increase on-dock capacity and commensurate use by 525,275 TEUs/year. The proposed project would not increase the capacity of any marine terminals or increase vessel traffic. This capacity/use increase at the Pier 400 on-dock railyard would shift these 525,275 TEUs/year from off-dock yards located between 11 and 27 miles away. Using comprehensive Port-specific truck trip generation and travel demand models, this shifting of containers would reduce the number of truck trips as well as truck miles traveled, which, in turn, would increase speed and, therefore, reduce travel times for all motorists in 2021 and 2040 compared to existing conditions. Therefore, no impact on the existing circulation system would occur, and no mitigation is required.

b) Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?

No Impact. According to the Los Angeles County Congestion Management Program (CMP), a Transportation Impact Analysis (TIA) should be conducted at all CMP arterial monitoring intersections, including monitored freeway on-ramps and off-ramps where the proposed Project would add 50 or more trips during either the AM or PM weekday peak hours as well as mainline freeway monitoring locations where the proposed Project would add 150 or more trips in either direction during the AM or PM weekday peak hours. The City of Los Angeles' *Traffic Study Policies and Procedures* publication (City of Los Angeles 2014) states that a technical memorandum is required when a project is likely to add 25 to 42 AM or PM peak-hour trips and adjacent intersections are presently operating at level of service (LOS) E or F. In addition, the guidelines state that a traffic study is required when a project is likely to add 43 or more AM or PM peak-hour trips.

As indicated above, the proposed Project is expected to reduce the number of truck trips, miles traveled, and hours traveled, as shown in Table 4.17-1. Therefore, impacts on roads and highways during construction or operation would not occur, and no mitigation is required.

c) Result in a change in marine traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The proposed project would not increase the capacity of marine terminals or increase vessel traffic. Therefore, the proposed Project would not result in changes to marine traffic patterns. Impacts on traffic would not occur, and no mitigation is required.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The proposed project would reduce the number of truck miles traveled, which would reduce the potential for accidents involving trucks, accidents that often result in injuries or fatalities. The anticipated decrease in vehicular delay on roadways, attributable to reductions in the number of truck trips, would also decrease the potential for accidents. These safety benefits are expected to

be realized on adjacent roadways/freeways, including I-710 and I-110. Therefore, the proposed Project would not increase roadway hazards. No impact would occur, and no mitigation is required.

e) Result in inadequate emergency access?

No Impact. The proposed Project would not alter or close existing roadways or emergency access ways. Navy Way, which parallels the rail tracks, would remain open and operational throughout Project construction and operation. In addition, a new 12-foot-wide access road would be added as part of the Project. Because existing emergency access features and procedures would not be altered, and the proposed Project would not increase traffic or alter traffic patterns, emergency access would remain adequate. No impacts would occur, and no mitigation is required.

f) Conflict with adopted policies, plans, or programs regarding public transit or bicycle or pedestrian facilities or otherwise decrease the performance or safety of such facilities?

No Impact. The proposed Project does not include any modifications to roadways on Terminal Island that support bike lanes or bus stops. In addition, the proposed Project would not include construction of new pedestrian facilities associated with commercial or visitor-serving uses and amenities that would benefit from alternative modes of transportation. No impacts would occur, and no mitigation is required.

4.18 Tribal Cultural Resources

Dr. Gayle Totton of the California Native American Heritage Commission was contacted regarding the project. An informational package was delivered to Dr. Totton by certified mail on January 22, 2018. As of July 23, 2018, the LAHD has not received any information from Dr. Totton.

AB 52 Consultation: Pursuant to PRC Section 21080.3.1(d), Anthony Morales, Chief of San Gabriel Band of Mission Indians, was informed of the proposed Project. Pursuant to PRC Section 21080.3.1(b), the LAHD requested a response in writing within 30 days if consultation was desired. The informational package was delivered by certified mail on January 23, 2018. As of July 23, 2018, the LAHD had not received a request for consultation. The 30-day response period has closed, and AB 52 has been complied with.

Would the project

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as a site, feature, place, cultural landscape, sacred place, or object that has cultural value to a California Native American tribe and is listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources, as defined in Public Resources Code Section 5020.1(k).

Less-than-Significant Impact. The proposed Project would be located on artificial fill material. Therefore, tribal cultural resources are not likely to be present. Given its location on artificial fill material, the proposed Project would not have significant impacts on tribal resources, and no mitigation is required.

b) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as a site, feature, place, cultural landscape, sacred place, or object that has cultural value to a California Native American tribe and is determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

No Impact. The proposed Project would be located on artificial fill material. Therefore, tribal cultural resources are most likely not present. Given the absence of known tribal resources in the area, the proposed Project would not result in significant impacts on a California Native American tribe, and no mitigation is required.

4.19 Utilities and Service Systems

Would the Project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The Project site does not currently generate wastewater and would not generate wastewater in the future. Therefore, no impacts associated with wastewater treatment would occur, and no mitigation is required.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed Project would not increase the demand for potable water or generate wastewater such that development of new water or wastewater treatment facilities, or an expansion of existing facilities, would be required. Therefore, no impacts associated with the construction of new water or wastewater facilities would occur, and no mitigation is required.

c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. Storm drains are located throughout Terminal Island and the harbor area. The drains are maintained by the LAHD, Los Angeles Bureau of Sanitation, and County of Los Angeles. The Project site is currently served by an existing on-site storm drainage system that contains, treats, and conveys stormwater. The proposed Project involves primarily construction of new storage tracks, a 12-foot-wide access road, and a bridge extension. Impacts related to construction of new stormwater drainage facilities would not occur, and no mitigation is required.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. Water demand during construction would come primarily from construction workers. Although the construction contractor is likely to provide temporary toilet facilities and drinking water for its workers, this analysis makes the conservative assumption that construction workers would use the terminal's restrooms and drinking water. Water usage during construction would be temporary and insubstantial and would not exceed the existing supply. Therefore, construction of the proposed Project would have no impact on water supply.

Operation of the proposed Project would not result in personnel changes at the terminal that would generate additional water demand. Accordingly, no new or expanded water supply entitlements would be needed. No impacts on the City's water supply would occur from operation of the proposed Project, and no mitigation is required.

e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. As discussed above, the Project site does not currently generate wastewater and it would not generate wastewater in the future. Therefore, no impacts associated with wastewater treatment would occur, and no mitigation is required.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less-than-Significant Impact. Construction of the proposed Project would generate a small amount of construction debris from the grading activities. The generation of landfill waste would be reduced by recycling demolition debris to the extent feasible. The LAHD maintains an asphalt/concrete recycling facility at the intersection of East Grant Street and Foote Avenue in Wilmington. Any asphalt/concrete debris from construction activities would be crushed at the facility or elsewhere in the Port for reuse within the Port.

Solid waste from demolition and construction that requires disposal at a landfill is not expected to be substantial relative to the permitted capacity at the local or regional disposal facilities (e.g., Chiquita Canyon Landfill, Sunshine Canyon Landfill) that could accept such waste from the proposed Project. There is currently adequate inert waste disposal capacity available in Los Angeles County (Los Angeles Department of Water and Power 2017). Furthermore, a number of operations within Los Angeles County recycle construction and demolition material, and the Port, as a standard condition of permit approval, requires recycling of construction materials and the use of materials with recycled content where feasible to minimize impacts related to solid waste. Therefore, demolition debris would not exceed landfill capacity.

In summary, construction is anticipated to generate relatively small amounts of waste that would require disposal in a landfill, and construction would comply with applicable waste reduction requirements. Operation of the proposed Project would not result in an increase in solid waste generation relative to baseline conditions. The proposed Project would be served by landfills with adequate permitted capacity and, therefore, able to accommodate the Project's solid waste disposal needs. This impact would be less than significant, and no mitigation is required.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. The proposed Project does not currently generate solid waste and is not expected to generate solid waste in the future. Therefore, no impacts related to compliance with solid waste statutes and regulations would occur, and no mitigation is required.

4.20 Mandatory Findings of Significance

Would the project:

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less-than-Significant Impact after Mitigation Incorporated. As discussed in Section 4.4, *Biological Resources*, impacts would be less than significant with incorporation of MM-BIO-1 through ~~MM-BIO-4~~ MM-BIO-3. As discussed in Section 4.5, *Cultural Resources*, impacts would be less than significant, and no mitigation is required.

b) Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less-than-Significant Impact. The proposed Project would not result in any cumulatively considerable impacts. Several other development projects are currently under construction or planned or have recently been completed within the Port. These projects include container terminal, industrial, and other waterfront developments. Future projects would be evaluated in separate future environmental documents. These projects and other present and/or probable future projects would be required to comply with CEQA requirements, including implementation of mitigation measures to reduce or avoid environmental impacts, as well as applicable laws and regulations at the federal, state, and local level, including, but not limited to, the LAMC and local ordinances governing land use and development.

As discussed under each issue area in Sections 4.1 through 4.19 of this IS/MND, the proposed Project would not result in significant impacts related to aesthetics, agricultural and forestry resources, air quality, biological resources, cultural resources, energy, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, tribal cultural resources, or utilities and services systems that could not be mitigated to below significance.

The proposed Project would not result in significant impacts, and only four mitigation measures related to biological resources would be required. The Project site is currently developed with industrial uses, similar to what the Project now proposes. Because of the small scale and localized effects of the proposed Project, the potential incremental contribution from the proposed Project would not be cumulatively considerable. The proposed Project would increase the number of containers being loaded/unloaded on/off trains at the Port of Los Angeles/Port of Long Beach, thereby reducing trucks miles traveled on NHFN-PHFS routes, including I-710 and I-110. These reductions would, in turn, improve safety, reduce congestion/travel times, and reduce pavement

wear. According to detailed capacity modeling and intermodal analysis, the expanded Terminal Island (Pier 400) Railyard would increase on-dock capacity and commensurate use by 525,275 TEUs/year. The proposed project would not increase the capacity of any marine terminals or increase vessel traffic. This capacity/use increase at the Pier 400 on-dock railyard would shift these 525,275 TEUs/year from off-dock yards located between 11 and 27 miles away. The analysis has determined that the proposed Project would not have any individually limited but cumulatively considerable impacts.

Approved projects, as well as other current and future probable projects, are required to comply with CEQA requirements, including implementation of mitigation measures to reduce or avoid environmental impacts, as well as applicable laws and regulations at the federal, state, and local level. These regulations include, but are not limited to, the Los Angeles City Building Code, LAHD Sustainable Construction Guidelines, and RWQCB Section 401 certification. The analysis contained herein has determined that the proposed Project would not have any individually limited but cumulatively considerable impacts. No mitigation measures are required.

c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

Less-than-Significant Impact. Based on the analysis in this IS/MND, substantial adverse impacts on human beings would not occur as a result of the proposed Project. All impacts related to the proposed Project would be less than significant.

5.0 Proposed Finding

LAHD has prepared this IS/MND to address the environmental effects of the proposed Project. Based on the analysis provided in this IS/MND, LAHD finds that the proposed Project would not have a significant effect on the environment with incorporation of the mitigation measures described in this document.

This page intentionally left blank.

6.0 Preparers and Contributors

6.1 LAHD, Environmental Management Division

- Christopher Cannon, Director of Environmental Management
- Lisa Wunder, Marine Environmental Manager
- Tara Tisopulos, Environmental Specialist

6.2 ICF

- Chad Beckstrom, Project Director
- Namrata Cariapa, Project Manager
- Stephen Bryne, Archaeologist
- Andrew Bursan, Architectural Historian
- April Calhoun, Environmental Specialist
- Terrance Wong, Noise Specialist
- Laura Yoon, Air Quality, climate change Specialist
- Mario Barrera, Hazardous Waste and Geotechnical Specialist

This page intentionally left blank

7.0 Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
AER	Annual Emission Reporting
AQMP	Air Quality Management Plan
ASBS	Areas of Special Biological Significance
Basin	South Coast Air Basin
Basin Plan	Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties
BMPs	best management practices
CAAP	Clean Air Action Plan
Cal/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
City	City of Los Angeles
CMP	Congestion Management Program
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COCs	contaminants of concern
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dBA	A-weighted decibel
DO	dissolved oxygen
DTSC	Department of Toxic Substances Control
EFH	Essential Fish Habitat
ELA	East Los Angeles
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act

Acronym/Abbreviation	Definition
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FMP	Fisheries Management Plan
GCASP	General Construction Activity Stormwater Permit
GHG	greenhouse gas
GIASP	General Industrial Activities Stormwater Permit
HAPCs	Habitat Areas of Particular Concern
I	Interstate
ICTF	Intermodal Container Transfer Facility
in/s	inch per second
IS/MND	Initial Study/Mitigated Negative Declaration
LAFD	Los Angeles Fire Department
LAHD	Los Angeles Harbor Department
LAMC	Los Angeles Municipal Code
LAPD	Los Angeles Police Department
LARWQCB	Los Angeles Regional Water Quality Control Board
LOS	level of service
LST	Localized Significance Threshold
LUST	leaking underground storage tank
M	magnitude
MBTA	Migratory Bird Treaty Act
MD	munitions debris
MEC	munitions and explosives of concern
mg/l	milligrams per liter
MLLW	mean lower low water
MLPA	Marine Life Protection Act
MMPA	Marine Mammal Protection Act
MPA	Marine Protected Area
MTBE	methyl tert-butyl ether
NAAQS	National Ambient Air Quality Standards
NHFN-PHFS	National Highway Freight Network/Primary Highway Freight System
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
Ocean Plan	Water Quality Control Plan for Ocean Waters of California
OEHHA	Office of Environmental Health Hazard Assessment

Acronym/Abbreviation	Definition
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PM10	coarse particulate matter
PM2.5	fine particulate matter
PMP	Port Master Plan
POLB	Port of Long Beach
Port or POLA	Port of Los Angeles
Port Police	Los Angeles Harbor Department Port Police
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PPV	peak particle velocity
PortTAM	Port Area Travel Demand Model
PRC	Public Resources Code
Project	Terminal Island (Pier 400) Railyard Enhancement Project
psu	practical salinity unit
RMS	root mean square
RTP	Regional Transportation Plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SI	site inspection
SIP	State Implementation Plan
SMCA	State Marine Conservation Area
SMP	State Marine Park
SMR	State Marine Reserve
SO_2	sulfur dioxide
SVOCs	semivolatile organic compounds
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TEUs	twenty-foot-equivalent units
TIA	Transportation Impact Analysis
UPRR	Union Pacific Railroad
USC	United States Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
VOCs	volatile organic compounds
WDR	waste discharge requirement
WRAP	Water Resources Action Plan

This page intentionally left blank

8.0 References

Bertness, M.D. 1989. Intraspecific Competition and Facilitation in a Northern Acorn Barnacle Population. In *Ecol.* 70:257–268.

Bertness, M.D., G.H. Leonard, J.M. Levine, and J.F. Bruno. 1999. Climate-driven Interactions among Intertidal Organisms Caught between a Rock and a Hard Place. In *Oceol*. 120(3):446–450.

Blockley, D.J., and M.G. Chapman. 2006. Recruitment Determines Differences between Assemblages on Shaded or Unshaded Seawalls. In *Mar. Ecol. Progr. Ser.* 32727–36.

Bonnell, M.L., and M.D. Dailey. 1993. Marine Mammals. In *Ecology of the Southern California Bight: A Synthesis and Interpretation*, M.D. Dailey, D.J. Reish, and J.W. Anderson (eds.), Chapter 11. Berkeley, CA: University of California Press.

California Air Pollution Control Officers Association. 2008. Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. January.

California Air Resources Board. 2017. *Area Designations Maps, State and National.* Last revised: October 18, 2017. Available: https://www.arb.ca.gov/desig/adm/adm.htm. Accessed: July 9, 2018.

California Department of Conservation 2011. *Farmland Mapping Monitoring Program.* Available: Ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/los10.pdf.

California Department of Conservation 2013. *Important Farmland in California*. Updated: July 2013. Available: Ftp://ftp.consrv.ca.gov/pub/dlrp/fmmp/pdf/statewide/2010/fmmp2010_08_11.pdf.

California Department of Fish and Wildlife. 2015. *Natural Community Conservation Plan Summary–Rancho Palos Verdes Natural Community Conservation Plan/Habitat Conservation Plan.* Available: https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Rancho-Palos-Verdes. Accessed: July 20, 2018.

California Department of Forestry and Fire Protection. 2011. *Very High Fire Hazard Severity Zones in LRA, Los Angeles County*. Available: http://frap.fire.ca.gov/webdata/maps/los_angeles/LosAngelesCounty.pdf. Accessed: July 20, 2018.

California Department of Transportation. 2013. *List of Eligible and Officially Designated Routes*. Office of the State Landscape Architect. Available: http://www.dot.ca.gov/design/lap/livability/scenic-highways/. Accessed: July 30, 2018.

City of Los Angeles. 1982. *Port of Los Angeles Plan*. Department of City Planning.

City of Los Angeles. 1996. *City of Los Angeles General Plan.* Safety Element. Approved: August 8. Adopted: November 26. Available: http://planning.lacity.org/cwd/gnlpln/SaftyElt.pdf. Accessed: July 30, 2018.

City of Los Angeles. 1999. *City of Los Angeles General Plan, Noise Element.* November 12.

City of Los Angeles. 2006. *L.A. CEQA Thresholds Guide.*

City of Los Angeles. 2011. *Development Best Management Practices Handbook.* Available: http://www.lastormwater.org/wp-content/files_mf/lidhandbookfinal62212.pdf. Accessed: July 20, 2018.

City of Los Angeles. 2014. Traffic Study Policies and Procedures.

City of Los Angeles. 2015. *Los Angeles City Ordinance No. 177404*. March 13. Available: https://cityplanning.lacity.org/Code_Studies/Other/ProtectedTreeOrd.pdf.

City of Los Angeles. 2016. *City of Los Angeles Municipal Code*. Chapter XI, Noise Regulation.

City of Los Angeles. 2018. *Official City of Los Angeles Municipal Code*. Sixth edition.

County of Los Angeles. 2015. *Significant Ecological Areas and Coastal Resource Areas Policy Map.* Available: http://planning.lacounty.gov/assets/upl/project/gp_2035_2014-FIG_9-3_significant_ecological_areas.pdf. Accessed: July 17, 2018.

Federal Emergency Management Agency. 2008. *Flood Insurance Rate Map, Los Angeles County, California.* Map Number 06037C2055F.

Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. May.

Federal Railroad Administration. 2013. Locomotive Horn Sounding and Quite Zone Establishment Fact Sheet. February. Available: file:///C:/Users/39037/Downloads/FRA%20Train%20Horn%20and%20Quiet%20Zone%20Fact%20Sheet.pdf.

Glasby, T.M. 1999. Effects of Shading on Subtidal Epibiotic Assemblages. In *J. Exp. Mar. Biol. and Ecol.* 234(2):275–290.

Hamilton, R.A., and D.R. Willick. 1996. *The Birds of Orange County California.* Status and Distribution. Irvine, CA: Sea and Sage Press.

Kaufman, K. 1996. *Lives of North American Birds.* Boston and New York: Houghton Mifflin Company.

Langdon Biological Consulting. 2017. *Monitoring Report for the California Least Tern 2016 Season.* Pier 400 Nesting Site, Los Angeles Harbor, City of Los Angeles, Los Angeles County, California. Prepared for Los Angeles Harbor Department, Environmental Management Division.

Los Angeles Harbor Department. 2006. *Clean Air Action Plan.* November.

Los Angeles Harbor Department. 2010. *Clean Air Action Plan Update*. November.

Los Angeles Harbor Department. 2017. *Clean Air Action Plan Update*. November.

Los Angeles Harbor Department. 2017a. *Acoustic Threshold White Paper.*

Los Angeles Harbor Department. 2018. Berths 238–239 [PBF Energy] Marine Oil Terminal Wharf Improvements Project IS/MND. Draft.

MBC Applied Environmental Sciences. 1989. *Gray Whale Monitoring Study, Final Report.* Prepared for Minerals Management Service, Pacific OCS Region. August. MMS 88 0075.

MBC Applied Environmental Sciences. 2016. *2013–2014 Biological Surveys of Long Beach and Los Angeles Harbors.* In Association with Merkel & Associates and Thomas Johnson Consultant, LLC.

Moffatt and Nichol. 2007. *Tsunami Hazard Assessment for the Ports of Long Beach and Los Angeles.* Final report prepared for Port of Long Beach. April.

National Oceanic and Atmospheric Administration Fisheries. 2008. *Caulerpa Control Protocol*. Version 4. February 25.

National Oceanic and Atmospheric Administration Fisheries. 2016. *California Eelgrass Mitigation Policy and Implementing Guidelines.* West Coast Division. October.

Office of Environmental Health Hazard Assessment. 2015. Air Toxics Hot-Spots Program Guidance Manual for Preparation of Health Risk Assessments. March.

Otott, George E. Jr., and Donald D. Clarke. 1996. History of the Wilmington Field, 1986–1996. In AAPG Pacific Section, Old Oil Fields and New Life: A Visit to the Giants of the Los Angeles Basin.

Pacific Fishery Management Council. 2011. *Coastal Pelagic Species Fishery Management Plan as Amended through Amendment 13.* September. National Oceanic and Atmospheric Administration Award Number NA10NMF4410014.

Pacific Fishery Management Council. 2016a. *Fisheries off West Coast States*. Comprehensive Ecosystem-based Amendment 1, Amendments to the Fishery Management Plans for Coastal Pelagic Species, Pacific Coast Groundfish, U.S. West Coast Highly Migratory Species, and Pacific Coast Salmon. May. *Federal Register*: 50 CFR Part 660.

Pacific Fishery Management Council. 2016b. *Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery.* March. National Oceanic and Atmospheric Administration Award Number NA05NMF441008.

Port of Los Angeles. 2014. *Port of Los Angeles Energy Management Action Plan*. Prepared by Burns & McDonnell. July. Available: http://www.portoflosangeles.org/DOC/DRAFT%20POLA%20E-MAP_July%202014.pdf. Accessed: July 18, 2018.

South Coast Air Quality Management District. 2003. Appendix D: Cumulative Impact Analysis Requirements Pursuant to CEQA. In *Potential Control Strategies to Address Cumulative Impacts from Air Pollution*. August.

South Coast Air Quality Management District. 2005. Staff Report for Proposed Rule 1401.1 – Requirements for Facilities near Schools.

South Coast Air Quality Management District. 2008. *Attachment E: Draft Guidance Document, Interim CEQA Greenhouse Gas Significance Threshold*. October. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf?sfvrsn=2.

South Coast Air Quality Management District. 2016. *Air Quality Management Plan*.

The Climate Registry. 2016. Climate Registry Default Emission Factors. April 19.

The Climate Registry. 2017. *Default Emissions Factors*. March.

University of Southern California. 2013. *Sea Level Rise Vulnerability Study for the City of Los Angeles.* Sea Grant Program. Publication Number: USCSG-TR-05-2013. Available: http://dornsife.usc.edu/assets/sites/291/docs/pdfs/City_of_LA_SLR_Vulnerability_Study_FINAL_Summary_Report_Online_Hyperlinks.pdf.

U.S. Army Corps of Engineers and Los Angeles Harbor Department. 1992. Environmental Impact Statement/Environmental Impact Report, Deep Draft Navigation Improvements, Los Angeles and Long Beach Harbors, San Pedro Bay, California. Draft. San Pedro, CA.

U.S. Environmental Protection Agency. 2018. *Nonattainment Areas for Criteria Pollutants (Green Book).* Last revised: June 30, 2018. Available: https://www.epa.gov/green-book. Accessed: July 9, 2018.

Personal Communication

Merkel, K. July 5, 2018—email confirming eelgrass conditions in Project area remain similar to those reported in MBC 2016.

APPENDIX A
Air Quality Supporting Documentation

APPENDIX A
Air Quality Supporting Documentation

Construction

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Tasks

Tasks, Durations, and Construction Emissions by Task

					Max. Daily Construction Emissions (lb/day)						
ID	**Task Name**	**Duration (days)**	**Approx. Start Date**	**Approx. End Date**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
1	**DRAFT Pier 400 Project Construction Schedule**										
2	Mobilization	1	4/1/2020	4/2/2020	2.6	0.2	2.3	0.4	0.2	0.0	1,467
3	Site Removals	60	4/2/2020	6/1/2020	24.6	1.1	9.9	9.7	1.7	0.1	10,843
4	Abutment #1 Excavation	7	6/1/2020	6/8/2020	4.4	0.3	5.1	0.6	0.3	0.0	2,281
5	Abutment #1 Pile Driving	3	6/8/2020	6/11/2020	18.6	1.9	9.8	1.3	1.0	0.0	3,686
6	Abutment #1 Final Construction	7	6/11/2020	6/18/2020	41.9	1.1	5.7	2.3	1.5	0.2	16,288
7	Bent #1 Pile Driving	2	6/18/2020	6/20/2020	18.6	1.9	9.8	1.3	1.0	0.0	3,686
8	Bent #1 Pile Cap Forming	7	6/20/2020	6/27/2020	3.3	0.4	8.1	0.4	0.3	0.0	1,969
9	Bent #1 Pile Cap Pour & Curing	7	6/27/2020	7/4/2020	5.6	0.2	1.9	0.6	0.3	0.0	2,604
10	Bent #1 Pile Cap Forming Removal	7	7/4/2020	7/11/2020	1.6	0.3	3.9	0.4	0.2	0.0	1,248
11	Girder Set #1 Placement	7	7/11/2020	7/18/2020	2.5	0.3	4.0	0.4	0.3	0.0	1,529
12	Bent #2 Pile Driving	2	7/18/2020	7/20/2020	18.6	1.9	9.8	1.3	1.0	0.0	3,686
13	Bent #2 Pile Cap Forming	7	7/20/2020	7/27/2020	3.3	0.4	8.1	0.4	0.3	0.0	1,969
14	Bent #2 Pile Cap Pour & Curing	7	7/27/2020	8/3/2020	5.6	0.2	1.9	0.6	0.3	0.0	2,604
15	Bent #2 Pile Cap Forming Removal	7	8/3/2020	8/10/2020	1.6	0.3	3.9	0.4	0.2	0.0	1,248
16	Girder Set #2 Placement	7	8/10/2020	8/17/2020	2.5	0.3	4.0	0.4	0.3	0.0	1,529
17	Bent #3 Pile Driving	2	8/17/2020	8/19/2020	18.6	1.9	9.8	1.3	1.0	0.0	3,686
18	Bent #3 Pile Cap Forming	7	8/19/2020	8/26/2020	3.3	0.4	8.1	0.4	0.3	0.0	1,969
19	Bent #3 Pile Cap Pour & Curing	7	8/26/2020	9/2/2020	5.6	0.2	1.9	0.6	0.3	0.0	2,604
20	Bent #3 Pile Cap Forming Removal	7	9/2/2020	9/9/2020	1.6	0.3	3.9	0.4	0.2	0.0	1,248
21	Girder Set #3 Placement	7	9/9/2020	9/16/2020	2.5	0.3	4.0	0.4	0.3	0.0	1,529
22	Bent #4 Pile Driving	2	9/16/2020	9/18/2020	18.6	1.9	9.8	1.3	1.0	0.0	3,686
23	Bent #4 Pile Cap Forming	7	9/18/2020	9/25/2020	3.3	0.4	8.1	0.4	0.3	0.0	1,969
24	Bent #4 Pile Cap Pour & Curing	7	9/25/2020	10/2/2020	5.6	0.2	1.9	0.6	0.3	0.0	2,604
25	Bent #4 Pile Cap Forming Removal	7	10/2/2020	10/9/2020	1.6	0.3	3.9	0.4	0.2	0.0	1,248
26	Girder Set #4 Placement	7	10/9/2020	10/16/2020	2.5	0.3	4.0	0.4	0.3	0.0	1,529
27	Bent #5 Pile Driving	2	10/16/2020	10/18/2020	18.6	1.9	9.8	1.3	1.0	0.0	3,686

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Tasks

Tasks, Durations, and Construction Emissions by Task

					Max. Daily Construction Emissions (lb/day)						
ID	Task Name	Duration (days)	Approx. Start Date	Approx. End Date	NOx	VOC	CO	PM10	PM2.5	SO2	GHG
28	Bent #5 Pile Cap Forming	7	10/18/2020	10/25/2020	3.3	0.4	8.1	0.4	0.3	0.0	1,969
29	Bent #5 Pile Cap Pour & Curing	7	10/25/2020	11/1/2020	5.6	0.2	1.9	0.6	0.3	0.0	2,604
30	Bent #5 Pile Cap Forming Removal	7	11/1/2020	11/8/2020	1.6	0.3	3.9	0.4	0.2	0.0	1,248
31	Girder Set #5 Placement	7	11/8/2020	11/15/2020	2.5	0.3	4.0	0.4	0.3	0.0	1,529
32	Bent #6 Pile Driving	2	11/15/2020	11/17/2020	18.6	1.9	9.8	1.3	1.0	0.0	3,686
33	Bent #6 Pile Cap Forming	7	11/17/2020	11/24/2020	3.3	0.4	8.1	0.4	0.3	0.0	1,969
34	Bent #6 Pile Cap Pour & Curing	7	11/24/2020	12/1/2020	5.6	0.2	1.9	0.6	0.3	0.0	2,604
35	Bent #6 Pile Cap Forming Removal	7	12/1/2020	12/8/2020	1.6	0.3	3.9	0.4	0.2	0.0	1,248
36	Girder Set #6 Placement	7	12/8/2020	12/15/2020	2.5	0.3	4.0	0.4	0.3	0.0	1,529
37	Bent #7 Pile Driving	2	12/15/2020	12/17/2020	18.6	1.9	9.8	1.3	1.0	0.0	3,686
38	Bent #7 Pile Cap Forming	7	12/17/2020	12/24/2020	3.3	0.4	8.1	0.4	0.3	0.0	1,969
39	Bent #7 Pile Cap Pour & Curing	7	12/24/2020	12/31/2020	5.6	0.2	1.9	0.6	0.3	0.0	2,604
40	Bent #7 Pile Cap Forming Removal	7	12/31/2020	1/7/2021	1.6	0.3	3.9	0.4	0.2	0.0	1,248
41	Girder Set #7 Placement	7	1/7/2021	1/14/2021	2.5	0.3	4.0	0.4	0.3	0.0	1,529
42	Bent #8 Pile Driving	2	1/14/2021	1/16/2021	18.6	1.9	9.8	1.3	1.0	0.0	3,686
43	Bent #8 Pile Cap Forming	7	1/16/2021	1/23/2021	3.3	0.4	8.1	0.4	0.3	0.0	1,969
44	Bent #8 Pile Cap Pour & Curing	7	1/23/2021	1/30/2021	5.6	0.2	1.9	0.6	0.3	0.0	2,604
45	Bent #8 Pile Cap Forming Removal	7	1/30/2021	2/6/2021	1.6	0.3	3.9	0.4	0.2	0.0	1,248
46	Girder Set #8 Placement	7	2/6/2021	2/13/2021	2.5	0.3	4.0	0.4	0.3	0.0	1,529
47	Bent #9 Pile Driving	2	2/13/2021	2/15/2021	18.6	1.9	9.8	1.3	1.0	0.0	3,686
48	Bent #9 Pile Cap Forming	7	2/15/2021	2/22/2021	3.3	0.4	8.1	0.4	0.3	0.0	1,969
49	Bent #9 Pile Cap Pour & Curing	7	2/22/2021	3/1/2021	5.6	0.2	1.9	0.6	0.3	0.0	2,604
50	Bent #9 Pile Cap Forming Removal	7	3/1/2021	3/8/2021	1.6	0.3	3.9	0.4	0.2	0.0	1,248
51	Girder Set #9 Placement	7	3/8/2021	3/15/2021	2.5	0.3	4.0	0.4	0.3	0.0	1,529
52	Abutment #2 Excavation	7	3/15/2021	3/22/2021	4.4	0.3	5.1	0.6	0.3	0.0	2,281
53	Abutment #2 Pile Driving	3	3/22/2021	3/25/2021	18.6	1.9	9.8	1.3	1.0	0.0	3,686
54	Abutment #2 Final Construction	7	3/25/2021	4/1/2021	41.9	1.1	5.7	2.3	1.5	0.2	16,288

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Tasks

Tasks, Durations, and Construction Emissions by Task

					Max. Daily Construction Emissions (lb/day)						
ID	**Task Name**	**Duration (days)**	**Approx. Start Date**	**Approx. End Date**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
55	Girder Set #10 Placement	7	4/1/2021	4/8/2021	2.5	0.3	4.0	0.4	0.3	0.0	1,529
56	Crane Demobilization	3	4/8/2021	4/11/2021	1.1	0.1	1.8	0.4	0.2	0.0	911
57	Railroad Track Construction	90	3/12/2021	6/10/2021	18.7	1.0	15.3	1.3	0.9	0.1	7,925
58	Railroad Track Turnout and Crossover Construction	60	6/10/2021	8/9/2021	5.5	0.7	14.0	0.2	0.2	0.0	2,924
59	Asphalt Paving and Fencing	45	8/9/2021	9/23/2021	7.7	6.3	6.4	0.7	0.5	0.0	2,674
	Max. Daily Construction Emissions (reflects overlapping tasks)				60.7	6.3	25.1	9.7	2.3	0.2	24,214

Max. Annual GHG Construction Emissions

	Max. Annual GHG Construction Emissions (metric tons/year)
Max. Annual GHG Construction Emissions	< 685
Total Project GHG Construction Emissions	< 1,127

Notes:

Task ID, Task Name, Equipment, and Duration (Days) from draft 1/29/18 project construction schedule. Start/end dates estimated from Gantt chart.

Task 57 overlaps with Tasks 51-56; all other tasks do not overlap.

Construction duration = ~18 months (2020 - 2021)

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Mobilization

Mobilization

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi/ day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Large crawler crane	Offroad	1	0.5	300	0.29	-	0.1	0.0	0.1	0.0	0.0	0.0	51
40-ton crane	Offroad	1	0.5	164	0.29	-	0.1	0.0	0.2	0.0	0.0	0.0	28
Excavator	Offroad	1	0.5	164	0.38	-	0.1	0.0	0.2	0.0	0.0	0.0	37
Loader	Offroad	1	0.5	250	0.36	-	0.1	0.0	0.1	0.0	0.0	0.0	53
Grader	Offroad	1	0.5	183	0.41	-	0.1	0.0	0.1	0.0	0.0	0.0	44
Flatbed truck	Onroad	5		-	-	40	2.2	0.1	0.3	0.0	0.0	0.0	705
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust						-				0.4	0.2		
Total							2.6	0.2	2.3	0.4	0.2	0.0	1,466.9

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])

See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Fugitive dust includes onroad vehicle travel on paved roads and brake and tire wear.

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Site Removals

Site Removals

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi/ day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Excavator	Offroad	1	8	164	0.38	-	1.3	0.1	3.4	0.1	0.1	0.0	585
Loader	Offroad	1	8	250	0.36	-	1.1	0.2	1.7	0.1	0.1	0.0	844
Grader	Offroad	1	8	183	0.41	-	0.9	0.2	1.4	0.0	0.0	0.0	704
Haul truck (10-wheel)	Onroad	54	-	-	-	40	19.9	0.5	1.9	0.1	0.1	0.1	7,737
Flatbed truck	Onroad	3	-	-	-	40	1.3	0.0	0.2	0.0	0.0	0.0	423
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust						-				9.5	1.5		
Total							24.6	1.1	9.9	9.7	1.7	0.1	10,843

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])

See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Fugitive dust includes grading, soil/material handling, onroad vehicle travel on paved roads, brake and tire wear.

Parameter	Value		Basis/Assumption
Task duration:	60	days	POLA staff
Excavated quantity:	38,000	CY total	POLA staff (3/8/18 estimate): 37,387 CY. CY = cubic yard.
Soil density:	1.26	ton/CY	CalEEMod default (~1.5 g/m3 = approx. density of silty loam soil).
Excavation rate:	798	ton/day	
	634	CY/day	
Haul trucks:	54	trucks/day	max. 15 tons per 10-wheel haul truck.

Fugitive dust from soil handling/drop operations:

AP42, Section 13.2.4 (Aggregate Handling and Storage Piles, 11/2006):

PM10 (lb/ton) = 0.35 * (0.0032) * ((u / 5)^(1.3) / (M / 2)^(1.4))

PM2.5 (lb/ton) = 0.053 * (0.0032) * ((u / 5)^(1.3) / (M / 2)^(1.4))

where u = mean wind speed and M = material moisture content

Parameter	Value		Basis/Assumption
u:	6.4	mph	Long Beach avg wind speed = 6.4 mi/hr (AP42, Ch 7.1 (11/2006), Table 7.1-9)
M:	12	%	CalEEMod default, "Cover" material. (Range: Dry = 2%, Moist = 15%, Wet = 50%)
PM10 :	0.00013	lb/ton	
PM2.5:	0.00002	lb/ton	

Fugitive dust from grading:

AP42, Ch 11.9 (Western Surface Coal Mining, 11/2006), Table 11.9-1:

PM10 (lb/mile) = 0.60 * 0.051 (S)^2.0

PM2.5 (lb/mile) = 0.031 * 0.040 (S)^2.5

where S = mean vehicle speed (mph)

Parameter	Value		Basis/Assumption
S:	4	mph	Estimated mean speed during grading (blade down). Est. range: 2-5 mph for finishing.
PM10 EF:	0.490	lb/mi	

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Site Removals

PM2.5 EF:	0.040	lb/mi	
job efficiency:	50%		estimate (ie. 50% means during 8 hr of operation only 4 hr is grading with blade down)
PM10:	7.83	lb/day	(Grading speed [mi/hr]) * (job efficiency [%]) * (Operation [hr/day])
PM2.5:	0.63	lb/day	

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Abutment (Excavating, Pile Driving, Finishing)

Abutment Excavation

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi/ day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Excavator	Offroad	1	8	164	0.38	-	1.3	0.1	3.4	0.1	0.1	0.0	585
Haul truck (10-wheel)	Onroad	8	-	-	-	40	2.9	0.1	0.3	0.0	0.0	0.0	1,146
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust										0.5	0.3		
Total							4.4	0.3	5.1	0.6	0.3	0.0	2,281

Emissions estimates are for one abutment.

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])

See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Fugitive dust includes soil/material handling, onroad vehicle travel on paved roads, brake and tire wear.

Parameter	Value		Basis/Assumption
Task duration:	7	days	POLA staff
Excavated quantity:	784	ton	POLA staff (3/3/18 project design): 1,568 tons total for both abutments.
	622	CY	
Soil density:	1.26	ton/CY	CalEEMod default (~1.5 g/m3 = approx. density of silty loam soil).
Excavation rate:	112	ton/day	
	89	CY/day	
Total trucks	8	trucks/day	15 ton capacity per 10-wheel haul truck.

Fugitive dust from soil handling/drop operations:

AP42, Section 13.2.4 (Aggregate Handling and Storage Piles, 11/2006):

PM10 (lb/ton) = 0.35 * (0.0032) * ((u / 5)^(1.3) / (M / 2)^(1.4))

PM2.5 (lb/ton) = 0.053 * (0.0032) * ((u / 5)^(1.3) / (M / 2)^(1.4))

where u = mean wind speed and M = material moisture content

Parameter	Value		Basis/Assumption
u:	6.4	mph	Long Beach avg wind speed = 6.4 mi/hr (AP42, Ch 7.1 (11/2006), Table 7.1-9)
M:	12	%	CalEEMod default 12%, "Cover" material. (Range: Dry = 2%, Moist = 15%, Wet = 50%)
PM10 :	0.00013	lb/ton	
PM2.5:	0.00002	lb/ton	

POLA Pier 400/Terminal Island Railyard Enhancement Project
Construction Emissions - May 2018
Abutment (Excavating, Pile Driving, Finishing)

Abutment Pile Driving

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi /day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Large crawler crane	Offroad	1	8	300	0.29	-	1.3	0.2	1.6	0.1	0.1	0.0	816
Pile driver	Offroad	1	4	196	1	-	13.1	1.5	4.8	0.7	0.6	0.0	920
Shuttlelift carrydeck crane	Offroad	1	8	100	0.29	-	0.6	0.1	1.6	0.0	0.0	0.0	272
Flatbed truck	Onroad	8	-	-	-	40	3.5	0.1	0.4	0.0	0.0	0.0	1,128
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust										0.4	0.3		
Total							18.6	1.9	9.8	1.3	1.0	0.0	3,686

Emissions estimates are for one abutment.
See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Parameter	Value		Basis/Assumption
Pile driving:	0.5	hr/pile	POLA staff: 0.25 hr/pile. Use 0.5 hr/pile for calcs.
Piles daily:	8	piles/day	POLA staff: 8 piles/day (1 hr/pile including setup)
Piles per truck:	1	piles/truck	18 ton/pile (600 lb/ft * 60 ft), 25-ton flatbed truck capacity.
Flatbed trucks daily:	8	trucks/day	

Abutment Finishing

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi /day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Concrete boom truck	Onroad	1	-	-	-	30	0.3	0.0	0.0	0.0	0.0	0.0	113
Concrete boom pump	-	-	-	-	-	-	3.7	0.1	0.3	0.0	0.0	0.0	1,443
Concrete mixer truck	Onroad	128	-	-	-	30	37.6	0.9	3.6	0.2	0.2	0.1	14,139
Roller	Offroad	1	2	49	0.38	-	0.3	0.0	0.3	0.0	0.0	0.0	44
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust										2.0	1.3		
Total							41.9	1.1	5.7	2.3	1.5	0.2	16,288

Emissions estimates are for one abutment.
See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Parameter	Value		Basis/Assumption
Concrete total:	7133	CY	POLA staff (3/8/18 estimate): 14,265 CY total for superstructure.
Pour duration:	7	days	task duration is 7 days
Concrete daily:	1019	CY/day	
Mixer truck capacity:	8	CY/truck	standard concrete mixer truck capacity is 8 CY

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Abutment (Excavating, Pile Driving, Finishing)

Mixer trucks daily: 128 trucks/day

Concrete boom truck pump:	Concrete pumping emission factors (grams/CY)						
	NOx	VOC	CO	PM10	PM2.5	SO2	GHG
Concrete pumping emission factors	1.6	0.0	0.2	0.0	0.0	0.0	642.1

Factors derived from EMFAC2014 and boom truck pumping fuel use data (41.34-52.1 gal diesel to pump ~825 CY over 5 hours).

Ref:http://concretepumping.com/topic/schwing-runs-fuel-efficiency-test-4-pumps-pumping-into-each-other-for-5-hours

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Bent (Pile Driving, Cap Forming, Cap Pouring, Cap Forming Removal)

Bent Pile Driving

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi /day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Large crawler crane	Offroad	1	8	300	0.29	-	1.3	0.2	1.6	0.1	0.1	0.0	816
Pile driver	Offroad	1	4	196	1	-	13.1	1.5	4.8	0.7	0.6	0.0	920
Shuttlelift carrydeck crane	Offroad	1	8	100	0.29	-	0.6	0.1	1.6	0.0	0.0	0.0	272
Flatbed truck	Onroad	8	-	-	-	40	3.5	0.1	0.4	0.0	0.0	0.0	1,128
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust										0.4	0.3		
Total							18.6	1.9	9.8	1.3	1.0	0.0	3,686

Emissions estimates are for one bent.

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])

See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Fugitive dust includes onroad vehicle travel on paved roads, brake and tire wear.

Parameter	Value		Basis/Assumption
Pile driving:	0.5	hr/pile	POLA staff: 0.25 hr/pile. Use 0.5 hr/pile for calcs.
Piles daily:	8	piles/day	POLA staff: 8 piles/day (1 hr/pile including setup)
Piles per bent:	16	piles/bent	POLA staff
Piles per truck	1	piles/truck	18 ton/pile (600 lb/ft * 60 ft), 25-ton flatbed truck capacity.
Flatbed trucks daily:	8	trucks/day	

Bent Cap Forming

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi /day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Large crawler crane	Offroad	1	4	300	0.29	-	0.7	0.1	0.8	0.0	0.0	0.0	408
Compressor	Offroad	4	4	122	0.42	-	2.2	0.2	5.5	0.1	0.1	0.0	962
Welder	Offroad	1	4	25	0.42	-	0.3	0.0	0.4	0.0	0.0	0.0	49
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust										0.3	0.2		
Total							3.3	0.4	8.1	0.4	0.3	0.0	1,969

Emissions estimates are for one bent.

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])

See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Fugitive dust includes onroad vehicle travel on paved roads, brake and tire wear.

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Bent (Pile Driving, Cap Forming, Cap Pouring, Cap Forming Removal)

Bent Cap Pouring

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi /day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Concrete boom truck	Onroad	1	-	-	-	30	0.3	0.0	0.0	0.0	0.0	0.0	113
Concrete boom pump	-	1	-	-	-	-	0.4	0.0	0.0	0.0	0.0	0.0	174.1
Concrete mixer truck	Onroad	16	-	-	-	30	4.7	0.1	0.5	0.0	0.0	0.0	1,767
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust										0.5	0.3		
Total							5.6	0.2	1.9	0.6	0.3	0.0	2,604

Emissions estimates are for one bent.

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])

See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Fugitive dust includes onroad vehicle travel on paved roads, brake and tire wear.

Parameter	Value		Basis/Assumption
Task duration:	7	days	POLA staff
Concrete total:	860	CY/bent	POLA staff (3/8/18): 7,684 CY total for piles. Split evenly over 9 bents.
Concrete daily:	123	CY/day	
Mixer truck capacity:	8	CY/truck	estimate
Mixer trucks daily:	16	trucks/day	

Boom truck concrete pump:

	Concrete pumping emission factors (grams/CY)						
	NOx	VOC	CO	PM10	PM2.5	SO2	GHG
Boom truck concrete pump emission factors	1.6	0.0	0.2	0.0	0.0	0.0	642.1

Factors derived from EMFAC2014 and fuel use by two 61-meter boom trucks while pumping (41.34-52.1 gal diesel to pump ~825 CY over 5 hours).

Ref:http://concretepumping.com/topic/schwing-runs-fuel-efficiency-test-4-pumps-pumping-into-each-other-for-5-hours

Bent Cap Forming Removal

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi /day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Large crawler crane	Offroad	1	4	300	0.29	-	0.7	0.1	0.8	0.0	0.0	0.0	408
Compressor	Offroad	1	4	122	0.42	-	0.5	0.1	1.4	0.0	0.0	0.0	240
Welder	Offroad	1	4	25	0.42	-	0.3	0.0	0.4	0.0	0.0	0.0	49
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust										0.3	0.2		
Total							1.6	0.3	3.9	0.4	0.2	0.0	1,248

Emissions estimates are for one bent.

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])

See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Fugitive dust includes onroad vehicle travel on paved roads, brake and tire wear.

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Girder Set Placement

Girder Set Placement

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi /day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Large crawler crane	Offroad	1	4	300	0.29	-	0.7	0.1	0.8	0.0	0.0	0.0	408
Compressor	Offroad	1	4	122	0.42	-	0.5	0.1	1.4	0.0	0.0	0.0	240
Welder	Offroad	1	4	25	0.42	-	0.3	0.0	0.4	0.0	0.0	0.0	49
Flatbed truck	Onroad	2	-	-	-	40	0.9	0.0	0.1	0.0	0.0	0.0	282
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust						-				0.3	0.2		
Total							2.5	0.3	4.0	0.4	0.3	0.0	1,529.5

Emissions estimates are for one girder set placement.

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])

See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Fugitive dust includes onroad vehicle travel on paved roads, brake and tire wear.

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Crane Demobilization

Crane Demobilization

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi /day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Large crawler crane	Offroad	1	0.5	300	0.29	-	0.1	0.0	0.1	0.0	0.0	0.0	51
40-ton crane	Offroad	1	0.5	164	0.29	-	0.1	0.0	0.2	0.0	0.0	0.0	28
Flatbed truck	Onroad	2		-	-	40	0.9	0.0	0.1	0.0	0.0	0.0	282
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust						-				0.3	0.2		
Total							1.1	0.1	1.8	0.4	0.2	0.0	910.6

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])

See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Fugitive dust includes onroad vehicle travel on paved roads, brake and tire wear.

POLA Pier 400/Terminal Island Railyard Enhancement Project
Construction Emissions - May 2018
Rail Track, Rail Track Turnout and Crossover

Rail Track

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi/ day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
10k forklift	Offroad	1	6	110	0.4	-	0.7	0.1	1.8	0.0	0.0	0.0	310
20k forklift	Offroad	1	6	160	0.2	-	0.5	0.1	1.3	0.0	0.0	0.0	225
40k forklift	Offroad	1	6	230	0.2	-	0.4	0.1	0.6	0.0	0.0	0.0	324
Compressor	Offroad	4	6	122	0.42	-	3.3	0.4	8.3	0.1	0.1	0.0	1,442
Welder	Offroad	1	6	25	0.42	-	0.5	0.1	0.6	0.0	0.0	0.0	74
Flatbed truck	Onroad	6	-	-	-	40	2.6	0.1	0.3	0.0	0.0	0.0	846
Haul truck (10-wheel)	Onroad	29	-	-	-	40	10.7	0.3	1.0	0.1	0.0	0.0	4,155
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust						-				1.0	0.6		
Total							18.7	1.0	15.3	1.3	0.9	0.1	7,925

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])
See Offroad Equipment Details and Onroad Vehicle Details sections for more info.
Fugitive dust includes material handling, onroad vehicle travel on paved roads and brake and tire wear.

Parameter	Value		Basis/Assumption
Task duration:	90	days	POLA staff
Rail track:	30,000	trackfeet	POLA staff (conceptual design): 30,079 TF.
Track daily:	333	TF/day	
	160	TF/truck	136 lb/ft/rail, 40 ft/rail lengths, max. 50,000 lb/truck
Flatbed trucks:	3	trucks/day	
Rail ties:	20,000	ties	1 tie every ~1.5 TF.
Ties daily:	222	ties/day	
Ties per truck:	83	ties/truck	600 lb/tie, max. 50,000 lb/truck
Flatbed trucks:	3	trucks/day	
Ballast:	9,700	CY	~1,700 CY ballast per track-mile.
Bulk density:	1.07	ton/CY	~79 lb/CF loose weight for railroad ballast.
Ballast daily:	115	tons/day	
Haul trucks:	8	trucks/day	max. ~15 tons per 10-wheel haul truck.
Subballast:	21,700	CY	POLA staff (conceptual design): 21,700 CY. Typicallly 12" below ballast.
Bulk density:	1.28	ton/CY	~95 lb/CF loose weight for dry gravel.
Subballast daily:	309	tons/day	
Haul trucks:	21	trucks/day	max. ~15 tons per 10-wheel haul truck.

Negligible fugitive PM10/PM2.5 from Ballast (ballast is washed rock)

Fugitive dust from subballast placement:

AP42, Section 13.2.4 (Aggregate Handling and Storage Piles, 11/2006):

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Rail Track, Rail Track Turnout and Crossover

PM10 (lb/ton) = 0.35 * (0.0032) * ((u / 5)^(1.3) / (M / 2)^(1.4))

PM2.5 (lb/ton) = 0.053 * (0.0032) * ((u / 5)^(1.3) / (M / 2)^(1.4))

where u = mean wind speed and M = material moisture content

Parameter	Value		Basis/Assumption
u:	6.4	mph	Long Beach avg wind speed = 6.4 mi/hr (AP42, Ch 7.1 (11/2006), Table 7.1-9)
M:	12	%	CalEEMod default 12%, "Cover" material. (Range: Dry = 2%, Moist = 15%, Wet = 50%)
PM10 :	0.00013	lb/ton	
PM2.5:	0.00002	lb/ton	

Rail Track Turnout and Crossover

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi /day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
10k forklift	Offroad	1	6	110	0.4	-	0.7	0.1	1.8	0.0	0.0	0.0	310
20k forklift	Offroad	1	6	160	0.2	-	0.5	0.1	1.3	0.0	0.0	0.0	225
40k forklift	Offroad	1	6	230	0.2	-	0.4	0.1	0.6	0.0	0.0	0.0	324
Compressor	Offroad	4	6	122	0.42	-	3.3	0.4	8.3	0.1	0.1	0.0	1,442
Welder	Offroad	1	6	25	0.42	-	0.5	0.1	0.6	0.0	0.0	0.0	74
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Total							5.5	0.7	14.0	0.2	0.2	0.0	2,924

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])

See Offroad Equipment Details and Onroad Vehicle Details sections for more info.

Fugitive dust includes material handling, onroad vehicle travel on paved roads and brake and tire wear.

POLA Pier 400/Terminal Island Railyard Enhancement Project
Construction Emissions - May 2018
Asphalt Paving and Fencing

Asphalt Paving and Fencing

							Max. Daily Construction Emissions (lb/day)						
Equipment/Activity	**Vehicle Type**	**#**	**Hr/ day**	**Hp**	**Load Factor**	**mi/ day**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Paver	Offroad	1	8	75	0.42	-	1.6	0.1	1.9	0.1	0.1	0.0	296
Roller	Offroad	1	8	49	0.38	-	1.1	0.1	1.3	0.0	0.0	0.0	175
Skid Steer Loader (Auger)	Offroad	1	8	61	0.37	-	1.1	0.1	1.4	0.0	0.0	0.0	212
Haul truck (10-wheel)	Onroad	7	-	-	-	40	2.6	0.1	0.2	0.0	0.0	0.0	1,003
Concrete mixer truck	Onroad	3	-	-	-	30	0.9	0.0	0.1	0.0	0.0	0.0	331
Water truck	Onroad	1	-	-	-	30	0.3	0.0	0.0	0.0	0.0	0.0	108
Worker commute	Onroad	20	-	-	-	40	0.1	0.1	1.4	0.0	0.0	0.0	550
Fugitive dust						-				0.5	0.3		
Paving Fugitive VOC						-		0.2					
Striping Fugitive VOC						-		5.7					
Total							7.7	6.3	6.4	0.7	0.5	0.0	2,674

Offroad equipment emissions = (#) * (Hr/day) * (Hp) * (Load Factor) * (Emission Factor [g/hp-hr])
See Offroad Equipment Details and Onroad Vehicle Details sections for more info.
Fugitive dust includes material handling, onroad vehicle travel on paved roads and brake and tire wear.

Parameter	Value		Basis/Assumption
Task duration:	45	days	POLA staff
Asphalt total:	4,513	tons	POLA staff (11/1/16 Class "C" cost estimate): 4,513 ton.
Asphalt paving rate:	100.3	tons/day	
Haul trucks:	7	truck/day	15-ton max. per 10-wheel haul truck.

Fugitive dust from soil handling/drop operations:

AP42, Section 13.2.4 (Aggregate Handling and Storage Piles, 11/2006):

PM10 (lb/ton) = 0.35 * (0.0032) * ((u / 5)^(1.3) / (M / 2)^(1.4))

PM2.5 (lb/ton) = 0.053 * (0.0032) * ((u / 5)^(1.3) / (M / 2)^(1.4))

where u = mean wind speed and M = material moisture content

Parameter	Value		Basis/Assumption
u:	6.4	mph	Long Beach avg wind speed = 6.4 mi/hr (AP42, Ch 7.1 (11/2006), Table 7.1-9)
M:	12	%	CalEEMod default 12%, "Cover" material. (Range: Dry = 2%, Moist = 15%, Wet = 50%)
PM10 :	0.00013	lb/ton	
PM2.5:	0.00002	lb/ton	

Emissions estimates conservatively assume no mitigation from watering.

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Asphalt Paving and Fencing

Paving fugitive VOC:

Parameter	Value		Basis/Assumption
VOC EF	2.62	lb/acre	CalEEMod default.
Asphalt quantity:	4513	tons	see above
Paving depth:	0.5	ft	POLA staff.
Asphalt density:	2	ton/CY	145 lb/cf typical
Paved area:	2.80	acres	
Paving days:	45	days	task duration
Paving rate:	0.06	acres/day	
VOC daily:	0.16	lb/day	

Striping VOC:

Parameter	Value		Basis/Assumption
VOC content:	100	g/L	SCAQMD VOC limit for traffic coatings is 100 g/L.
Coating usage:	12	gal/mile	estimate, per stripe.
Stripes:	2	stripes	estimate
Stripe length:	2	mi./stripe	estimate
Coating usage:	48	gal	
VOC:	40.1	lb	
Striping rate:	7	days	estimate
VOC daily:	5.73	lb/day	

Fencing:

Parameter	Value		Basis/Assumption
Duration	10	days	estimate
Fence length:	7000	ft	Estimate
Fence posts:	1168	posts	6 ft apart
Concrete:	0.18	CY/post	4' deep x 1.25' dia. Every 6 ft
	210.2	CY	
	21.0	CY/day	
Mixer truck capacity:	8	CY/truck	8 CY standard capacity truck
Mixer trucks daily:	3	trucks/day	

POLA Pier 400/Terminal Island Railyard Enhancement Project
Construction Emissions - May 2018
Offroad Diesel Equipment Details

Offroad Diesel Equipment Details

								Exhaust Emission Factor (g/hp-hr)						
Equipment Description	**CARB Off-Road Category (for Load Factor)**	**Load Factor**	**Engine Rating (hp)**	**Fuel**	**Engine Model Year**	**CHrs (hr)**	**Fuel Use (gal/hr)**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Loader	Rubber Tired Loaders	0.36	250	DSL	2015	5,000	4.65	0.69	0.13	1.04	0.036	0.033	5.0E-03	532
Excavator	Excavators	0.38	164	DSL	2015	5,000	3.22	1.20	0.13	3.06	0.055	0.051	5.0E-03	532
Grader	Graders	0.41	183	DSL	2015	5,000	3.88	0.69	0.13	1.04	0.036	0.033	5.0E-03	532
Large crawler crane	Cranes	0.29	300	DSL	2015	5,000	4.50	0.87	0.13	1.01	0.042	0.039	5.0E-03	532
Pile driver	None (pile driver, assume 100% load factor)	1.00	196	DSL	1995	1,250	11	7.55	0.87	2.79	0.404	0.371	5.0E-03	532
40-ton crane	Cranes	0.29	164	DSL	2015	5,000	2.46	1.20	0.13	3.06	0.055	0.051	5.0E-03	532
Compressor	Other Construction Equipment	0.42	122	DSL	2015	5,000	2.65	1.20	0.13	3.06	0.055	0.051	5.0E-03	532
Welder	Other Construction Equipment	0.42	25	DSL	2015	5,000	0.54	3.44	0.36	4.10	0.112	0.103	5.0E-03	532
Office trailer generator	Rough Terrain Forklifts	0.40	25	DSL	2015	5,000	0.52	3.44	0.36	4.10	0.112	0.103	5.0E-03	532
Paver	Pavers	0.42	75	DSL	2015	5,000	1.63	2.90	0.13	3.46	0.225	0.207	5.0E-03	532
Roller	Rollers	0.38	49	DSL	2015	5,000	0.96	3.44	0.36	4.10	0.112	0.103	5.0E-03	532
Skid Steer Loader (Auger)	Skid Steer Loaders	0.37	61	DSL	2015	5,000	1.17	2.87	0.27	3.46	0.052	0.048	5.0E-03	532
10k forklift	Rough Terrain Forklifts	0.40	110	DSL	2015	5,000	2.27	1.20	0.13	3.06	0.055	0.051	5.0E-03	532
20k forklift	Forklifts	0.20	160	DSL	2015	5,000	1.65	1.20	0.13	3.06	0.055	0.051	5.0E-03	532
40k forklift	Forklifts	0.20	230	DSL	2015	5,000	2.38	0.69	0.13	1.04	0.036	0.033	5.0E-03	532
Shuttlelift carrydeck crane	Cranes	0.29	100	DSL	2015	5,000	1.50	1.20	0.13	3.06	0.055	0.051	5.0E-03	532

Notes:
Load factors from CARB's 2010 OFFROAD model (Table D-7: https://www.arb.ca.gov/regact/2010/offroadlsi10/offroadappd.pdf)
All offroad diesel construction equipment assumed to be 5 years old or newer at start of construction in 2020 (exceptIon: pile driver conservatively modeled as a 25-year old engine).
NOx, THC, CO, and PM10 diesel emission factors from CARB's "2017 Off-road Diesel Emission Factors" (https://www.arb.ca.gov/msei/ordiesel/ordas_ef_fcf_2017_v7.xlsx)
VOC (ROG) calculated from THC assuming VOC = 1.21 * THC for diesel (CARB, https://www.arb.ca.gov/msei/ordiesel/rog_tog_hcratio.xls).
PM2.5 calculated from PM10 assuming PM2.5 = 0.92 * PM10 for diesel (CARB, https://www.arb.ca.gov/msei/ordiesel/pm25_pm10reference.pdf).
SO2 EF calculated from fuel sulfur content and engine BSFC. Details below.
CO2 EF calculated from EPA CO2 EF for mobile diesel sources and engine BSFC. Details below.
CH4 and N2O calculated from EPA CH4 and N2O factors for diesel construction equipment and engine BSFC. Details below.
Fuel used estimated based on GHG emission factor or equipment specs.

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Offroad Diesel Equipment Details

CHrs = operating hours accumulated on the equipment. Used to estimate emission factor deterioration rates (for NOx, VOC, CO, PM10) due to equipment wear/aging.

EF = Zh + Dr * CHrs, where:

Zh = Zero-hour emission rate, when equipment is new (g/hp-hr) - from CARB's "2017 Off-road Diesel Emission Factors" ("ordas_ef_fcf_2017_v7.xlsx")

Dr = Deterioration rate or increase in Zh emission rate (g/hp-hr2) - from CARB's "2017 Off-road Diesel Emission Factors" ("ordas_ef_fcf_2017_v7.xlsx")

CHrs = cumulative hours or total number of hours accumulated on the equipment (hr)

Parameter	Value		Basis
Annual usage:	1000	hr/yr	all equipment except pile driver (which assumes 2 hr/day, 125 days/yr usage for 5 years)

CHrs total = CHrs * (2020 - Engine Model Year)

Deterioration rates vary by engine size (hp).

SO2 emission factor calculated from sulfur content of fuel and estimated engine BSFC:

Parameter	Value		Basis
Engine BSFC:	0.367	lb/hp-hr	CARB OFFROAD2011 model. Assumes same BSFC across all HP ranges.
Diesel max. sulfur content:	15	ppmw as S	ULSD max. is 15 ppmw as S.
SO2 EF:	0.005	g/hp-hr	Calc

GHG emission factor:

Parameter	Value		Basis
Engine BSFC:	0.367	lb/hp-hr	CARB OFFROAD2011 model. Assumes same BSFC across all HP ranges.
CO2 EF for diesel:	10.21	kg/gal	Table A-1, EPA Mobile Combustion CO2 Emission Factors, https://www.epa.gov ("emission-factors_nov_2015_v2.pdf")
CO2 EF:	527.8	g/hp-hr	diesel density = 7.1 lb/gal.
CH4 EF	0.57	g/gal	Table 5, EPA Mobile Combustion CH4 and N2O Emission Factors for Non-Road Vehicles
	0.0295	g/hp-hr	diesel density= 7.1 lb/gal, BSFC=0.367 lb/hp-hr
N2O EF:	0.26	g/gal	Table 5, EPA Mobile Combustion CH4 and N2O Emission Factors for Non-Road Vehicles
	0.0134	g/hp-hr	diesel density 7.1 lb/gal, BSFC=0.367 lb/hp-hr
CO2 GWP	1		2014 IPCC Fifth Assessment Report (AR5), http://www.ipcc.ch/report/ar5/
CH4 GWP:	28		2014 IPCC Fifth Assessment Report (AR5), http://www.ipcc.ch/report/ar5/
N2O GWP:	265		2014 IPCC Fifth Assessment Report (AR5), http://www.ipcc.ch/report/ar5/
GHG EF:	532	g/hp-hr	GHG = CO2e = (CO2 GWP)*CO2 + (CH4 GWP)*CH4 + (N2O GWP)*N2O

Diesel pile hammer:

Diesel fuel usage:	11	gal/hr	Delmag spec sheet (11 gal/hr for 15,000 kg Delmag D150).
BSFC:	0.4	lb/hp-hr	estimate. Assumes lower fuel efficiency than typical 4-stroke diesel engine.
Hp estimate:	196	hp	hp = (Diesel usage [gal/hr]) * (7.1 [lb/gal]) / (BSFC [lb/hp-hr])

POLA Pier 400/Terminal Island Railyard Enhancement Project
Construction Emissions - May 2018
Onroad Vehicle Details

Onroad Vehicle Details

							Daily Emissionsm, excluding Fugitive Dust (lb/day/vehicle)							Fugitive dust (lb/day/veh)	
Vehicle Description	**EMFAC Vehicle Class**	**Engine Model Year**	**Fuel**	**Fuel Use (gal/day)**	**Distance (mile/ day)**	**Idling (min/ day)**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**	**PM10**	**PM2.5**
Haul truck (10-wheel)	T7 Single	Aggregated	DSL	6.36	40	10	0.368	0.009	0.035	0.002	0.002	0.001	143.3	0.01808	0.01131
Flatbed truck	T7 tractor	Aggregated	DSL	6.26	40	10	0.432	0.013	0.052	0.002	0.002	0.001	141.0	0.01808	0.01131
Concrete boom truck	T7 Single	Aggregated	DSL	5.02	30	40	0.308	0.007	0.030	0.001	0.001	0.001	113.0	0.01356	0.00848
Concrete mixer truck	T7 Single	Aggregated	DSL	4.91	30	25	0.294	0.007	0.028	0.001	0.001	0.001	110.5	0.01356	0.00848
Water truck	T7 Single	Aggregated	DSL	4.79	30	10	0.279	0.007	0.027	0.001	0.001	0.001	107.9	0.01356	0.00848
Worker commute	LDA	Aggregated	GAS	1.42	40	0	0.006	0.003	0.070	0.000	0.000	0.000	27.5	0.01499	0.00816

								Fugitive Dust					
	Exhaust Emission Factors (grams/mile)							Brake and Tire Wear Factors (grams/mile)				Road Dust (grams/mile)	
Vehicle Description	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**	**PM10-Tire Wear**	**PM10-Brake Wear**	**PM2.5-Tire Wear**	**PM2.5-Brake Wear**	**PM10**	**PM2.5**
Haul truck (10-wheel)	4.066	0.095	0.387	0.020	0.019	0.015	1605	0.036	0.062	0.009	0.026	0.16	0.04
Flatbed truck	4.782	0.141	0.574	0.023	0.022	0.015	1578	0.036	0.062	0.009	0.026	0.16	0.04
Concrete boom truck	4.066	0.095	0.387	0.020	0.019	0.015	1605	0.036	0.062	0.009	0.026	0.16	0.04
Concrete mixer truck	4.066	0.095	0.387	0.020	0.019	0.015	1605	0.036	0.062	0.009	0.026	0.16	0.04
Water truck	4.066	0.095	0.387	0.020	0.019	0.015	1605	0.036	0.062	0.009	0.026	0.16	0.04
Worker commute	0.061	0.015	0.729	0.002	0.002	0.003	309	0.008	0.037	0.002	0.016	0.16	0.04

	Idling Emission Factors (g/hr)							Startup/Hotsoak/Runloss Emission Factors (g/trip/vehicle)						
Vehicle Description	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**	**NOx**	**VOC**	**CO**	**PM10**	**PM2.5**	**SO2**	**GHG**
Haul truck (10-wheel)	26.86	0.739	2.940	0.015	0.014	0.045	4669	0	0	0	0	0	0	0
Flatbed truck	29.17	0.864	3.448	0.010	0.009	0.049	5090	0	0	0	0	0	0	0
Concrete boom truck	26.86	0.739	2.940	0.015	0.014	0.045	4669	0	0	0	0	0	0	0
Concrete mixer truck	26.86	0.739	2.940	0.015	0.014	0.045	4669	0	0	0	0	0	0	0
Water truck	26.86	0.74	2.940	0.015	0.014	0.045	4669	0	0	0	0	0	0	0
Worker commute	0	0	0	0	0	0	0	0.091	0.449	1.398	0.0024	0.0022	0.0007	63.0

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Onroad Vehicle Details

Notes:

NOx, VOC, CO, PM10, PM2.5, SO2, and CO2 emission factors (except road dust) from CARB's EMFAC2014 (v1.0.7) model for calendar year 2020 and assume aggregated speeds and model years.

Road dust emission factors calculated using EPA's AP42 entrained road dust equation (see below).

Daily emissions (DSL vehicles) = (miles/day) * (EF [g/mile]) + (idling time [min/day]) / (60 [min/hr]) * (Idling EF [g/hr])

Daily emissions (GAS vehicles) = (miles/day) * (EF [g/mile]) + (2 [trips/day]) * (EF [g/trip/vehicle])

For worker commute vehicles, 2 trips/day assumed for startup/hotsoak/runloss emissions.

LDA = Light-duty automobile

CalEEMod default Home-Work trip length in South Coast Air Basin is 19.8 miles (Rural) and 14.7 miles (Urban). Emissions estimates assume 20 miles (40 miles roundtrip).

Fuel use estimated from GHG emissions.

Fugitive dust for PAVED roads:

EPA's AP42, Chapter 13.2.1 (Paved Roads, 1/2011):

PM10 EF (g/mile) = 1 * (sL)^(0.91) * (W)^(1.02)

PM2.5 EF (g/mile) = 0.25 * (sL)^(0.91) * (W)^(1.02)

where sL = surface silt loading (g/m2), W = average vehicle weight (ton)

Parameter	Value		Basis/Assumption
sL:	0.050	g/m2	Road mix estimate for Los Angeles Co.: 20% Freeway @ 0.015 g/m2 , 50% Major/Collector @ 0.013 g/m2. 30% Local @ 0.135 g/m2. sL from CARB, Methodology 7.9 (Entrained Road Travel, Paved Road Dust) Nov 2016, Table 3, https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2016.pdf
W:	2.4	tons	CalEEMod v2016.3.2 default. Estimated avg weight of ALL vehicles traveling on roads.
PM10:	0.160	g/mile	
PM2.5:	0.040	g/mile	

Per AP42, paved road EF Is applied using fleet avg weight of ALL vehicles traveling on road (not applied by vehicle weight class).

Road dust emissions assume no credit/reduction for precipitation.

Fugitive dust for UNPAVED roads:

None for South Coast Air Basin, per CalEEMod Appendix D (Table 4.1 Road Characteristics): South Coast Air Basin default is 100% paved roads for Construction Worker, Construction Hauling, and Construction Vendor trips.

GHG EF:

GHG = CO2e = (CO2 GWP)*CO2 + (CH4 GWP)*CH4 + (N2O GWP)*N2O

GWP = Global Warming Potential

	Value	Basis
CO2 GWP	1	2014 IPCC Fifth Assessment Report (AR5), http://www.ipcc.ch/report/ar5/
CH4 GWP:	28	2014 IPCC Fifth Assessment Report (AR5), http://www.ipcc.ch/report/ar5/
N2O GWP:	265	2014 IPCC Fifth Assessment Report (AR5), http://www.ipcc.ch/report/ar5/

CH4 and N2O:

Vehicle type	CH4 (g/mile)	N2O (g/mile)
DSL	0.0051	0.0048
GAS	0.0358	0.0473

Table B-1, https://www.epa.gov/sites/production/files/2016-03/documents/mobileemissions_3_2016.pdf

DSL EFs are for Medium and Heavy Duty Diesel and assumed to apply to all on-road diesel vehicles identified above.

GAS EFs are for 1995 model year gasoline passenger car (25-year old vehicle is conservative assumption) and are assumed to apply to all on-road gasoline vehicles identified above.

POLA Pier 400/Terminal Island Railyard Enhancement Project

Construction Emissions - May 2018

Onroad Vehicle Details

CO2 emission factor:

	Value		Basis
Gasoline CO2 EF:	8.78	kg/gal	Table 2, EPA Mobile Combustion CO2 Emission Factors, https://www.epa.gov/sites/production/files/2016-09/documents/emission-factors_nov_2015_v2.pdf
Diesel CO2 EF:	10.21	kg/gal	Table A-1, EPA Mobile Combustion CO2 Emission Factors, https://www.epa.gov/sites/production/files/2016-09/documents/emission-factors_nov_2015_v2.pdf

Operation

Terminal and Rail Capacity Analyses

A container terminal capacity analysis was conducted for the Pier 400 container terminal as a whole (including APMT terminal and former CUT terminal). To estimate terminal capacity, the POLA and most ports in the world use a methodology that relies on two capacity models, one that analyzes the terminals' container yard (CY) capacity and one that analyzes the terminals' berth capacity (a terminal could be berth constrained or backlands constrained or evenly balanced between the two). Key model variables include: the length of berth, number/size of berth cranes, size of vessels, berth crane productivity, size of the storage area, how the containers are stored (i.e., chassis vs. grounded) and how long the containers remain in storage (container dwell time), and operating hours for the berth and the yard. This analysis determined that the wharf capacity is less than the CY capacity, and thus is the governing capacity. The terminal capacity is estimated to be 4.852 million twenty-foot equivalent (TEU) per year.

An analysis was also conducted to estimate the increase in capacity and commensurate use of the APMT on-dock railyard. The on-dock railyard as a whole is comprised of the existing loading/working tracks in the APMT terminal, and the storage tracks located on the Pier 400 Transportation Corridor, in which the expansion of the latter component (by 31,000 lineal feet of track) is the proposed Terminal Island (TI) Railyard Enhancement project. The proposed improvements will increase the railyard capacity and ultimately commensurate use by approximately 525,200 TEU/year, under year 2040 conditions. Hence, these same amount of containers will shift from off-dock railyards to the on-dock railyard. This shifting of off-dock to on-dock use potentially reduces the dwell time of these same containers in the APMT terminal, by a day or so, which theoretically could increase the container yard capacity a nominal amount. However, since the APMT terminal limiting capacity is that of the wharf, the increased on-dock railyard use will not increase the total terminal volume. Thus, the net effect of the proposed storage tracks is the shifting about 525,200 TEU/year from off-dock yards to the APMT on-dock yard (by the year 2040). The following table summarizes the resultant terminal and on-dock volumes analyzed for two horizon years.

Table 1 - Container Volumes

	Total Volume	On-dock Volume
Year 2021 w/o project	2,879,500	730,300
Year 2021 w/project	2,879,500	891,000
Year 2040 w/o project	4,852,200	1,037,400
Year 2040 w/project	4,852,200	1,562,600

Truck Traffic Analysis

The capacity/use increase of the Pier 400 on-dock railyard will result in the shifting of 525,250 TEU/year from the following three off-dock railyards: Union Pacific Railroad (UP) Intermodal Container Transfer Facility (ICTF); UP East Los Angeles (ELA) yard on East Washington Boulevard in the City of Commerce; and the Burlington Northern-Santa Fe Railway (BNSF) Hobart yard located on Washington Boulevard in the City of Vernon. Using Year 2021 and Year 2040 container volume projections on-dock railyard capacity increases/utilization, the truck trip estimates and reductions have been quantified using the Ports of Los Angeles and Long Beach container trip generation model, called "QuickTrip." This model has been used on all POLA environmental documents since 2002, and is constantly updated and enhanced. The trip generation model and direct output is also used by the Southern California Association of Governments (SCAG) in their federally-required Regional Transportation Plan (RTP).

Using comprehensive port-specific truck trip generation and the POLA's travel demand model (Port Area Travel Demand Model, PortTAM), the TI Railyard Enhancement project truck volumes on the regional roadway system were produced for year 2021 and 2040 conditions, without and with the expanded TI Railyard. The PortTAM is a detailed, focus model of SCAG's RTP model, and includes truck and/or auto trips for: all container terminals in the POLA and Port of Long Beach (POLB); all other cargo terminals and facilities within the POLA/POLB boundaries; off-dock intermodal railyards owned and operated by the UPRR and BNSF railroads; ILWU labor dispatch halls; Port of Los Angeles World Cruise Center; Ports 'O Call; the Carnival Cruise terminal; and the Queen Mary. Since its inception, POLA/POLB have constantly updated PortTAM to account for: updated POLA/POLB cargo forecasts and resultant truck and auto trips; land use changes/forecasts and specific development projects within a 3-5 mile radius of the Ports; constant logistics operations research that affects

truck trips, such as on-dock and of-dock rail mode splits, empty container management, chassis management, dual transactions in the terminals, street-turns, and terminal operating hours; roadway system changes; and of course SCAG RTP model updates every four years, when they are released publically. The logistics elements represent the structure of the aforementioned "Quicktrip model. SCAG also updates their RTP model to incorporate the POLA/POLB PortTAM updates. The POLA's' models are also contained in other agency models and project, such as (but not limited to) the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP), the Gateway Cities Council of Governments' Strategic Transportation Plan, and the ongoing Caltrans/Los Angeles County Metropolitan Transportation Authority I-710 Corridor Project I-710 Corridor Project Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (State of California, July 2017).

The difference in the PortTAM model results for the two analysis scenarios represents the shifting of containers from the off-dock railyards to the on-dock railyards. The shifted amounts from the three railyards were computed using detailed historical shares of off-dock volumes between the UP and BNSF. This data yielded the following shares for the shitted containers: BNSF – 50%, UP ICTF - 45%, UP ELA – 5%. These shares have been used for many years, including recent POLA environmental documents, the I-710 EIR/EIS, and the SCAG RTP. This shifting of containers will remove truck trips and reduce truck-miles traveled (TMT), which in turn reduces delay and increases vehicle-hours traveled (VHT) for all other motorists, as follows:

TI Railyard Enhancement
Daily Reductions
Truck Trips, Truck Miles-Traveled &
Hours-Traveled (for all motorists)

Year	Trips	Miles	Hours
2021	-560	-7,220	-350
2040	-1,520	-19,720	-7,980

To yield reasonable and conservative results, an increment of only 161,000 TEU/year in on-dock volume was assumed under year 2021 conditions. This value was estimated considering intermodal growth and actual volumes at the AMPT railyard over the last ten years. The PortTAM model was then used to produce the TMT and VHT results.

Rail Analysis. The shift in containers being moved via off-dock yards to the APMT on-dock railyard will result in a small increase in on-dock rail volumes moving to/from the APMT railyard and the northern end of the Alameda Corridor, just east of both the UP ELA yard and the BNSF Hobart yard. There will be no net increase rail volumes easterly of these locations on the UPRR and BNSF rail lines because these shifted containers would have been otherwise loaded/unloaded onto trains in the ELA and Hobart railyards without the proposed TI railyard project. Similarly, there will also be a small increase in train volumes between the UP ICTF and the APMT railyard, (in addition to the shift from the ELA and Hobart yards).

The shift in containers being moved via from off-dock yards to the APMT on-dock railyard will result in a small increase in on-dock rail volumes and resulting locomotive emissions, between the Terminal Island Railyard The rail volumes were estimated for year 2021 and year 2040 conditions using the following basic factors:

- Total on-dock volumes, not just the estimated increment
- average rail car length (depends on mix of cars of varying lengths that make up the trains)
- locomotive length
- number of locomotives per train for different train lengths
- slot utilization (percentage of rail car capacity actually used by containers); e.g.; a five-well railcar can hold 10 double-stacked containers; typical utilization is about 95% on average for eastbound trains
- market-wise distribution of trains by length (percentage of trains that are 6,000 feet, 8,000 feet, 10,000 feet, and 12,000 feet long, including locomotives);
- switching movements (less than full unit trains) to/from the TI Railyard storage/staging yard (only uses one locomotive).

- proportion of shifting from ELA yard, ICTF, & Hobart yard

There are no at-grade rail-roadway crossings between the POLA and the ELA and Hobart yards. Thus, the small number of additional on-dock train movements will not have any traffic impacts. The TI Railyard project will also improve the movement of trains on Terminal Island, thus reducing train delays (operating hours), but this particular benefit has not been quantified.

.

Emissions and Noise. The reduced VMT was used to compute reduced emissions. The net emission reductions also account for the low amount of increased train emissions due to the shifting from use of off-dock to on-dock trains discussed above. The emission reductions are understated as they only account for the reduced truck trips and increased locomotives, but not the reduced emissions attributable to the reduced travel time of all other motorists. The TI Railyard Enhancement also reduces freeway noise as a result of fewer truck trips to off-dock facilities.

The emissions analysis includes criteria pollutants and GHGs, for peak day and annual time periods, for 2021 and 2040, for the four scenarios above. Emission factors for exhaust, tire wear, and brake wear by speed and were generated by the California Air Resources Board EMFAC2014 model. The truck emissions account for the future truck mix (truck age distribution), accounting for turnover of existing trucks over 20 years, as estimated by the Ports and their consultants. These detailed truck mix forecasts account for actual, existing truck information collected via the Ports' annual emissions inventory (EI) work (*https://www.portoflosangeles.org/pdf/2016_Air_Emissions_Inventory.pdf*) and these emission calculation methodologies were also used in the POLA/POLB's recently approved 2017 Clean Air Action Plan (http://www.cleanairactionplan.org). **Such fleet forecasts were developed in concert with the Ports' EI working group that includes EPA, CARB, and SCAQMD**. The PM10 and PM2.5 emissions also include the contribution from re-entrained road dust, based on emission factors derived from the CARB Emission Inventory Chapter 7.9, "Miscellaneous Process Methodology, Entrained Road Travel, Paved Road Dust" (November 2016). Moving emissions also depend on the estimated VMT and average daily speed on each analyzed roadway segment that have reduced truck trips between the APMT terminal and the off-dock railyards.

The locomotive emission estimates utilized detailed train speeds generated via the POLA's "Rail Traffic Controller" (RTC) simulation model, for the years 2021 and 2040 conditions. This model is utilized universally by Class I railroads, ports, and commuter passenger rail agencies throughout North America. Varying train speeds generated by the RTC model were used for various segments inside and outside the POLA, including along the Alameda Corridor.

Assumptions Used in the Locomotive Emission Calculations

Parameter	Value	Unit of Measure	Reference
Line Haul Fuel Consumption Rate	20.8	hp-hr/gal	Inventory of Air Emissions CY 2016, Page 46; EPA Office of Transportation and Air Quality, "Emission Factors for Locomotives", EPA-420-F-09-025, April 2009.
Global Warming Potential, CO2	1	(unitless)	EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015, April 2017
Global Warming Potential, CH4	25	(unitless)	EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015, April 2017
Global Warming Potential, N2O	298	(unitless)	EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015, April 2017
Average POLA Train Composition	494	TEUs	Inventory of Air Emissions CY 2013, Page 149
Average POLA Train Composition	274	containers	Inventory of Air Emissions CY 2013, Page 160
Average POLA Train Weight	7276	gross tons	Inventory of Air Emissions CY 2013, Page 160
Average POLA Train Weight per TEU	14.7	gross tons/TEU	Calculated from Average Train Composition and Average Train Weight
Diesel engine conversion factor, HC to VOC	1.053	(unitless)	EPA. Conversion Factors for Hydrocarbon Emission Components. Report No. NR-002d. EPA-420-R-10-015. July 2010.
Conversion Factor for Diesel Engines, PM10 to PM2.5	0.92	(unitless)	SCAQMD, Updated CEIDARS Table with PM2.5 Fraction, Appendix A of PM2.5 Significance Thresholds and Calculation Methodology. http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.
Diesel fuel density	7.05	lb/gal	POLA 2013 Air Emissions Inventory, pg. 151 (expressed as 3,200 g/gal)
Ratio Annual/Peak Day for Rail, 2021 & 2041	327.1	(unitless)	Cambridge Systematics. Email from Chiranjivi Bhamidipati. File "DR1_APMT_INFRA_Grant_RailTraffic_CSBv7_20170922.xlsx". September 22, 2017.
Ratio Annual/Peak Day for Trucks, 2021 & 2041	247.0	(unitless)	China Shipping Draft Supplemental EIR, 2017. Appendix B1, Tables B1-148 and B1-244. Assume the peaking factors in 2021 and 2041 are the same as years 2023 and 2045. Confirmed by Ramesh Thammiraju/CSI, telephone conversation, 9/12/17.
Line Haul Fuel Productivity Factor, 2011	696	gross ton-miles/gal	Source: ARB, Locomotive Inventory Update: Line Haul Activity (2014). South Coast Air Basin.
Line Haul Fuel Productivity Factor, 2012	703	gross ton-miles/gal	Calculated. Assume that the productivity factor will increase by 1% each year until 2050. Source: ARB, Locomotive Inventory Update: Line Haul Activity (2014).
Line Haul Fuel Productivity Factor, 2013	710	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2014	717	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2015	724	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2016	732	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2017	739	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2018	746	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2019	754	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2020	761	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2021	769	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2022	777	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2023	784	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2024	792	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2025	800	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2026	808	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2027	816	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2028	824	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2029	833	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2030	841	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2031	849	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2032	858	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2033	866	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2034	875	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2035	884	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2036	893	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2037	901	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2038	911	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2039	920	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2040	929	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2041	938	gross ton-miles/gal	Calculated

Line Haul Fuel Productivity Factor, 2042	947	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2043	957	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2044	967	gross ton-miles/gal	Calculated
Line Haul Fuel Productivity Factor, 2045	976	gross ton-miles/gal	Calculated

Loco Route Nodes (from BEEST)

Source for segment endpoints: Emails from Kerry Cartwright/POLA, 8/16/17, 9/5/17, and 9/19/17.

Segment Length (meters): 12453.5
Segment Length (miles): 7.74

Segment Length (meters): 28548.6
Segment Length (miles): 17.74

Train Route for Segment 1: APMT On-dock Yard to ICTF Jct. (South of ICTF Yard)

UTM X (m)	UTM Y (m)	Distance (m)
384518.0	3735169.8	--
384500.4	3735226.7	59.5
384489.1	3735271.3	46.0
384482.3	3735306.8	36.1
384477.5	3735351.7	45.2
384471.9	3735382.0	30.8
384463.1	3735407.9	27.4
384385.9	3735638.2	242.9
384373.4	3735676.6	40.4
384369.2	3735695.9	19.7
384366.8	3735733.9	38.1
384371.7	3735773.6	40.1
384383.9	3735812.5	40.7
384406.2	3735852.5	45.7
384437.3	3735886.7	46.3
384472.9	3735911.9	43.6
384514.5	3735937.0	48.6
384672.9	3736034.3	185.9
384766.2	3736096.0	111.9
384883.2	3736168.2	137.4
384962.4	3736221.6	95.5
385047.9	3736291.9	110.7
385073.8	3736319.5	37.9
385128.2	3736384.1	84.5
385153.6	3736422.1	45.8
385174.2	3736470.1	52.1
385183.6	3736522.6	53.4
385180.7	3736630.6	108.0
385178.6	3736698.4	67.8
385166.9	3736818.5	120.7
385154.0	3736989.1	171.1
385148.8	3737044.3	55.5
385131.4	3737184.4	141.2
385110.5	3737458.9	275.2
385093.6	3737669.8	211.6
385083.4	3737893.9	224.3
385087.3	3737944.9	51.2
385102.1	3738027.5	83.8
385147.8	3738234.5	212.0
385165.2	3738299.1	66.9
385223.1	3738411.1	126.1
385306.7	3738546.3	159.0
385381.2	3738666.9	141.7
385412.4	3738743.5	82.7
385431.3	3738830.4	89.0
385436.5	3738908.5	78.3
385434.8	3738972.6	64.1
385428.5	3739123.8	151.3

Train Route for Segment 2: ICTF Jct. to L.A. Downtown (North of ICTF Yard)

UTM X (m)	UTM Y (m)	Distance (m)
387286.6	3746698.2	--
387306.6	3746790.9	94.9
387332.9	3746960.3	171.5
387371.5	3747225.6	268.0
387377.4	3747255.3	30.2
387391.7	3747302.3	49.1
387419.7	3747369.3	72.6
387456.6	3747455.2	93.5
387471.8	3747496.3	43.8
387483.4	3747538.4	43.6
387498.2	3747631.6	94.4
387534.6	3747840.9	212.4
387550.0	3747944.5	104.8
387557.8	3748042.8	98.7
387559.9	3748166.9	124.1
387553.2	3748278.3	111.6
387542.8	3748376.9	99.1
387517.9	3748523.3	148.5
387496.3	3748654.0	132.5
387458.6	3748954.1	302.5
387414.6	3749350.9	399.3
387378.8	3749635.0	286.3
387296.9	3750312.4	682.3
387242.8	3750772.7	463.5
387187.6	3751240.6	471.1
387138.9	3751654.6	416.8
387086.3	3752129.8	478.1
387032.0	3752553.7	427.3
386979.1	3753006.0	455.5
386929.3	3753425.2	422.1
386841.0	3754171.7	751.6
386743.8	3754991.5	825.6
386645.6	3755819.2	833.5
386534.0	3756634.5	822.9
386472.5	3757001.4	372.0
386402.7	3757398.4	403.1
386321.2	3757876.0	484.5
386223.1	3758448.8	581.2
386134.2	3758966.8	525.6
386051.7	3759445.2	485.4
385981.0	3759878.9	439.5
385937.7	3760164.5	288.8
385874.9	3760536.5	377.2
385793.7	3761009.4	479.8
385718.3	3761446.0	443.0
385676.2	3761702.5	259.9
385661.0	3761858.9	157.2
385638.8	3762266.1	407.8

385420.2	3739288.8	165.2
385408.7	3739563.5	275.0
385394.1	3739829.3	266.2
385387.2	3739898.0	69.0
385371.7	3739950.3	54.6
385352.9	3739989.6	43.5
385319.0	3740042.5	62.8
385251.1	3740146.4	124.1
385218.9	3740200.9	63.3
385202.6	3740238.3	40.8
385194.1	3740281.9	44.4
385195.1	3740323.5	41.6
385205.5	3740374.0	51.5
385230.6	3740428.1	59.6
385280.8	3740524.7	108.9
385323.8	3740599.9	86.6
385352.1	3740658.7	65.3
385372.4	3740709.9	55.1
385396.0	3740780.8	74.7
385424.7	3740877.2	100.6
385440.1	3740925.9	51.0
385461.6	3741001.7	78.9
385510.0	3741154.4	160.1
385544.4	3741261.0	112.1
385560.3	3741303.6	45.4
385580.5	3741354.0	54.3
385599.7	3741411.0	60.1
385653.8	3741583.5	180.8
385686.2	3741694.4	115.5
385720.9	3741818.6	129.0
385758.9	3741937.4	124.7
385805.4	3742084.1	153.9
385867.4	3742274.2	200.0
385933.4	3742481.6	217.7
385992.2	3742659.3	187.1
386038.5	3742796.6	144.9
386096.8	3742967.3	180.4
386167.1	3743178.0	222.1
386194.7	3743273.1	99.0
386193.6	3743261.5	11.6
386203.2	3743302.1	41.7
386209.7	3743340.5	39.0
386211.6	3743364.3	23.8
386214.2	3743415.3	51.1
386216.0	3743474.3	59.0
386219.3	3743537.4	63.2
386224.0	3743581.1	43.9
386229.3	3743611.1	30.5
386236.2	3743639.4	29.2
386244.5	3743669.1	30.8
386252.5	3743693.3	25.5
386288.2	3743803.0	115.3
386306.2	3743856.0	56.0
386324.3	3743900.2	47.8
386344.5	3743940.7	45.3

385611.3	3762732.6	467.3
385587.9	3763116.4	384.5
385559.3	3763567.8	452.3
385535.8	3764147.2	579.9
385537.1	3764250.7	103.5
385562.8	3764330.2	83.5
385601.0	3764399.5	79.2
385653.2	3764458.6	78.9
385754.7	3764530.5	124.3
385962.9	3764670.0	250.6
386130.1	3764783.1	201.8
386227.5	3764829.6	108.0
386312.1	3764852.1	87.5
386405.2	3764857.5	93.3
386535.0	3764858.4	129.7
386625.0	3764861.0	90.1
386817.9	3764863.3	193.0
387003.0	3764860.6	185.0
387111.0	3764861.6	108.0
387162.7	3764865.7	51.9
387210.1	3764878.4	49.1
387298.1	3764911.4	94.0
387342.4	3764921.1	45.3
387382.2	3764923.7	39.8
387419.8	3764920.1	37.8
387558.5	3764899.6	140.3
387691.3	3764873.4	135.4
387768.8	3764850.3	80.8
387836.5	3764819.1	74.5
387978.0	3764753.3	156.1
388186.5	3764654.9	230.5
388476.9	3764519.2	320.6
388660.5	3764434.7	202.1
388773.2	3764391.3	120.8
388977.6	3764331.9	212.8
389123.2	3764306.6	147.8
389376.9	3764277.1	255.5
389653.1	3764245.7	278.0
389961.4	3764211.0	310.2
390253.3	3764177.0	293.8
390571.6	3764141.0	320.3
390876.4	3764105.7	306.8
391198.4	3764069.3	324.1
391532.6	3764030.3	336.5
391806.4	3764000.5	275.4
392078.6	3763968.1	274.1
392402.9	3763930.2	326.6
392699.7	3763897.1	298.6
392879.0	3763876.8	180.5
393152.5	3763849.2	274.9
393186.7	3763844.9	34.5
393533.1	3763805.0	348.6
393990.5	3763752.5	460.4
394490.6	3763695.0	503.4
395003.1	3763636.7	515.9

386366.4	3743977.9	43.1
386390.5	3744013.6	43.1
386445.3	3744096.2	99.1
386470.5	3744139.6	50.2
386492.0	3744184.7	49.9
386510.2	3744236.0	54.5
386537.9	3744325.3	93.5
386575.9	3744443.6	124.3
386653.2	3744685.3	253.7
386720.1	3744892.7	218.0
386785.3	3745094.8	212.3
386840.1	3745264.5	178.3
386913.0	3745493.7	240.5
386969.1	3745676.8	191.5
387010.6	3745805.2	134.9
387076.7	3746000.3	206.0
387126.8	3746150.3	158.1
387172.9	3746295.2	152.1
387223.5	3746450.2	163.0
387286.6	3746698.2	255.9
395471.8	3763580.4	472.0
395950.0	3763524.0	481.6

[this page left blank intentionally]

Source: ARB 2016 Vision 2.1 Locomotive Module. Current Control Programs Scenario. Table "b_TierDist_Sc0".

Line Haul Locomotive Projected Fleet Mix in the South Coast Air Basin

CY	Tier	Tier_Share	Air Basin
1990	Pre-Tier	100.0%	SC
1990	Tier 0	0.0%	SC
1990	Tier 0r	0.0%	SC
1990	Tier 1	0.0%	SC
1990	Tier 1r	0.0%	SC
1990	Tier 2	0.0%	SC
1990	Tier 2r	0.0%	SC
1990	Tier 3	0.0%	SC
1990	Tier 4	0.0%	SC
1990	Tier4+AT	0.0%	SC
1990	LNG	0.0%	SC
1990	Catenary	0.0%	SC
1990	Battery	0.0%	SC
1990	FuelCell	0.0%	SC
1990	MagLev	0.0%	SC
1991	Pre-Tier	100.0%	SC
1991	Tier 0	0.0%	SC
1991	Tier 0r	0.0%	SC
1991	Tier 1	0.0%	SC
1991	Tier 1r	0.0%	SC
1991	Tier 2	0.0%	SC
1991	Tier 2r	0.0%	SC
1991	Tier 3	0.0%	SC
1991	Tier 4	0.0%	SC
1991	Tier4+AT	0.0%	SC
1991	LNG	0.0%	SC
1991	Catenary	0.0%	SC
1991	Battery	0.0%	SC
1991	FuelCell	0.0%	SC
1991	MagLev	0.0%	SC
1992	Pre-Tier	100.0%	SC
1992	Tier 0	0.0%	SC
1992	Tier 0r	0.0%	SC
1992	Tier 1	0.0%	SC
1992	Tier 1r	0.0%	SC
1992	Tier 2	0.0%	SC

2019	Catenary	0.0%	SC
2019	Battery	0.0%	SC
2019	FuelCell	0.0%	SC
2019	MagLev	0.0%	SC
2020	Pre-Tier	0.0%	SC
2020	Tier 0	0.0%	SC
2020	Tier 0r	33.9%	SC
2020	Tier 1	0.0%	SC
2020	Tier 1r	11.9%	SC
2020	Tier 2	0.0%	SC
2020	Tier 2r	20.6%	SC
2020	Tier 3	17.7%	SC
2020	Tier 4	15.9%	SC
2020	Tier4+AT	0.0%	SC
2020	LNG	0.0%	SC
2020	Catenary	0.0%	SC
2020	Battery	0.0%	SC
2020	FuelCell	0.0%	SC
2020	MagLev	0.0%	SC
2021	Pre-Tier	0.0%	SC
2021	Tier 0	0.0%	SC
2021	Tier 0r	30.5%	SC
2021	Tier 1	0.0%	SC
2021	Tier 1r	11.8%	SC
2021	Tier 2	0.0%	SC
2021	Tier 2r	20.3%	SC
2021	Tier 3	17.5%	SC
2021	Tier 4	19.9%	SC
2021	Tier4+AT	0.0%	SC
2021	LNG	0.0%	SC
2021	Catenary	0.0%	SC
2021	Battery	0.0%	SC
2021	FuelCell	0.0%	SC
2021	MagLev	0.0%	SC
2022	Pre-Tier	0.0%	SC
2022	Tier 0	0.0%	SC
2022	Tier 0r	27.3%	SC
2022	Tier 1	0.0%	SC
2022	Tier 1r	11.6%	SC
2022	Tier 2	0.0%	SC
2022	Tier 2r	20.1%	SC

2038	FuelCell	0.0%	SC
2038	MagLev	0.0%	SC
2039	Pre-Tier	0.0%	SC
2039	Tier 0	0.0%	SC
2039	Tier 0r	0.4%	SC
2039	Tier 1	0.0%	SC
2039	Tier 1r	1.8%	SC
2039	Tier 2	0.0%	SC
2039	Tier 2r	6.3%	SC
2039	Tier 3	9.9%	SC
2039	Tier 4	81.6%	SC
2039	Tier4+AT	0.0%	SC
2039	LNG	0.0%	SC
2039	Catenary	0.0%	SC
2039	Battery	0.0%	SC
2039	FuelCell	0.0%	SC
2039	MagLev	0.0%	SC
2040	Pre-Tier	0.0%	SC
2040	Tier 0	0.0%	SC
2040	Tier 0r	0.1%	SC
2040	Tier 1	0.0%	SC
2040	Tier 1r	1.3%	SC
2040	Tier 2	0.0%	SC
2040	Tier 2r	5.5%	SC
2040	Tier 3	9.1%	SC
2040	Tier 4	84.0%	SC
2040	Tier4+AT	0.0%	SC
2040	LNG	0.0%	SC
2040	Catenary	0.0%	SC
2040	Battery	0.0%	SC
2040	FuelCell	0.0%	SC
2040	MagLev	0.0%	SC
2041	Pre-Tier	0.0%	SC
2041	Tier 0	0.0%	SC
2041	Tier 0r	0.0%	SC
2041	Tier 1	0.0%	SC
2041	Tier 1r	0.9%	SC
2041	Tier 2	0.0%	SC
2041	Tier 2r	4.6%	SC
2041	Tier 3	8.3%	SC
2041	Tier 4	86.3%	SC

2041	Tier4+AT	0.0%	SC
2041	LNG	0.0%	SC
2041	Catenary	0.0%	SC
2041	Battery	0.0%	SC
2041	FuelCell	0.0%	SC
2041	MagLev	0.0%	SC
2042	Pre-Tier	0.0%	SC
2042	Tier 0	0.0%	SC
2042	Tier 0r	0.0%	SC
2042	Tier 1	0.0%	SC
2042	Tier 1r	0.4%	SC
2042	Tier 2	0.0%	SC
2042	Tier 2r	3.8%	SC
2042	Tier 3	7.5%	SC
2042	Tier 4	88.3%	SC
2042	Tier4+AT	0.0%	SC
2042	LNG	0.0%	SC
2042	Catenary	0.0%	SC
2042	Battery	0.0%	SC
2042	FuelCell	0.0%	SC
2042	MagLev	0.0%	SC
2043	Pre-Tier	0.0%	SC
2043	Tier 0	0.0%	SC
2043	Tier 0r	0.0%	SC
2043	Tier 1	0.0%	SC
2043	Tier 1r	0.1%	SC
2043	Tier 2	0.0%	SC
2043	Tier 2r	3.0%	SC
2043	Tier 3	6.7%	SC
2043	Tier 4	90.1%	SC
2043	Tier4+AT	0.0%	SC
2043	LNG	0.0%	SC
2043	Catenary	0.0%	SC
2043	Battery	0.0%	SC
2043	FuelCell	0.0%	SC
2043	MagLev	0.0%	SC
2044	Pre-Tier	0.0%	SC
2044	Tier 0	0.0%	SC
2044	Tier 0r	0.0%	SC
2044	Tier 1	0.0%	SC
2044	Tier 1r	0.0%	SC

Assumptions Used in the Traffic Emission Calculations

Parameter	Value	Unit of Measure	Reference
Global Warming Potential, CO2	1	(unitless)	EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015, April 2017
Global Warming Potential, CH4	25	(unitless)	EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015, April 2017
Global Warming Potential, N2O	298	(unitless)	EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015, April 2017
Ratio Annual/Peak Day for Trucks, 2021 & 2041	247.0	(unitless)	China Shipping Draft Supplemental EIR, 2017. Appendix B1, Tables B1-148 and B1-244. Assume the peaking factors in 2021 and 2041 are the same as years 2023 and 2045. Confirmed by Ramesh Thammiraju/CSI, telephone conversation, 9/12/17.
Ratio 2021/2041 APMT Truck VMT	0.366	(unitless)	Email from Kerry Cartwright/POLA, 9/21/17.

Scenario	CY	TimePeriod	SumOfEmis_ ROG	SumOfEmis_ CO	SumOfEmis_ NOx	SumOfEmis_ PM10EX	SumOfEmis_ PM25EX	SumOfEmis_ PM10TW	SumOfEmis_ PM10BW	SumOfEmis_ PM25TW	SumOfEmis_ PM25BW	SumOfEmis_ SOx	SumOfEmis_ CO2	SumOfEmis_ CH4	SumOfEmis_ N2O	SumOfEmis_ DPM	SumOfEmis_ PM10Dust	SumOfEmis_ PM25Dust
NoProj	2021	AM	2931.20152	10847.5227	164829.147	864.196445	826.811689	826.125763	1416.80568	206.531441	607.202435	384.888931	37853664.94	159.756814	1444.14625	796.875542	1333.08434	200.020966
NoProj	2021	MD	7171.05026	26578.408	392167.727	2050.20238	1961.51153	1956.36729	3355.1699	489.091822	1437.92996	911.464269	90136615.43	393.391146	3419.91573	1890.49162	3161.35473	474.341502
NoProj	2021	NTEV	4474.03673	16553.1533	270655.233	1428.7199	1366.91411	1376.3086	2360.36925	344.07715	1011.58682	641.217075	62126035.31	240.876438	2405.91808	1317.42262	2232.82726	335.021763
NoProj	2021	PM	3136.53349	11631.9821	170768.281	892.327336	853.725651	851.333367	1460.03672	212.833342	625.730024	396.63306	39251777.6	172.3233	1488.21154	822.815037	1378.59651	206.849783
NoProj	2041	AM	9312.16589	128550.958	235968.369	445.214792	425.954997	2247.50016	3854.46277	561.87504	1651.91262	863.278082	110491516.1	1271.11673	3428.95338	410.53256	3638.50798	545.935361
NoProj	2041	MD	25437.2384	348766.221	638352.202	1100.68092	1053.06595	5322.35646	9127.84133	1330.58912	3911.932	2044.34855	272148996.6	3444.78824	8120.18282	1014.93788	8628.57215	1294.66328
NoProj	2041	NTEV	5919.8026	53440.945	95950.4742	619.50301	592.703584	3744.28923	6421.45603	936.072307	2752.05258	1438.2036	151152333.1	488.923095	5712.56609	571.243726	6094.25792	914.405279
NoProj	2041	PM	10977.0694	141229.332	263851.446	478.627121	457.921924	2316.07821	3972.07413	579.019552	1702.31748	889.619316	117098058.1	1381.46223	3533.58115	441.342069	3762.72848	564.57387
Proj	2021	AM	2743.83724	10145.7134	155608.449	816.626395	781.299499	780.95189	1339.33249	195.237972	573.999639	363.842591	35727020.81	149.157	1365.17804	753.011199	1253.56809	188.09005
Proj	2021	MD	6709.43734	24842.4252	370016.909	1936.35563	1852.58975	1848.30635	3169.84539	462.076587	1358.50517	861.119078	85022634.41	367.032777	3231.01495	1785.51353	2969.96482	445.624643
Proj	2021	NTEV	4204.87664	15534.3609	257741.422	1362.48822	1303.54759	1313.05829	2251.89497	328.264573	965.097843	611.748991	59139706.79	225.356618	2295.35053	1256.35039	2118.48838	317.86593
Proj	2021	PM	2971.48908	11011.494	162885.393	851.824193	814.974656	812.927898	1394.17134	203.231974	597.502005	378.740095	37432275.15	162.899127	1421.07513	785.467089	1309.3811	196.464444
Proj	2041	AM	8648.39132	118627.11	217747.712	418.896645	400.775362	2124.60327	3643.69461	531.150817	1561.5834	816.072661	103888390.5	1171.91599	3241.45274	386.264596	3421.47707	513.371231
Proj	2041	MD	23614.0533	320981.219	584809.313	1035.37393	990.584115	5028.37341	8623.66039	1257.09335	3695.85445	1931.42792	255631839.2	3166.3754	7671.66041	954.718303	8106.1943	1216.28375
Proj	2041	NTEV	5508.09504	49112.7385	89517.9752	588.935442	563.458356	3572.21485	6126.34846	893.053712	2625.57791	1372.10882	143703726	448.041164	5450.03662	543.057371	5782.18245	867.580306
Proj	2041	PM	10271.65	131320.811	244089.513	454.610731	434.944472	2211.59497	3792.88537	552.898742	1625.5223	849.486686	111125290.8	1283.29838	3374.17375	419.196555	3573.81258	536.228222

Source: Exported from Microsoft Access.

APPENDIX B
Pier 400 Railyard Train Volumes

APPENDIX B
Pier 400 Railyard Train Volumes

Estimated APM Terminal Related Rail Traffic, 2021 and 2045, With and Without APMT Project (Includes On-dock IPI and Off-dock IPI Rail Traffic and their Changes due to Project by Rail Segment)

SEGMENT: APMT On-dock Yard to ICTF Jct. (South of ICTF Yard)

	Year 2021 Conditions			Year 2045 Conditions		
Daily Trains	**No Project**	**With Project**	**Difference**	**No Project**	**With Project**	**Difference**
Train Type: Train Length (TEUs per Train)	**APMT Peak Month Avg. On-Dock IPI Trains**	**APMT Peak Month Avg. On-Dock IPI Trains**	**APMT Peak Month Avg. On-Dock IPI Trains**	**APMT Peak Month Avg. On-Dock IPI Trains**	**APMT Peak Month Avg. On-Dock IPI Trains**	**APMT Peak Month Avg. On-Dock IPI Trains**
IPI: 9,985 ft (630 TEUs per Train)	1.0	1.2	0.2	1.4	2.1	0.7
IPI: 8,813 ft (558 TEUs per Train)	2.0	2.4	0.4	2.8	4.2	1.4
IPI: 1,997 ft (140 TEUs per Train) (Partial UP WB Trains between ICTF Yard and On-Dock Yard)	3.8	4.7	0.8	5.4	8.2	2.7
TOTAL	**6.7**	**8.2**	**1.5**	**9.6**	**14.4**	**4.8**

SEGMENT: ICTF Jct. to L.A. Downtown (North of ICTF Yard)

	Year 2021 Conditions			Year 2045 Conditions		
Daily APMT on-dock trains	**No Project**	**With Project**	**Difference**	**No Project**	**With Project**	**Difference**
Train Type: Train Length (TEUs per Train)	**APMT Peak Month Avg. Daily On-Dock IPI Trains**	**APMT Peak Month Avg. Daily On-Dock IPI Trains**	**APMT Peak Month Avg. Daily On-Dock IPI Trains**	**APMT Peak Month Avg. Daily On-Dock IPI Trains**	**APMT Peak Month Avg. Daily On-Dock IPI Trains**	**APMT Peak Month Avg. Daily On-Dock IPI Trains**
IPI: 9,985 ft (630 TEUs per Train)	1.3	1.5	0.3	1.8	2.7	0.9
IPI: 8,813 ft (558 TEUs per Train)	2.6	3.1	0.6	3.7	5.5	1.8
TOTAL	**3.8**	**4.7**	**0.8**	**5.5**	**8.2**	**2.8**

	Year 2021 Conditions			Year 2045 Conditions		
Daily off-dock IPI trains	**No Project**	**With Project**	**Difference**	**No Project**	**With Project**	**Difference**
Train Type: Train Length (TEUs per Train)	**APMT Peak Month Avg. Daily ICTF IPI Trains**	**APMT Peak Month Avg. Daily ICTF IPI Trains**	**APMT Peak Month Avg. Daily ICTF IPI Trains**	**APMT Peak Month Avg. Daily ICTF IPI Trains**	**APMT Peak Month Avg. Daily ICTF IPI Trains**	**APMT Peak Month Avg. Daily ICTF IPI Trains**
IPI: 9,985 ft (630 TEUs per Train)	0.1	0.0	-0.1	0.5	0.0	-0.4
IPI: 8,813 ft (558 TEUs per Train)	0.3	0.1	-0.2	0.9	0.0	-0.9
TOTAL	**0.4**	**0.1**	**-0.3**	**1.4**	**0.1**	**-1.3**

	Year 2021 Conditions			Year 2045 Conditions		
Total Daily Difference in trains	**No Project**	**With Project**	**Difference**	**No Project**	**With Project**	**Difference**
Train Type: Train Length (TEUs per Train)	**APMT Peak Month Avg. Daily Total Trains**	**APMT Peak Month Avg. Daily Total Trains**	**APMT Peak Month Avg. Daily Total Trains**	**APMT Peak Month Avg. Daily Total Trains**	**APMT Peak Month Avg. Daily Total Trains**	**APMT Peak Month Avg. Daily Total Trains**
IPI: 9,985 ft (630 TEUs per Train)	1.4	1.6	0.2	2.3	2.7	0.5
IPI: 8,813 ft (558 TEUs per Train)	2.8	3.2	0.4	4.6	5.5	0.9
TOTAL	**4.3**	**4.8**	**0.5**	**6.9**	**8.3**	**1.4**