Section 3.5

Greenhouse Gas Emissions

SECTION SUMMARY

This section describes greenhouse gas (GHG) emissions associated with the existing Everport Container Terminal operation and potential impacts on GHG emissions associated with construction and operation of the proposed Project or an alternative.

Section 3.5, Greenhouse Gas Emissions, provides the following:

- a description of the existing setting as it relates to Port GHG emissions and climate change;
- a description of applicable local, state, and federal regulations and policies regarding GHGs;
- a discussion on the methodology used to determine whether the proposed Project or the alternatives would result in an impact to GHG emissions and climate change;
- an impact analysis of the proposed Project and alternatives; and
- a description of any mitigation measures proposed to reduce any potential impacts and residual impacts, as applicable.

Key Points of Section 3.5:

The proposed Project and alternatives would improve the existing Everport Container Terminal and its operations would be consistent with other uses and container terminals in the Project area.

Emissions from the proposed Project would exceed the significance threshold for GHG. The proposed Project includes application of Best Management Practices (BMPs), required for all LAHD construction projects. Mitigation measures, as summarized below, would be applied to the proposed Project, Alternative 1, and Alternatives 3 through 5. Mitigation measures would not be applied to Alternative 2, the No Project Alternative, which would not require changes to the terminal or lease.

MM GHG-1: LED Lighting.

MM GHG-2: Solar Electricity.

In addition, the following air quality construction mitigation measures identified in Section 3.2, Air Quality and Meteorology, would also reduce GHG emissions:

MM AQ-2: On-road Trucks Used during Construction.

MM AQ-6: Vessel Speed Reduction Program (VSRP).

MM AQ-7: Alternative Maritime Power (AMP).

LAHD's standard lease measure LM AQ-1 and lease measure LM AQ-2 would be also be included in the tenant's lease. Although not quantified, these measures would further reduce future GHG emissions and serve to comply with Port air quality planning requirements.

LM AQ-1: Replacement of Equipment and Review of New Technology.

LM AQ-2: Priority Access System.

In addition, lease measure LM GHG-1 would be included in the tenant lease. Although not quantifiable, the measures would further reduce future GHG emissions.

LM GHG-1: GHG Credit Fund.

After the application of these mitigation and lease measures, impacts would be reduced but would remain significant and unavoidable under CEQA for the proposed Project and all alternatives.

As discussed further in Section 3.5.5.3, no significance threshold under NEPA for GHG emissions has been established at this time; there are no federal or science-based GHG significance thresholds. Therefore, a NEPA significance determination for the disclosed GHG emissions is not made for the proposed Project and alternatives.

Consistency with federal, statewide, and local plans and policies related to GHG is discussed for informational purposes only.

3.5.1 Introduction

This section evaluates the GHG emissions and climate change issues associated with the proposed Project and alternatives. Activities from construction and operation of the proposed Project would affect GHG emissions in the immediate Project area and the surrounding region. This section includes a description of the affected environment, including a discussion of the state of climate change science; the regulatory setting; predicted impacts of the proposed Project; and mitigation measures to address the impacts.

3.5.2 Environmental Setting

The Project site is located in the Port of Los Angeles within the City of Los Angeles, which is in the southwest coastal area of the South Coast Air Basin (Basin). The Basin consists of the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County. The air basin covers an area of approximately 15,500 square kilometers (6,000 square miles) and is bounded on the west by the Pacific Ocean; on the north and east by the San Gabriel, San Bernardino, and San Jacinto mountains; and on the south by the San Diego county line.

3.5.3 Greenhouse Gas Pollutants

Gases that trap heat in the atmosphere are often called greenhouse gases. The term GHGs includes gases that contribute to the natural greenhouse effect, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), as well as gases that are only human-made and that are emitted through the use of modern industrial products, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These last three families of gases, while not naturally present in the atmosphere, have properties that also cause them to trap infrared radiation when they are present in the atmosphere. Together, these six gases comprise the major GHGs that are recognized by the Kyoto Accords (United Nations Framework Convention on Climate Change, 1997). There are other GHGs that are not recognized by the Kyoto Accords due either to the smaller role that they play in climate change or the uncertainties surrounding their effects. Atmospheric water vapor is not recognized by the Kyoto Accords because there is not an obvious correlation between water vapor concentrations and specific human activities. Water vapor appears to act as a positive feedback mechanism; higher temperatures lead to higher water concentrations, which in turn cause more global warming (Myhre et al., 2013).

The effect each of these gases has on global warming is a combination of the volume of their emissions and their 100-year global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of CO_2. GWP is a unitless quantity. CH_4 and N_2O are substantially more potent than CO_2, with GWPs (100-year horizon) of 28 and 265, respectively (IPCC, 2015). However, these natural GHGs are nowhere near as potent as sulfur hexafluoride and various HFCs and CFCs. Sulfur hexafluoride has a 100-year GWP of 23,900, and CFCs and HFCs have GWPs ranging from 140 to 11,700 (IPCC, 1995). In emissions inventories, GHG emissions are typically reported in terms of metric tons ("tonnes," or "MTon" equivalent to 1,000 kilograms) of carbon dioxide equivalents (CO_2e), which are calculated as the product of the mass emitted of a given GHG and its specific GWP. In this document, the unit "metric tons" is used to report GHG emissions.

The most important GHG in human-induced global warming is CO_2. While many gases have much higher GWPs than the naturally occurring GHGs, CO_2 is emitted in vastly higher quantities and accounts for over 80 percent of the GWP of all GHGs emitted by the United States (EPA, 2016a). Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions and thus substantial increases in global atmospheric CO_2 concentrations over the last century. In 2011, the atmospheric CO_2 concentration was about 391 parts per million, substantially exceeding the natural range over the last 800,000 years that have been measured in ice core samples (IPCC, 2013; IPCC, 2014). The buildup of CO_2 in the atmosphere is a result of increased emissions and its relatively long lifespan in the atmosphere of 50 to 200 years.

Concentrations of the second most prominent GHG, CH_4, have also increased due to human activities such as rice production, degradation of waste in landfills, cattle farming, and natural gas mining. In 2011, the atmospheric level of CH_4 was more than double the pre-industrial level, up to 1,803 parts per billion as compared to 715 parts per billion (IPCC, 2013; IPCC, 2014). CH_4 has a relatively short atmospheric lifespan of only 12 years, but it has a higher GWP than CO_2.

N_2O concentrations have increased from about 270 parts per billion in pre-industrial times to about 324 parts per billion by 2011 (IPCC, 2013; IPCC, 2014). Most of this increase can be attributed to agricultural practices (such as soil and manure management), as well as fossil-fuel combustion and the production of some acids. N_2O has a 120-year atmospheric lifespan, meaning that, in addition to its relatively large GWP, its influence is long lasting, which increases its role in global warming.

Sulfur hexafluoride (SF_6), used in the electric industry; refrigerants such as chlorinated fluorocarbons (CFCs) and hydrofluorocarbons (HFCs); and perfluorocarbons (PFCs) are present in the atmosphere in relatively small concentrations but have extremely long lifespans between 32,000 and 50,000 years, making them potent GHGs.

GHGs differ from criteria pollutants in that GHG emissions do not cause direct adverse human health effects. Rather, the environmental effect of GHG emissions is the increase in global temperatures, which in turn, has numerous indirect effects on the environment and humans. In addition to rising temperatures, human activities very likely contributed to Arctic sea-ice loss, increase in upper ocean temperature, and to global sea level rise during the latter half of the 20th century. It is virtually certain that there will be warmer and more frequent hot days and nights and very likely that heat waves will occur more frequently and last longer. Heavy precipitation events will very likely increase in frequency and intensity in many regions. The ocean is expected to warm and acidify, and an increase in global mean sea level will very likely occur at a faster pace in the 21st century. (IPCC, 2013; IPCC, 2014)

Current predictions suggest that in the next 25 years California will experience longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. More specifically, the California Climate Action Team (CAT, 2010) biennial assessment on climate change impacts and adaptation options for California predicted that California could witness the following events:

- Temperature rises between 2.7-10.5°F by the 2070–2100 time period;

- 11–18 inches of sea level rise by 2050 and 23 to 55 inches of rise by 2100;
- Drier (by 5 percent or more) than historical average precipitation, with a greater amount of drying in Southern California (with precipitation decreases in some scenarios exceeding 15 percent);
- Decrease in cotton, maize, sunflower, and wheat yields from 3 percent to 8 percent by 2050, with rice and tomato yields unchanged, and decreased yields for all crops except alfalfa by 2100; and
- Substantial increase in fire risk and estimated burned area increases from 57 percent to 169 percent by 2085.

3.5.4 Applicable Regulations

Climate change has only recently been widely recognized as a threat to the global climate, economy, and population. As a result, the climate change regulatory setting—federal, state, and local—is complex and evolving. This section identifies key GHG legislation, executive orders, regulations, plans, policies, and seminal court cases related to GHG reduction and climate change germane to the proposed Project.

3.5.4.1 Federal

Federal Action on Greenhouse Gas Emissions

April 2007 Supreme Court Ruling

In *Massachusetts et al. v. Environmental Protection Agency et al.* (549 U.S. 497 [2007]), the U.S. Supreme Court ruled that GHGs were air pollutants within the meaning of the Clean Air Act and that the act authorizes the EPA to regulate CO_2 emissions from new motor vehicles, should those emissions endanger the public health or welfare.

GHG Standards for On-road Vehicles: Corporate Average Fuel Economy (CAFE) Light Duty Vehicle Standards and GHG Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

First enacted by Congress in 1975 as part of the 1975 Energy Policy Conservation Act in response to the 1973–1974 oil crises, the purpose of CAFE standards is to reduce energy consumption by increasing the fuel economy of passenger cars and light-duty trucks. The CAFE regulation requires each car manufacturer to meet a standard for the sales-weighted fuel economy for the entire fleet of vehicles sold in the United States in each model year.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 was signed into law on December 19, 2007 and includes provisions covering:

- Renewable Fuel Standards (Section 202);
- Appliance and Lighting Efficiency Standards (Section 301–325); and
- Building Energy Efficiency (Sections 411–441).

GHG Reporting Requirements

Congress passed The Consolidated Appropriations Act of 2008 (HR 2764) in December 2007, which requires reporting of GHG data and other relevant information from large emission sources and suppliers in the United States pursuant to 40 CFR 98, the Greenhouse Gas Reporting Program. The stated purpose of the act is to collect accurate and timely GHG data to inform future policy decisions. Facilities that emit 25,000 metric tons per year (mty) or more per year of GHGs are required to submit annual reports to the EPA.

Renewable Fuel Standards (RFS1 and RFS2)

Created under the Energy Policy Act of 2005, this program established the first renewable fuel volume mandate in the United States. The original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012 (see 72 FR 23900). Under the Energy Independence and Security Act of 2007, the RFS program was expanded to include diesel and to increase the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022. In addition, it requires the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces (see 75 FR 14670).

3.5.4.2 State

California Legislation

California has enacted a variety of laws that relate to climate change, many of which set aggressive goals for GHG reductions within the state. The discussion below provides a brief overview of the CARB and Office of Planning and Research documents and of the primary legislation that relates to climate change and may affect the GHG emissions associated with the proposed Project or alternative.

Assembly Bill 32 (Statewide GHG Reductions)

The California Global Warming Solutions Act of 2006, widely known as Assembly Bill (AB) 32, requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020.

Executive Order S-3-05

California Executive Order S-3-05 (June 1, 2005) mandates a reduction of GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Although the 2020 target is the core of AB 32 and has been incorporated into AB 32, the 2050 target remains the goal of the Executive Order.

Executive Order B-30-15

In April 2015, EO B-30-15 established an interim, Statewide GHG emissions-reduction target of 40 percent below 1990 levels by 2030 and directed State legislature to develop legislation to address that State target. This interim target was established in order to ensure the state meets the EO S-3-05 target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050.

To facilitate achievement of this goal, EO B-30-15 called for an update to CARB's Scoping Plan. CARB released its draft 2017 Climate Change Scoping Plan Update for public comment in January 2017 and is expecting a final version to go to its board in the Summer of 2017.

Senate Bill (SB) 32

In 2016, SB 32 codified the EO B-30-15 target of 40 percent reduction below 1990 levels by 2030 and directed State regulatory agencies to develop rules and regulations to meet the 2030 State target.

Low Carbon Fuel Standard

California EO S-01-07 established a statewide goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent from 2005 levels by 2020. The Low Carbon Fuel Standard (LCFS), a discrete early action item in the Scoping Plan, was approved by CARB in 2009, with amendments implemented on January 1, 2013.

Senate Bill 1368 (GHG Emissions Standard for Baseload Generation)

SB 1368 prohibits any retail seller of electricity in California from entering into a long-term financial commitment for baseload generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant. This performance standard applies to electricity generated out-of-state as well as in-state, and to publicly owned as well as investor-owned electric utilities (CEC, 2007; SB 1368, 2006).

Assembly Bill 1493 (Mobile Source Reductions)

AB 1493 ("the Pavley Standard") required CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks of model year 2009 through 2016. The bill also required the California Climate Action Registry to develop and adopt protocols for the reporting and certification of GHG emissions reductions from mobile sources for use by CARB in granting emission reduction credits. The bill authorizes CARB to grant emission reduction credits for reductions of GHG emissions prior to the date of enforcement of regulations, using model year 2000 as the baseline for reduction.

In 2011, the U.S. Department of Transportation, EPA, and California announced a single timeframe for proposing fuel and economy standards, thereby aligning the Pavley standards with the federal standards for passenger cars and light-duty trucks that were described above. (CARB, 2013)

Senate Bills 1078, 107, 2, and 350 (Renewables Portfolio Standard)

Established in 2002 under SB 1078 and accelerated in 2006 under SB 107, California's Renewables Portfolio Standard requires retail suppliers of electric services to increase procurement from eligible renewable energy resources by at least 1 percent of their retail sales annually, until they reach 20 percent by 2010 (SB 1078, 2002; SB 107, 2006).

On April 12, 2011, Governor Brown signed SB 2, which requires one-third of the state's electricity to come from renewable sources by 2020. The legislation increases California's former 20 percent renewable portfolio standard target for 2010 to a 33 percent renewable

portfolio standard by December 31, 2020 (SBX1-2, 2011). Resolution 10-23 adopted by CARB found that the proposed regulation to adopt the 33 percent renewable standard was expected to reduce GHG emissions from California's utility sector by at least 12 $MMTCO_2e$ per year by 2020 (CARB, 2010).

In October 2015, SB 350 was signed into law. SB 350 requires a 50 percent increase in California's renewable portfolio standard and a doubling of energy efficiency by 2030.

Senate Bill 375 (Land Use Planning)

SB 375 provides for a new planning process to coordinate land use planning and regional transportation plans and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by Metropolitan Planning Organizations relevant to the Project area (including the Southern California Association of Governments)[1], to incorporate a sustainable communities strategy (SCS) in their regional transportation plans that will achieve GHG emission reduction targets set by CARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development.

On April 7, 2016, the Southern California Association of Governments (SCAG) adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS). The RTP/SCS is the culmination of a multi-year effort involving stakeholders from across the SCAG Region. (SCAG, 2016). The 2016–2040 RTP/SCS contains a regional commitment for the broad deployment of zero- and near-zero emission transportation technologies in the 2020–2040 timeframe and clear steps to move toward this objective. The report indicates that the RTP is critical for the goods movement system in the Basin.

Senate Bill 97 (CEQA Guidelines)

SB 97 required that the California Natural Resources Agency coordinate on the preparation of amendments to the CEQA Guidelines regarding feasible mitigation of GHG emissions or the effects of GHG emissions. Pursuant to SB 97, the agency adopted CEQA Guideline amendments on December 30, 2009, and transmitted the Adopted Amendments and the entire rulemaking file to the Office of Administrative Law on December 31, 2009. The amendments were approved by the Office of Administrative Law on February 16, 2010 and became effective on March 18, 2010.

With respect to the significance assessment, CEQA Guidelines Section 15064.4. subdivision (a), provides:

The determination of the significance of greenhouse gas emissions calls for careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select

[1] SCAG member cities: http://www.scag.ca.gov/region/index.htm

the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance based standards.

Guideline Section 15064.4, subdivision (b), further indicates:

> *(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:*
>
> *(1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;*
>
> *(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;*
>
> *(3) The extent to which the 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 must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.*

The amendments also provide that lead agencies should consider all feasible means of mitigating GHG emissions that substantially reduce energy consumption or GHG emissions. These potential mitigation measures may include carbon sequestration. If offsite or carbon offset mitigation measures are proposed, they must be part of a reasonable plan of mitigation that the agency itself is committed to implementing. No threshold of significance or any specific mitigation measures are indicated.

Among other things, the California Natural Resources Agency noted in its public notice for these changes that impacts of GHG emissions should be considered in the context of a cumulative impact, rather than a project impact. The public notice states:

> *While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable.*

CEQA Guidelines Section 15126.2(a)

CEQA Guidelines identify the need to evaluate potential impacts of locating development in areas vulnerable to climate change effects: The EIR "should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas)."

Executive Order S-13-08

On November 14, 2008, Governor Arnold Schwarzenegger signed EO S-13-08, which called on state agencies to develop a strategy for identification and preparation for

expected climate change impacts in California. The resulting *2009 California Climate Adaptation Strategy* report was developed by the California Natural Resources Agency in coordination with the Climate Action Team (CAT). The report presents best available science relevant to climate impacts in California and proposes a set of recommendations for California decision makers to assess vulnerability and promote resiliency in order to reduce California's vulnerability to climate change.

The CAS included 12 recommendations that are largely geared towards state agencies, but have implications for project-level analyses. For example, the CAS recommends that the potential impacts of climate change be considered for all significant state projects, to the extent required by CEQA Guidelines Section 15126.2, which relates to the consideration and discussion of significant environmental impacts. This CEQA section requires lead agencies to identify and focus on the significant environmental effects of the Proposed Action; to describe any significant impacts, including those that can be mitigated but not reduced to a level of insignificance; to evaluate significant irreversible environmental changes that would be caused by the Proposed Action; and to discuss growth-inducing impacts of the Proposed Action.

In 2010, the CNRA released the *First Year Progress Report* (CNRA, 2010) that describes California's progress towards completing the tasks outlined in the CAS. *Safeguarding California: Reducing Climate Risk* was developed in 2014 to update the CAS and to guide policy makers in implementing key actions to address climate risks. Strategies to implement cross-sector actions are presented in the 2014 plan (CNRA, 2014).

In addition to requiring the CAT to create a Climate Adaptation Strategy, EO-S13-08 ordered the creation of a comprehensive Sea Level Rise Assessment Report, which was completed by the National Academy of Science in 2012 (NAS, 2012). In coordination with National Academy of Science efforts, the council drafted interim guidance recommending that state agencies consider a range of sea-level rise (SLR) scenarios for the years 2050 and 2100 in order to assess project vulnerability, reduce expected risks, and increase resiliency to SLR. The draft resolution and interim guidance document is consistent with the Ocean Protection Act (Division 26.5 PRC Section 35615(a)(1)), which specifically directs the California Ocean Protection Council to coordinate activities of state agencies to improve the effectiveness of state efforts to protect ocean resources.

California Sustainable Freight Action Plan

In response to Executive Order B-32-15, the California State Transportation Agency, California Environmental Protection Agency, the Natural Resources Agency, and other state departments developed the California Sustainable Freight Action Plan in July 2016. The plan established targets to improve freight efficiency, transition to zero-emission technologies, and make California's freight system more competitive. The targets are not mandates but are aspirational measures of progress. Plan measures are conceptual and rely on the future development of regulations to implement the strategies. Plan strategies include on-dock and near-dock strategies to shift goods movement from truck to rail. (California Sustainable Freight Action Plan, 2016)

3.5.4.3 Local

South Coast Air Quality Management District

SCAQMD GHG CEQA Thresholds

On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for projects where the SCAQMD is the lead agency. To date, the board has adopted a threshold of 10,000 mty CO_2e emissions per year to industrial projects, and the threshold has been a part of the SCAQMD Air Quality Thresholds since 2011. In 2008, a standard of 3,000 mty was also proposed for commercial and residential CEQA projects. (SCAQMD, 2011)

City of Los Angeles Policies

Green LA

The City of Los Angeles released its climate action plan, Green LA: An Action Plan to Lead the Nation in Fighting Global Warming, in May 2007 (City of Los Angeles, 2007). The Green LA plan is a voluntary program that sets a goal of reducing the City's greenhouse gas emissions to 35 percent below 1990 level by 2030.

ClimateLA is the implementation framework that contains the details of the more than 50 action items that are included in Green LA. While the majority of the actions described in the Green LA Plan are not project-specific, the Green LA Plan calls for the following Port-specific actions:

- Heavy-duty vehicles: By the end of 2011, all trucks calling at the ports will meet or exceed the EPA's 2007 heavy-duty vehicle on-road emissions standards for particulate matter.
- Cargo-handling equipment: All yard tractors will meet at a minimum the EPA 2007 on-road or Tier IV engine emission standards.
- Railroad locomotives: For Pacific Harbor Line switch engines, Tier II engines and emulsified or other equivalently clean alternative diesel fuels available will be used. Diesel-powered Class 1 locomotives entering port facilities will be 90 percent controlled for particulate matter and NOx.
- A strategic plan for the Port will be completed and will include sustainable and green growth options.
- An economic development plan for the Port will be completed and will identify opportunities to link the Port's investment in green growth to new economic opportunities in the green sector.

The specific measures for developing the Port-specific actions are included in the San Pedro Bay Ports Clean Air Action Plan discussed below.

The Sustainable City pLAn (pLAn)

In April 2015, the City of Los Angeles developed the Sustainable City pLAn (pLAn) as a roadmap through 2035. The pLAn contains strategies to address current and future climate change impacts and reduce air quality emissions. The pLAn sets aspirations for 14 target areas. Of these, the following are applicable to port activities: energy-efficient buildings, carbon and climate leadership, mobility and transit. In particular, the pLAn projects the

increase of port-related goods movement trips that use zero-emissions technology to 15 percent by 2025 and to 25 percent by 2035 (City of Los Angeles, 2015).

On November 4, 2016, the City of Los Angeles approved the use of Institute for Sustainable Infrastructure's Envision sustainability rating system and planning guide for introducing sustainability elements into Bureau of Engineering projects.

Port of Los Angeles Policies

Green Building Policy

In August 2007, the Board of Harbor Commissioners adopted the Green Building Policy requiring Leadership in Energy and Environmental Design (LEED) Gold Rating as the minimum standard for new construction of most buildings of at least 7,500 square feet as well as the incorporation of solar power and best available technology for energy and water efficiency for all new Port buildings.

Port Climate Action Plan

The 2007 Green LA Plan led to LAHD's development of an individual Climate Action Plan, consistent with the goals of Green LA, to examine opportunities to reduce GHG emissions from Port operations (such as Port buildings and Port workforce operations).

In accordance with this directive, the Port's Climate Action Plan, developed in December 2007, covers GHG emissions related to the Port's municipal activities (such as Port buildings and Port workforce operations). The Climate Action Plan outlines specific steps that LAHD has taken and will take on global climate change. These steps include specific actions that will be taken for energy audits, green building policies, onsite photovoltaic solar energy, green energy procurement, tree planting, water conservation, alternative fuel vehicles, increased recycling, and green procurement. The Climate Action Plan also outlines San Pedro Bay Ports Clean Air Action Plan (CAAP) measures that have significant GHG reduction co-benefits, such as Vessel Speed Reduction (VSR) and Alternative Marine Power (AMP). GHG reduction needs from Port's tenant activities are recognized in the Port Climate Action Plan, but are deferred to the CAAP, which addresses tenant operations.

In addition, the June 2008 Port of Los Angeles Sustainability Assessment contains an assessment of existing programs and policies against the eight goals that were identified in Executive Directive No. 10 on Sustainability Practices in the City of Los Angeles. LAHD has also completed annual GHG inventories of the Port's municipal activities and reported these to third-party registries since 2006. LAHD's Annual Inventory of Air Emissions has also included GHG estimates for transportation activities associated with goods movement for ocean-going vessels (OGVs), harbor craft, trucks, locomotives, and cargo handling equipment since 2006. LAHD expanded the 2006–2010 GHG inventories to include an expanded geographical delineation for OGVs, trucks, and locomotives. These annual inventories and expanded inventories can be found on the Port's website.[2]

[2] Port of Los Angeles, Studies and Reports: http://www.portoflosangeles.org/environment/studies_reports.asp

Port of Los Angeles Actions to Reduce Greenhouse Gas Emissions by 2050

In September 2014, LAHD prepared Actions to Reduce Greenhouse Gas Emissions by 2050 and submitted the document to the City of Los Angeles (LAHD, 2014). The document presents a summary of the actions currently being undertaken by LAHD to reduce GHG emissions associated with LAHD operations, as well as its leadership role to help the maritime industry reduce its emissions occurring in the Port area. The document shows that quantifiable progress has been made in reducing GHG emissions reductions from 1990 to 2013 and outlines actions/strategies that are either being implemented or evaluated to continue the reduction of GHG emissions and meet a target of 35 percent reduction by 2035 and 80 percent reduction by 2050.

San Pedro Bay Ports Clean Air Action Plan

The Ports of Los Angeles and Long Beach, with the participation and cooperation of EPA, CARB, and SCAQMD staff, developed the San Pedro Bay Ports CAAP, a planning and policy document that sets goals and implementation strategies to reduce air emissions and health risks associated with port operations while allowing port development to continue (POLA and POLB, 2006, 2010). Each individual CAAP measure is a proposed strategy for achieving these emissions reductions goals.

On November 18, 2016, the Ports unveiled the CAAP 2017 Draft Discussion Document, which outlines new concepts under consideration for the third iteration of the CAAP. The Discussion Document prioritizes reducing GHG emissions from port-related sources 80 percent below 1990 levels by 2050. This target aligns with California's clean air goals and objectives in the state's Sustainable Freight Action Plan, as well as efforts by the cities of Los Angeles and Long Beach to shrink GHG emissions ahead of state targets. Although many CAAP measures may result in GHG reductions as older technologies are replaced with newer, fuel-efficient technologies, the following CAAP measures are specifically identified in the CAAP to quantifiably reduce GHG emissions:

CAAP Measure – SPBP-OGV1, Vessel Speed Reduction Program. LAHD has requested that ships coming into the Port reduce their speed to 12 knots or less within 20 nm of the Point Fermin Lighthouse. Reduction in speed demands less power from the main engine, which in turn reduces fuel usage and emissions. This reduction of 3 to 10 knots per ship (depending on the ship's cruising speed) can substantially reduce emissions from the main propulsion engines of the ships. The program started in May 2001. The CAAP adopted the VSRP as control measure OGV-1 and expanded the program out to 40 nm from the Point Fermin Lighthouse in 2008. Per the 2010 CAAP update, full compliance with VSR will achieve 5 percent reduction of CO_2e within the 20 nm zone and 10 percent reduction of CO_2e within the 40 nm zone.

CAAP Measure – SPBP-OGV2, Reduction of At-Berth OGV Emissions. This measure required the use of shore power to reduce hoteling emissions at all container and cruise terminals by 2014. This measure also requires demonstration and application of alternative emission reduction technologies for ships that are not viable candidates for shore power, to be facilitated through the Technology Advancement Program (TAP). Per the 2010 CAAP update, use of shore power at-berth will reduce hoteling emissions of CO_2e by 95 percent per vessel call (this estimate does not account for emissions from electrical power generation).

Additional Rules, Regulations and Policies

In addition to the above rules, regulations, and policies that primarily focus on GHG emission reductions, rules, regulations and policies discussed in Section 3.2, Air Quality and Methodology, that reduce fuel consumption would have the co-benefit of reducing GHG emissions.

3.5.5 Impacts and Mitigation Measures

This section presents a discussion of the potential GHG emission impacts associated with construction and operation of the proposed Project and alternatives. Mitigation measures are also discussed in this section.

3.5.5.1 Methodology

GHG emissions were estimated for the CEQA baseline, NEPA baseline, and construction and operation of the proposed Project and alternatives. In addition, indirect GHG emissions from electricity use during both construction and operation of the proposed Project and alternatives were estimated.

Sources contributing to GHG emissions during proposed Project construction consist of the following:

- Off-road construction equipment;
- On-road construction vehicles;
- Crane delivery ship;
- Harbor craft (i.e., tug and dive boats); and
- Worker vehicles.

As noted in Section 3.2, Air Quality and Meteorology, sources contributing to GHG emissions during proposed Project operation consist of:

- Container ships (transit, anchoring, and hoteling);
- AMP electricity use during container ship hoteling;
- Tugboats assisting container ships during harbor transit, turning, and docking;
- Drayage trucks and other miscellaneous delivery trucks calling at the terminal;
- Switch and line haul locomotives associated with proposed Terminal Island Container Transfer Facility (TICTF) operation;
- Cargo handling equipment on the terminal and TICTF;
- On-terminal electricity use; and
- Worker vehicles.

Once the selected construction contractor identifies and secures a final equipment list and project scope, LAHD shall meet with the contractor to identify potential BMPs and work with the contractor to include such measures in the contract. BMPs shall be based on CARB-Verified BACT and may include changes to construction practices and design to reduce or eliminate environmental impacts.

The specific approaches to calculating emissions for the various emission sources during construction and operation of the proposed Project are discussed below. Construction and operational emission calculations are presented in Appendix B1.

The activity data (ship calls, truck trips, etc.) used in the GHG emission calculations for baseline, construction, and operation are the same activity data used and described in Section 3.2, Air Quality and Meteorology; therefore, the activity data descriptions are not repeated here.

In brief, information about on-road and off-road equipment utilization anticipated during construction was obtained from LAHD Engineering (LAHD, 2013a). Phases 1 and 2 would include dredging activities and, as such, would require the disposal of dredged material. As described in Section 3.2.4.1 Air Quality and Meteorology, Methodology, all dredged material will be disposed of at an approved site, such as the LA-2 ocean disposal site or a land-based location, such as the Kettleman Landfill, or a combination of the two.

Information about container ships, harbor craft, cargo handling equipment, and facility energy consumption was provided by LAHD for the CEQA baseline period, and projected based on expected container throughput projections for future analysis years. Information about drayage truck trips, worker trips, and rail activity was obtained from the transportation section of this Draft EIS/EIR (Section 3.6, Ground Transportation) and included in Appendix B1. Indirect GHG emissions from on-terminal electricity consumption were based on baseline electricity-consumption information provided by Everport and projected into the future based on cargo throughput projections discussed in Section 3.2, Air Quality and Meteorology.

Emissions and emission factors used to calculate GHGs associated with the CEQA baseline, NEPA baseline, and proposed Project and alternatives are presented in detail in Appendix B1 and summarized as follows:

Based on the major sources associated with the proposed Project, GHG emissions (CO_2, CH_4, and N_2O) from on-road and off-road construction-related equipment were calculated based on emission factors derived from EMFAC2014 and OFFROAD2007.

- Container and crane delivery ship emissions were based on emission factors identified in the 2013 Port Emissions Inventory (Starcrest, 2014a).
- Harbor craft GHG emissions were based on harbor craft energy demand and emission factors from IVL Swedish Environmental Research Institute. Specifically, CO_2 and N_2O emission factors are from IVL's Methodology for Calculating Emissions from Ships: Update on Emission Factors study report (IVL, 2004). CH_4 is 2 percent of HC, per IVL's study.
- Emissions from cargo handling equipment were based on 2013 emission factors from the 2013 Port Emissions Inventory (Starcrest, 2014a) and forecasted to future years by Starcrest using assumed growth, attrition, and CARB adopted regulations.
- Diesel drayage truck emissions were based on the Port of Los Angeles fleet mix and EMFAC2014 emission factors and were provided by Starcrest.
- GHG emission factors for LNG-fueled drayage trucks, which comprised about 9.4 percent of the POLA truck calls in the 2013 baseline year (Starcrest, 2015a), were also provided by Starcrest.

- Locomotive emissions were based on 2013 GHG emission factors identified in the 2013 Port Emissions Inventory (Starcrest, 2014a). It was assumed that all future years would have the same emission factors as 2013.
- Direct GHG emissions were calculated for activities within the California state boundary.
- Indirect GHG emissions from electricity consumption on-site (electricity from wharf cranes) and from container ships using AMP while at berth were calculated based on the terminal's energy consumption and container ship engine activity, as well as from The Climate Registry and Los Angeles Department of Water and Power (LADWP) emission factors. More specifically, CH_4 and N_2O emission factors are from The 2015 Climate Registry, 2015 Default Emission Factors, Table 14.1 (TCR, 2015) and CO_2 emission factor from LADWP 2014 Power Integrated Resource Plan (LADWP, 2014).

In addition to evaluating the GHG emissions from the proposed Project and alternatives, the potential impact of SLR resulting from global climate change on the proposed Project was also considered. The methodology focused on a review of currently available documentation for the Los Angeles coastline (Pacific Institute, 2009; Lempert et al., 2012). Lempert et al. (2012) used the Port as a case study and considers a broader range of potential SLR scenarios (up to 30 centimeters higher) than the two previous studies.

3.5.5.2 Geographic Boundaries

For the purpose of assessing GHG impacts under CEQA, the proposed Project and project alternatives, GHG emissions were calculated to the California border. For the purposes of assessing GHG impacts under NEPA, the analysis conservatively reflects emissions calculated to the California border, even though the federal scope of analysis extends only to the East LA railyard, not the California border. Emissions from proposed Project-related container ships, trucks, and trains were calculated as follows:

- Container ship GHG emissions were calculated up to the northern 170 nm shipping route since it represents the longest distance that ships would travel to and from the Port while within CARB's California in-state boundary, which extends out 24 miles from the barrier islands. Truck and automobile emissions were calculated based on roadway link-by-link traffic volume and speed data provided by the transportation study for this EIS/EIR. The roadway link network extended all the way to the SCAB border.
- Train emissions were calculated based on train travel data within the Basin, as provided by the transportation study. For additional train travel between the Basin boundary and the California border, one-way travel distances were assumed to be 191 and 184 miles for BNSF and UP trains, respectively. The travel distances were measured from maps of the rail mainlines.
- All electrical power production was assumed to be generated within the state for calculating emissions associated with electric power demand.
- This document acknowledges that GHG emissions extend beyond state borders. However, origin and destination data for out-of-state emissions over the life of the proposed Project or an alternative do not exist and would be speculative on a project-specific level. Emissions outside state boundaries are discussed in Chapter 4 (Cumulative Impacts).

- The focus of the SLR analysis is the terminal. Although truck and train routes were also considered, because of the lack of project-specific SLR information, transportation routes associated with the proposed Project are addressed in general terms.

CEQA Baseline

Section 15125 of the CEQA Guidelines requires EIRs to include a description of the physical environmental conditions in the vicinity of a project that exist at the time of the NOP. These environmental conditions normally would constitute the baseline physical conditions by which the CEQA lead agency determines if an impact is significant. The NOP for the proposed Project was published in October 2014. For purposes of this Draft EIS/EIR, the CEQA baseline takes into account the throughput for the 12-month calendar year preceding NOP publication (January through December 2013) in order to provide a representative characterization of activity levels throughout the complete calendar year preceding release of the NOP.

In 2013, the Everport Container Terminal was used for containerized cargo handling and on-dock rail service. The terminal encompassed approximately 205 acres under its long-term lease, supported eight cranes, and handled approximately 1,240,773 TEUs and 166 ship calls. The CEQA baseline conditions are also described in Section 2.7.1 and summarized in Table 2-1. Table 3.5-1 presents the annual baseline GHG emissions in 2013 in mty.

Table 3.5-1: Annual Operational GHG Emissions—CEQA Baseline 2013 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e [1]
Ships—transit and anchoring	49,200	1	3	49,906
Ships—hoteling	7,488	1	22	13,443
AMP electricity use	2,436	<1	<1	2,441
Tugboats	617	<1	<1	625
Trucks	55,872	<1	2	56,418
Line haul locomotives	27,731	2	1	27,987
Switch locomotives	267	<1	<1	269
Cargo handling equipment	18,398	1	<1	18,523
On-terminal electricity use	4,469	<1	<1	4,479
Worker vehicles	1,902	<1	<1	1,986
2013 Baseline Total	168,382	5	28	176,076

Notes:

Emissions might not add precisely due to rounding. For more explanation, refer to the discussion in Section 3.2.4.1 in Section 3.2, Air Quality and Meteorology. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

On-terminal electricity use includes crane operation and high mast poles.

The CEQA baseline represents the setting at a fixed point in time.

NEPA Baseline

Emissions from the proposed Project and alternatives were compared to the NEPA baseline. The NEPA baseline conditions are described in Section 2.7.2 and summarized in Table 2-1. The NEPA baseline condition includes the full range of construction and operational activities the applicant could implement and is likely to implement absent a federal action, in this case the issuance of a USACE permit.

Unlike the CEQA baseline, which is defined by conditions at a point in time, the NEPA baseline is not bound by statute to a "flat" or "no-growth" scenario. Instead, the NEPA baseline is dynamic and includes increases in operations for each study year (2018, 2019, 2026, and 2033/2038), which are projected to occur absent a federal permit. Federal permit decisions focus on direct impacts of the proposed Project to the aquatic environment, as well as indirect and cumulative impacts in the uplands determined to be within the scope of federal control and responsibility.

The NEPA baseline, for purposes of this Draft EIS/EIR, is the same as the No Federal Action Alternative. Under the No Federal Action Alternative (Alternative 1), no dredging, dredged material disposal, in-water pile installation, or crane raising or installation would occur, and the existing terminal capacity would not be increased. The No Federal Action Alternative includes the installation of AMP vaults along the wharf and the addition of 23.5 acres of additional backlands (addition of the 1.5-acre area at the southern end of the terminal and the 22-acre backland expansion area) to improve efficiency (these improvements could occur absent a federal permit). The NEPA baseline for GHG purposes includes mitigation measure MM AQ-2 that was identified under CEQA. This mitigation measure is described in Section 3.5.5.4.

The NEPA baseline assumes that by 2038, the terminal would handle up to approximately 1,818,000 TEUs annually, accommodate 208 annual ships calls at two berths, generate 1,189,000 annual trucks trips, generate 1,149 annual on-dock train trips, and generate 229 annual near- and off-dock train trips without any federal action. The NEPA baseline GHG emissions include mitigation measures MM AQ-6 and MM AQ-7 that were identified under CEQA for operational years 2019 and beyond. These mitigation measures are described in Section 3.5.5.4.

Table 3.5-2 presents annual GHG emissions associated with the NEPA baseline for construction elements and shows amortized construction emissions over the life of the proposed Project, assumed to be 30 years. Table 3.5-3 presents annual GHG emissions associated with the NEPA baseline for operational activities and sums the annual operational emissions with the amortized construction emissions from Table 3.5-2.

Table 3.5-2: Annual Construction GHG Emissions – NEPA Baseline (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	609
Marine Source Exhaust	0
On-road Construction-Related Vehicles	595
Worker Vehicles	15
Total Construction Year 2018	1,219
Construction Year 2019	
Off-road Construction Equipment Exhaust	108
Marine Source Exhaust	0
On-road Construction-Related Vehicles	75
Worker Vehicles	5
Total Construction Year 2019	188
Amortized Construction	47

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

1
2

Table 3.5-3: Annual Operational GHG Emissions – NEPA Baseline (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				47
Year 2018				
Ships - Transit and Anchoring	53,821	1	3	54,591
Ships – Hoteling	8,780	<1	1	8,921
AMP Electricity Use	2,436	<1	<1	2,441
Tugboats	784	<1	<1	793
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	30,064	2	1	30,342
Switch Locomotives	272	<1	<1	274
Cargo Handling Equipment	15,262	<1	<1	15,361
On-terminal Electricity Use	4,509	<1	<1	4,519
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	170,996	5	7	172,942
Total Construction and Operations Year 2018				172,989
Year 2019				
Ships - Transit and Anchoring	53,906	1	3	54,679
Ships – Hoteling	8,707	<1	1	8,848
AMP Electricity Use	2,639	<1	<1	2,645
Tugboats	793	<1	<1	802
Trucks	56,315	<1	2	56,836
Line Haul Locomotives	30,693	2	1	30,977
Switch Locomotives	275	<1	<1	277
Cargo Handling Equipment	15,611	1	<1	15,712
On-terminal Electricity Use	3,276	<1	<1	3,283
Worker Vehicles	3,176	<1	1	3,329
Total Operational Year 2019	175,392	5	7	177,388
Total Construction and Operations Year 2019				177,435
Year 2026				
Ships - Transit and Anchoring	54,909	1	3	55,697
Ships – Hoteling	8,460	<1	1	8,599
AMP Electricity Use	3,046	<1	<1	3,052
Tugboats	793	<1	<1	802
Trucks	50,297	<1	2	50,753
Line Haul Locomotives	32,958	3	1	33,263

Table 3.5-3: Annual Operational GHG Emissions – NEPA Baseline (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Switch Locomotives	318	<1	<1	321
Cargo Handling Equipment	17,464	1	<1	17,577
On-terminal Electricity Use	3,536	<1	<1	3,544
Worker Vehicles	2,703	<1	1	2,865
Total Operational Year 2026	174,484	5	7	176,472
Total Construction and Operations Year 2026				176,519
Year 2033				
Ships - Transit and Anchoring	72,858	2	4	73,903
Ships – Hoteling	11,667	<1	1	11,858
AMP Electricity Use	4,402	<1	<1	4,412
Tugboats	1,057	<1	<1	1,070
Trucks	48,181	<1	2	48,617
Line Haul Locomotives	148,712	12	4	150,087
Switch Locomotives	706	<1	<1	712
Cargo Handling Equipment	22,206	1	<1	22,349
On-terminal Electricity Use	4,203	<1	<1	4,212
Worker Vehicles	2,790	<1	1	2,979
Total Operational Year 2033	316,783	15	11	320,199
Total Construction and Operations Year 2033				320,246
Year 2038				
Ships - Transit and Anchoring	72,858	2	4	73,903
Ships – Hoteling	11,667	<1	1	11,858
AMP Electricity Use	4,402	<1	<1	4,412
Tugboats	1,057	<1	<1	1,070
Trucks	47,477	<1	2	47,907
Line Haul Locomotives	148,712	12	4	150,087
Switch Locomotives	706	<1	<1	712
Cargo Handling Equipment	22,206	1	<1	22,349
On-terminal Electricity Use	4,203	<1	<1	4,212
Worker Vehicles	2,648	<1	1	2,837
Total Operational Year 2038	315,937	15	11	319,345
Total Construction and Operations Year 2038				319,394

Notes: Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

On-terminal electricity use includes crane operation and high mast poles.

3.5.5.3 Thresholds of Significance

CEQA Significance Thresholds

As noted above, State CEQA Guidelines Section 15064.4(a) affords a lead agency discretion to evaluate the significance of GHG emissions quantitatively – and to select the model or methodology it considers appropriate for doing so, provided its supports its decision with substantial evidence -- or qualitatively. CEQA Guidelines section 15064.4(b) sets forth factors that should be considered by a lead agency when assessing the significance of impacts from GHG emissions on the environment. These factors include:

- 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 must reduce or mitigate the project's incremental contribution of greenhouse gas 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 mty of CO_2e emissions per year was established. Construction GHG emissions, amortized over project life, are required to be included in a project's annual GHG emissions totals (SCAQMD, 2010).

LAHD has determined that the SCAQMD-adopted 10,000 mty CO_2e threshold is suitable for all LAHD projects.

- The SCAQMD industrial source threshold is appropriate for projects with future operations continuing as far out as 2050. The SCAQMD threshold development methodology used the EO S-3-05 emission reduction targets as the basis in developing the threshold,[3] with the AB 32 reduction requirements (2020) incorporated as a subset of EO S-3-05. EO S-3-05 sets an emission reduction

[3] SCAQMD, Draft Guidance Document, Interim CEQA Greenhouse Gas (GHG) Significance Threshold, Attachment E. October 2008. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf?sfvrsn=2

target of 80 percent below 1990 levels by 2050. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.4 AB 32 has the goal of achieving 1990 GHG levels by 2020.

- The SCAQMD industrial source threshold is appropriate for projects with both stationary and mobile sources, both of which are components of LAHD projects. CAPCOA guidance considers industrial projects to include substantial GHG emissions associated with mobile sources[5]. SCAQMD, on industrial projects for which it is the lead agency, uses the 10,000 mty threshold to determine CEQA significance by combining a project's stationary source and mobile source emissions. Although the threshold was originally developed for stationary sources, SCAQMD staff views the threshold as conservative for projects with both stationary and mobiles sources because it is applied to a larger set of emissions and therefore captures a greater percentage of projects than would be captured if the threshold was only used for stationary sources.[6] For example, in one of its recent EIRs, the SCAQMD applied the 10,000 mty threshold to a refinery project where the mobile source emissions would increase and the stationary source emissions (combined direct and indirect) would decrease relative to baseline. The mobile source emissions included construction equipment, on-road vehicles, and on- and off-site rail transport. Moreover, in the same EIR, the SCAQMD also applied the 10,000 mty threshold to its list of related cumulative projects, two of which were LAHD projects (SCIG and ILWU Local 13 Dispatch Hall) with dominant mobile source emissions.[7] The SCAQMD also specifically approved the use of the 10,000 mty threshold on another current Port CEQA project dominated by mobile sources (Berths 97-109 [China Shipping] Container Terminal Project Supplemental Environmental Impact Report).[8]
- The SCAQMD industrial source threshold is appropriate for projects with sources that use primarily diesel fuel. Although most of the sources that were considered by the SCAQMD in the development of the 10,000 mty threshold are natural gas-fueled,[9] both natural gas and diesel combustion produce CO_2 as the dominant GHG.[10] Furthermore, the conversion of all GHG species into a CO_2e ensures that the GHG emissions from any source, regardless of fuel type, can be evaluated equitably.

The SCAQMD industrial source threshold is conservative for LAHD projects. Based on the 10,000 mty threshold, it would capture approximately 90 percent of regulated, permitted industrial facilities subject to the SCAQMD's Annual Emission Reporting

[4] SCAQMD, personal communication between L. Granovsky/iLanco Environmental and Mike Krause/SCAQMD regarding the SCAQMD GHG significance threshold for industrial projects. July 29, 2016.

[5] CAPCOA Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. January, 2008.

[6] SCAQMD, personal communication between L. Granovsky/iLanco Environmental and Mike Krause/SCAQMD regarding the SCAQMD GHG significance threshold for industrial projects. July 29, 2016.

[7] SCAQMD. Tesoro Los Angeles Refinery EIR, Chapter 5. March 2016. http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2016/2844-deir-ch-5-(rev7).pdf?sfvrsn=2

[8] SCAQMD, meeting between Port of Los Angeles staff and consultants and SCAQMD staff regarding the China Shipping supplemental EIR project. December 9, 2015.

[9] SCAQMD, Draft Guidance Document, Interim CEQA Greenhouse Gas (GHG) Significance Threshold, Attachment E. October 2008. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf?sfvrsn=2

[10] The Climate Registry, *2016 Climate Registry Default Emission Factors*. April 19, 2016.

(AER) program (SCAQMD, 2008). LAHD projects subject to CEQA review usually far exceed this threshold because of their large size and large number of mobile sources such as ocean going vessels, drayage trucks, trains, and cargo handling equipment. A review of LAHD CEQA documents certified between 2007 and 2016[11] shows that the 10,000 mty threshold would have captured 98 percent of LAHD project CO_2e emissions.

After considering these guidelines and LAHD-specific climate change impact issues, LAHD has set the following thresholds for use in this EIR to determine the significance of proposed Project-related GHG impacts. The proposed Project or alternative would create a significant GHG impact if it:

GHG-1: Generates GHG emissions that, either directly or indirectly, exceed the SCAQMD 10,000 mty CO_2e threshold

Impacts under GHG-1 are determined by comparing the combined amortized construction and future operational emissions with the baseline scenario. Total construction emissions are amortized over the life of the proposed Project or alternative and included in the CEQA impact determination.

As noted above, CEQA Guideline Section 15064.4(b) provides that one factor to be considered in assessing the significance of GHG emissions on the environment is "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 taken into account by the SCAQMD in developing the 10,000 mty 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). Consequently, no CEQA significance assessment based upon 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 activities, features, mitigations and lease measures are consistent with federal, state or local plans, policies or regulations for the reduction of GHG emissions, as set forth below:

State CEQA Guidelines Section15126.2(a) identifies the need to evaluate potential impacts of locating development in areas that are vulnerable to climate change effects. The EIR "should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas)." Although no significance thresholds are defined for evaluating the potential impacts of locating development in areas that are vulnerable to climate change effects, the analysis addresses this evaluation qualitatively.

[11] Port of Los Angeles. CEQA/EIR Projects and Public Notices. https://www.portoflosangeles.org/environment/public_notices.asp. Projects Certified by the Board of Harbor Commissioners. Website accessed August 1, 2016. GHG emissions were not quantified in Port CEQA documents before 2007.

NEPA Effects

The USACE has established the following position under NEPA:

There are no science-based GHG significance thresholds nor has the federal government or the state adopted any regulations. In the absence of an adopted or science-based GHG standard, the USACE will not utilize the Port of Los Angeles' proposed GHG-1 CEQA significance threshold, propose a new GHG significance threshold, or make a NEPA impact determination for GHG emissions anticipated to result from the proposed Project or any of the alternatives. Rather, in compliance with the NEPA implementing regulations, the anticipated emissions relative to the NEPA baseline will be disclosed for the proposed Project and each alternative without expressing a judgment as to their significance.

On February 18, 2010 and December 18, 2014, the Council on Environmental Quality (CEQ) released its Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions and the Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, respectively. The CEQ guidance states that if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 mty or more of CO_2e on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision-makers and the public. Consistent with the CEQ guidance, this EIS contains a detailed assessment of GHG emissions associated with the proposed Project and alternatives.

3.5.5.4 Impact Determination

Proposed Project

Construction of the proposed Project would include improvements to Berths 226–229 and 230–232 involving dredging to increase the depth of the berths and the installation of sheet and/or king piles. All of the dredged material, approximately 38,000 cubic yards, would be disposed of at an approved site, which may include an ocean disposal site such as LA-2, an approved upland disposal location, or a combination of the two. Additional improvements at the terminal would include installation of up to five AMP boxes, relocation and demolition of the main gate, backland surface improvements, and delivery and installation of up to five new cranes. The proposed Project would be constructed starting in early 2018. Most of the dredging activities would occur in 2018.

Impact GHG-1: The proposed Project would generate GHG emissions, either directly or indirectly, that would exceed the SCAQMD 10,000 mty CO_2e threshold.

Tables 3.5-4A and 3.5-4B present amortized annual GHG emissions associated with construction of the proposed Project. Construction emissions were determined by adding direct and indirect GHG emissions associated with all construction elements and amortizing over the life of the proposed Project (30 years). Table 3.5-5 shows amortized annual GHG emissions associated with construction, annual GHG emissions associated with operational activities, and significance determinations.

Table 3.5-4A: Construction GHG Emissions without Mitigation – Proposed Project – Ocean Disposal (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	2,148
Marine Source Exhaust	477
On-road Construction-Related Vehicles	1,014
Worker Vehicles	21
Total Construction Year 2018	3,661
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction-Related Vehicles	118
Worker Vehicles	10
Total Construction Year 2019	1,089
Amortized Construction	158

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

1

Table 3.5-4B: Construction GHG Emissions without Mitigation – Proposed Project – Upland Disposal (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	2,546
Marine Source Exhaust	305
On-road Construction-Related Vehicles	2,076
Worker Vehicles	23
Total Construction Year 2018	4,951
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction-Related Vehicles	118
Worker Vehicles	10
Total Construction Year 2019	1,089
Amortized Construction	201

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

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Table 3.5-5: Construction and Operational GHG Emissions without Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				
Ocean Disposal				158
Upland Disposal				201
Year 2018				
Ships - Transit and Anchoring	51,596	1	3	52,335
Ships – Hoteling	8,417	<1	1	8,552
AMP Electricity Use	2,335	<1	<1	2,340
Tugboats	751	<1	<1	761
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	27,833	2	1	28,090
Switch Locomotives	261	<1	<1	263
Cargo Handling Equipment	14,798	<1	<1	14,893
On-terminal Electricity Use	4,420	<1	<1	4,429
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	163,140	5	7	167,362
With Ocean Disposal				
Total Construction and Operations Year 2018				167,520
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				-8,556
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989
Proposed Project Minus NEPA Baseline				-5,469
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2018				167,563
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				-8,513
Significance Threshold				10,000
Significant?				No

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				172,989
Proposed Project Minus NEPA Baseline				-5,426
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2019				
Ships - Transit and Anchoring	53,919	1	3	54,690
Ships – Hoteling	9,557	<1	1	9,707
AMP Electricity Use	2,517	<1	<1	2,523
Tugboats	793	<1	<1	802
Trucks	56,690	<1	2	57,215
Line Haul Locomotives	30,846	3	1	31,131
Switch Locomotives	279	<1	<1	282
Cargo Handling Equipment	18,475	1	<1	18,601
On-terminal Electricity Use	4,568	<1	<1	4,578
Worker Vehicles	3,198	<1	1	3,351
Total Operational Year 2019	**180,842**	**5**	**7**	**182,880**
With Ocean Disposal				
Total Construction and Operations Year 2019				183,039
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				6,962
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Proposed Project Minus NEPA Baseline				5,603
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2019				183,082
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				7,005
Significance Threshold				10,000
Significant?				No

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				177,435
Proposed Project Minus NEPA Baseline				5,646
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2026				
Ships - Transit and Anchoring	56,488	1	3	57,297
Ships – Hoteling	13,532	<1	1	13,740
AMP Electricity Use	5,310	<1	<1	5,321
Tugboats	793	<1	<1	802
Trucks	64,509	<1	2	65,094
Line Haul Locomotives	52,835	4	1	53,324
Switch Locomotives	410	<1	<1	413
Cargo Handling Equipment	26,244	1	1	26,424
On-terminal Electricity Use	5,506	<1	<1	5,518
Worker Vehicles	3,176	<1	1	3,365
Total Operational Year 2026	228,802	7	9	231,297
With Ocean Disposal				
Total Construction and Operations Year 2026				231,456
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				55,379
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Proposed Project Minus NEPA Baseline				54,937
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2026				231,499
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				55,422
Significance Threshold				10,000
Significant?				Yes

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				176,519
Proposed Project Minus NEPA Baseline				54,980
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2033				
Ships - Transit and Anchoring	75,206	2	4	76,283
Ships – Hoteling	16,741	<1	1	17,003
AMP Electricity Use	6,201	<1	<1	6,214
Tugboats	1,057	<1	<1	1,070
Trucks	67,734	<1	2	68,345
Line Haul Locomotives	247,324	20	7	249,609
Switch Locomotives	924	<1	<1	932
Cargo Handling Equipment	33,878	1	1	34,111
On-terminal Electricity Use	6,426	<1	<1	6,439
Worker Vehicles	3,331	<1	1	3,555
Total Operational Year 2033	458,823	24	15	463,561
With Ocean Disposal				
Total Construction and Operations Year 2033				463,720
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				287,643
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Proposed Project Minus NEPA Baseline				143,474
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2033				463,763
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				287,686
Significance Threshold				10,000
Significant?				Yes

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				320,246
Proposed Project Minus NEPA Baseline				143,517
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2038				
Ships - Transit and Anchoring	75,206	2	4	76,283
Ships – Hoteling	16,741	<1	1	17,003
AMP Electricity Use	6,201	<1	<1	6,214
Tugboats	1,057	<1	<1	1,070
Trucks	66,747	<1	2	67,351
Line Haul Locomotives	247,324	20	7	249,609
Switch Locomotives	924	<1	<1	932
Cargo Handling Equipment	33,878	1	1	34,111
On-terminal Electricity Use	6,426	<1	<1	6,439
Worker Vehicles	3,162	<1	1	3,386
Total Operational Year 2038	457,666	24	15	462,398
With Ocean Disposal				
Total Construction and Operations Year 2038				462,556
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				286,480
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Proposed Project Minus NEPA Baseline				143,161
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2038				462,599
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				286,523
Significance Threshold				10,000
Significant?				Yes

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				319,394
Proposed Project Minus NEPA Baseline				143,204
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are amortized over the life of the proposed Project (30 years) and added to each year of operational emissions.

On-terminal electricity use includes crane operation and high mast poles.

CEQA Impact Determination

Table 3.5-5 shows that the proposed Project's GHG emissions minus the CEQA baseline would exceed the GHG threshold of 10,000 mty in 2026, 2033, and 2038 operational analysis years. Emissions from all source types would increase over the life of the proposed Project because of terminal throughput increase. Proposed project GHG emissions would be significant under CEQA in 2026, 2033, and 2038 analysis years prior to mitigation.

Mitigation Measures

Mitigation measures MM AQ-2, MM AQ-6 and MM AQ-7 applied to the air quality impacts in Section 3.2, Air Quality and Meteorology, would also reduce GHG emissions. The other air quality mitigation measures in Section 3.2 are either proposed to reduce criteria pollutants and/or diesel particulate matter (DPM) and would not have a substantial impact on GHG emissions or could not be reasonably quantified.

In addition to the air quality mitigation measures identified above, mitigation measures MM GHG-1 and MM GHG-2, directed at GHG emissions reduction specifically, are applied. Lease measure LM GHG-1 would further reduce GHG emissions. Furthermore, LAHD's standard lease measure LM AQ-1 and lease measure LM AQ-2 would be included in the tenant's lease to further reduce future GHG emissions and serve to achieve the Port's air quality goals.

The following mitigation measure would reduce GHG emissions during proposed Project construction:

MM AQ-2: On-road Trucks Used during Construction. On-road trucks shall comply with EPA 2010 on-road emission standards or better, unless contractor can reasonably demonstrate that such equipment is unavailable to the satisfaction of LAHD.

The following mitigation measures would reduce GHG emissions during proposed Project operation:

MM GHG-1: LED Lighting. All fixtures on the high mast poles at the Everport Container Terminal shall be replaced with LED fixtures or a technology with similar energy-saving capabilities.

MM GHG-2: Solar Electricity. Photovoltaic panels shall be installed over the employee parking lot as part of the development of the 22 acres, pending a feasibility study.

The following lease measure could reduce GHG emissions during proposed Project operation:

LM GHG-1: GHG Credit Fund. Proposed Project GHG emissions are 278,708 metric tons of CO2e in the peak year of operations in 2038. They exceed the 10,000 metric ton CO2e significance threshold by 268,708 metric tons. Because operational GHG emissions exceed the significance threshold with the incorporation of all feasible mitigation measures, LAHD shall establish a carbon offset fund, which may be accomplished through a Memorandum of Understanding with the California Air Resources Board or another appropriate entity, to mitigate project GHG impacts to the maximum extent feasible. The fund shall be used for GHG-reducing projects and programs on Port of Los Angeles property. It shall be the responsibility of the Tenant to contribute to the fund. Fund contribution shall be $250,000, payable upon substantial completion of Project construction. $250,000 has been identified as the maximum feasible contribution level taking into account the cost of the proposed Project, including on-site GHG-reducing mitigation measures that the tenant will be required to implement (LED high mast lighting and solar panels over the employee parking lot). If LAHD is unable to establish the fund within a reasonable period of time, Tenant shall instead purchase credits from an approved GHG offset registry in the amount of $250,000.

Although mitigation measure MM GHG-2 and lease measure LM GHG-1 have been applied to the proposed Project, the emission reductions have not been quantified.

MM AQ-6: Vessel Speed Reduction Program (VSRP). Starting January 1, 2019 and thereafter, 95 percent of Evergreen ships calling at the Everport Container Terminal shall be required to comply with the expanded VSRP at 12 knots between 40 nm from Point Fermin and the Precautionary Area. Starting January 1, 2026, 95 percent of all ships calling at the Everport Container Terminal will follow this requirement. Alternative Compliance Plans will be considered where a different speed that would result in fewer emissions compared to the current speed limits.

Any alternative compliance plan shall be submitted to LAHD at least 90 days in advance for approval and shall be supported by data that demonstrates the ability of the alternative compliance plan for the specific vessel and type to achieve emissions reductions comparable to or greater than those achievable by compliance with VSRP. The alternative compliance plan shall be implemented once written notice of approval is granted by the LAHD.

MM AQ-7: **Alternative Maritime Power (AMP).** By 2020 or upon substantial completion of construction, 85 percent of Evergreen ships calling at the Everport Terminal must use AMP. By 2026, 95 percent of all ship calls at the Everport Container Terminal must use AMP or approved equivalent under the CARB Shore-Power Regulation. The equivalent alternative technology must, at a minimum, meet the emissions reductions that would be achieved from AMP.

In addition, the following air quality lease measures could reduce GHG emissions during proposed Project operation:

LM AQ-1: **Replacement of Equipment and Review of New Technology.** When the tenant needs to replace or turnover equipment in its fleet, the tenant shall meet with the LAHD to determine if something is feasible or technologically available that may result in fewer emissions. If any kind of technology becomes available and is shown to be as good as or better than the existing measure in terms of emissions reduction performance, the technology could replace the requirements of other mitigation measures pending approval by LAHD.

LAHD shall require the tenant to review any new emissions-reduction technology for feasibility and report back to LAHD every five years beginning five years after lease agreement if no new purchase or equipment turnover occurs sooner as noted in the abovementioned paragraph. If LAHD determines the technology is feasible in terms of cost and operations, the tenant shall work with LAHD to implement such technology.

LM AQ-2: **Priority Access System**. A priority access system shall be evaluated to identify one or more ways to provide preferential access to zero- and near-zero-emission trucks. The tenant shall provide a report to LAHD on preferential access system options by January 1, 2020.

Table 3.5-6A and Table 3.5-6B present GHG emissions following the application of quantifiable mitigation measures as well as amortized annual GHG emissions associated with construction of the proposed Project after mitigation. Construction emissions were determined by adding direct and indirect GHG emissions associated with all construction elements and amortizing over the life of the proposed Project (30 years). Table 3.5-7 shows amortized construction,

annual GHG emissions associated with operational activities, and significance determinations following mitigation.

Table 3.5-6A: Construction GHG Emissions with Mitigation – Proposed Project (mty) – Ocean Disposal

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	2,148
Marine Source Exhaust	477
On-road Construction-Related Vehicles	1,032
Worker Vehicles	21
Total Construction Year 2018	3,678[1]
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction-Related Vehicles	120
Worker Vehicles	10
Total Construction Year 2019	1,091
Amortized Construction	159

Notes: Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

[1] Mitigation to restrict the on-road truck fleet mix to 50 percent model year 2010 vehicles results in an increase in fuel consumption, which directly corresponds to increased CO_2e emissions.

Table 3.5-6B: Construction GHG Emissions with Mitigation – Proposed Project (mty) – Upland Disposal

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	2,546
Marine Source Exhaust	305
On-road Construction-Related Vehicles	2,112
Worker Vehicles	23
Total Construction Year 2018	4,986
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction-Related Vehicles	120
Worker Vehicles	10
Total Construction Year 2019	1,091
Amortized Construction	203

Notes: Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

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Table 3.5-7: Construction and Operational GHG Emissions with Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				
Ocean Disposal				159
Upland Disposal				203
Year 2018				
Ships - Transit and Anchoring	51,596	1	3	52,335
Ships – Hoteling	8,417	<1	1	8,552
AMP Electricity Use	2,335	<1	<1	2,340
Tugboats	751	<1	<1	761
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	27,833	2	1	28,090
Switch Locomotives	261	<1	<1	263
Cargo Handling Equipment	14,798	<1	<1	14,893
On-terminal Electricity Use	4,420	<1	<1	4,429
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	163,140	5	7	167,362
With Ocean Disposal				
Total Construction and Operations Year 2018				167,521
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				-8,556
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989
Proposed Project Minus NEPA Baseline				-5,469
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2018				167,564
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				-8,512
Significance Threshold				10,000
Significant?				No

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				172,989
Proposed Project Minus NEPA Baseline				-5,425
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2019				
Ships - Transit and Anchoring	53,398	1	3	54,163
Ships – Hoteling	9,408	<1	1	9,556
AMP Electricity Use	2,682	<1	<1	2,687
Tugboats	793	<1	<1	802
Trucks	56,690	<1	2	57,215
Line Haul Locomotives	30,846	3	1	31,131
Switch Locomotives	279	<1	<1	282
Cargo Handling Equipment	18,475	1	<1	18,601
On-terminal Electricity Use	3,311	<1	<1	3,318
Worker Vehicles	3,198	<1	1	3,351
Total Operational Year 2019	179,079	5	7	181,107
With Ocean Disposal				
Total Construction and Operations Year 2019				181,266
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				5,190
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Proposed Project Minus NEPA Baseline				3,831
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2019				181,310
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				5,233
Significance Threshold				10,000
Significant?				No

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				177,435
Proposed Project Minus NEPA Baseline				3,874
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2026				
Ships - Transit and Anchoring	55,974	1	3	56,777
Ships – Hoteling	12,292	<1	1	12,487
AMP Electricity Use	6,291	<1	<1	6,304
Tugboats	793	<1	<1	802
Trucks	64,509	<1	2	65,094
Line Haul Locomotives	52,835	4	1	53,324
Switch Locomotives	410	<1	<1	413
Cargo Handling Equipment	26,244	1	1	26,424
On-terminal Electricity Use	4,248	<1	<1	4,257
Worker Vehicles	3,176	<1	1	3,365
Total Operational Year 2026	226,772	7	9	229,247
With Ocean Disposal				
Total Construction and Operations Year 2026				229,406
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				53,330
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Proposed Project Minus NEPA Baseline				52,887
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2026				229,449
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				53,373
Significance Threshold				10,000
Significant?				Yes

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				176,519
Proposed Project Minus NEPA Baseline				52,930
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2033				
Ships - Transit and Anchoring	74,454	2	4	75,522
Ships – Hoteling	15,316	<1	1	15,561
AMP Electricity Use	7,344	<1	<1	7,359
Tugboats	1,057	<1	<1	1,070
Trucks	67,734	<1	2	68,345
Line Haul Locomotives	247,324	20	7	249,609
Switch Locomotives	924	<1	<1	932
Cargo Handling Equipment	33,878	1	1	34,111
On-terminal Electricity Use	5,168	<1	<1	5,179
Worker Vehicles	3,331	<1	1	3,555
Total Operational Year 2033	456,531	24	15	461,244
With Ocean Disposal				
Total Construction and Operations Year 2033				461,403
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				285,327
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Proposed Project Minus NEPA Baseline				141,157
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2033				461,447
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				285,370
Significance Threshold				10,000
Significant?				Yes

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				320,246
Proposed Project Minus NEPA Baseline				141,201
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2038				
Ships - Transit and Anchoring	69,260	2	4	70,327
Ships – Hoteling	15,056	<1	1	15,301
AMP Electricity Use	7,344	<1	<1	7,359
Tugboats	1,057	<1	<1	1,070
Trucks	66,747	<1	2	67,351
Line Haul Locomotives	247,324	20	7	249,609
Switch Locomotives	924	<1	<1	932
Cargo Handling Equipment	33,878	1	1	34,111
On-terminal Electricity Use	5,168	<1	<1	5,179
Worker Vehicles	3,162	<1	1	3,386
Total Operational Year 2038	449,919	24	15	454,626
With Ocean Disposal				
Total Construction and Operations Year 2038				454,784
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				278,708
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Proposed Project Minus NEPA Baseline				135,390
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2038				454,828
CEQA Impacts				
CEQA Baseline Emissions				176,076
Proposed Project Minus CEQA Baseline				278,752
Significance Threshold				10,000
Significant?				Yes

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation – Proposed Project (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				319,394
Proposed Project Minus NEPA Baseline				135,434
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are amortized over the life of the proposed Project (30 years) and added to each year of operational emissions.

On-terminal electricity use includes crane operation and high mast poles.

Residual Impacts

Impacts would be reduced but would remain significant and unavoidable under CEQA for the analysis years 2026, 2033 and 2038.

NEPA Impact Determination

USACE has established the position that there are no science-based GHG significance thresholds, nor has the federal government or the state adopted any by regulation. In the absence of an adopted or science-based GHG standard, in compliance with the CEQ and USACE NEPA implementing regulations, a significance determination regarding GHG emissions is not made under NEPA. However, consistent with CEQ guidance, although the proposed Project exceeds the CEQ reference level, this EIS contains a detailed assessment of GHG emissions.

Mitigation Measures

Mitigation measures are not applicable.

Residual Impacts

An impact determination is not applicable.

Informational Assessment: The proposed Project would not be consistent with certain statewide, regional and local plans and policies.

The State of California, the City of Los Angeles, and LAHD have adopted plans and policies to reduce GHG emissions.

None of these plans or policies constitutes regulations or requirements adopted to implement a statewide, regional or local plan for reduction or mitigation of greenhouse gas emissions. (See *Center for Biological Diversity v. Cal. Dept. of Fish and Wildlife (Newhall Ranch)* (2015) 62 Cal.4th 204, 223.) Therefore, a significance determination cannot be made using these factors.

Nevertheless, for informational purposes, this document provides a discussion of consistency with adopted statewide, regional and local plans and policies to reduce GHG emissions.

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:

- Senate Bill 32 (SB32)
  - 1990 levels by 2020
  - 40 percent below 1990 levels by 2030
- Assembly Bill 32 (AB 32)
  - 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 carbon dioxide equivalents (CO_2e) since 2005 through the LAHD municipal GHG inventory and the annual inventory of air emissions (see Figure 3.5-1). As illustrated below in Figure 3.5-2, Port-related GHG emissions started making significant reductions since 2006, reaching a maximum reduction in CO_2e of 15 percent from 1990 levels in 2013. Subsequently, 2014 and 2015 saw GHG levels rise due to a period of port congestion that arose from circumstances outside of the control of either the LAHD or its tenants. This event illustrates a major challenge related to managing GHG-related emissions, as events outside the control of LAHD or its individual tenants will continue to have a varying degree of impact on the progress of reduction efforts.

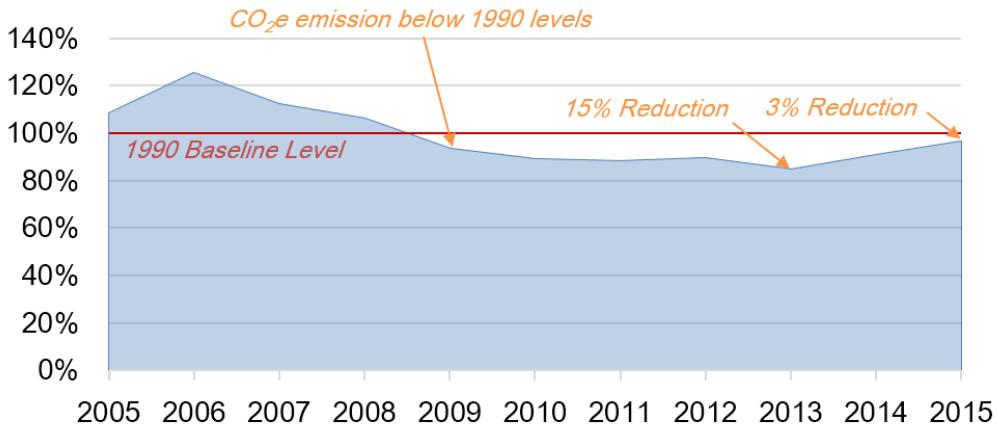

Figure 3.5-1: GHG Emissions 2005-2015

LAHD and its tenants have initiated a number of wide-ranging strategies to reduce all port-related GHGs, which includes the benefits associated with the Clean Air Action Plan (CAAP), Zero Emission Roadmap, 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 for 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. We anticipate these relationships will continue to produce benefits with regards to GHG emissions for the foreseeable future.

There is no single "silver bullet" emission reduction strategy that easily reduces the sources to meet the various interim targets let alone the final 80 percent reduction, so it will take continued research, evaluation, engagement, innovation, demonstrations, investment, and coordination/action to achieve the 2050 target. LAHD is playing a leading role in implementing innovative programs, promoting research, applying for grant funding (e.g. with our partners, and facilitating engagement and analysis on an international level).

Figure 3.5-2 below 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 3.5-2 are not project specific targets and that no specific project level regulations or requirements have been developed by agencies for implementation of these plans. Instead, these targets are goals 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.

As shown, LAHD emission inventories show that port-wide emissions have already met the SB 32 2020 target, even during the period of temporary congestion, with CO_2e emissions anticipated to return to pre-2014 trends starting in 2016.

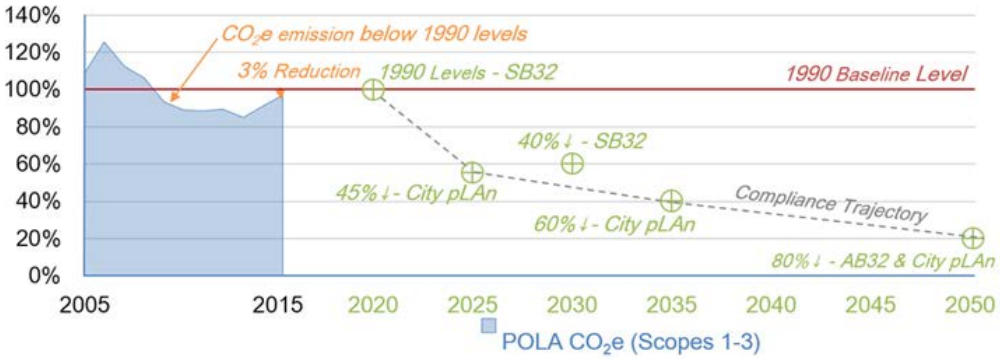

Figure 3.5-2: Actual GHG Emissions 2005-2015 & 2015-2050 GHG Compliance Trajectory

Nevertheless, with the very aggressive targets shown in the Figure 3.5-2 above, it is not possible at this time to determine whether Port-wide emissions or any particular Project applicant will be able to meet the compliance trajectories shown. Compliance will depend upon future regulations or requirements that may be adopted, future technologies that have not been identified or fully developed at this time, or any other Port-wide GHG reduction strategies that may be established. As a result, while LAHD will continue to work with its tenants to implement aggressive GHG reduction measures to meet the compliance

trajectory that is shown, LAHD cannot with certainty confirm compliance with these future plans and policies at this time.

Table 3.5-8 presents more detailed information on plans, and policies adopted for the purpose of reducing GHG emissions:

Table 3.5-8: Consideration of Key State and Local GHG-Reducing Plans and Policies

Plan or Policy	Plan/Policy Measure	Evaluation
EO S-3-05 (2005) established the following GHG emissions-reduction targets for California State agencies: (1) Year 2000 levels by 2010; (2) year 1990 levels by 2020; and (3) 80 percent below 1990 levels by 2050.	Established State-wide goals that are not directly applicable to a project-level analysis.	EO S-3-05 established State targets and directed State legislature to develop legislation to address those targets. The proposed Project analysis has quantified GHG impacts for 2020 and 2030 and has identified feasible mitigation measures. The analysis projects that impacts beyond 2030 would remain constant; this is a conservative assumption because it takes into account only GHG emission reduction technologies in existing regulations and does not take into account GHG emission reductions anticipated due to future regulatory development or future Port-wide GHG emission reduction efforts. However, as the proposed Project would exceed the SCAQMD significance threshold under GHG-1, and because EO S-3-05 targets were considered in developing the SCAQMD threshold, it was determined that the proposed Project would not be consistent with the State's GHG reduction goals established under EO S-3-05.
AB 32– California Global Warming Solutions Act (2006) codified the following S-3-05 targets: (1) Year 2000 levels by 2010; and (2) Year 1990 levels by 2020.	Established State-wide goals that are not directly applicable to a project-level analysis.	AB 32 codified S-3-05 targets through 2020 and directed State regulatory agencies to develop rules and regulations to meet the 2020 State targets. The proposed Project analysis has quantified GHG impacts for 2020 and has identified feasible mitigation measures. AB 32 did not identify project-level measures. However, because the proposed Project would exceed the SCAQMD significance threshold under GHG-1, and because AB 32 targets were considered in developing the SCAQMD threshold, it was determined that the proposed Project would not be consistent with the State's GHG reduction goals under AB 32.
ARB's AB 32 Scoping Plan (2008) set a Statewide roadmap for achieving the following AB 32 State targets: (1) Year 2000 levels by 2010; and (2) Year	The Scoping Plan includes general recommendations to reduce GHG emissions from various sources. The most relevant to the proposed Project are the	AB 32 Scoping Plan describes the State's approach to achieve the GHG emissions reduction goal to 1990 levels by 2020. The Scoping Plan's GHG reduction actions include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation fee regulation to fund

Table 3.5-8: Consideration of Key State and Local GHG-Reducing Plans and Policies

Plan or Policy	Plan/Policy Measure	Evaluation
1990 levels by 2020.	Goods Movement Recommendations.	the program. The Scoping Plan's reduction actions do not identify specific project-level measures. The Scoping Plan identified a discrete early action, regulation for Port operations. This action resulted in the promulgation of regulation for electrification of ship auxiliary engines while at berth, which reduces the GHG emissions associated with at berth use of ship engines. The proposed Project complies with programs such as CARB's At-Berth Regulation. However, because the proposed Project would exceed the SCAQMD significance threshold under GHG-1, and because AB 32 targets were considered in developing the SCAQMD threshold, it was determined that the proposed Project would not be consistent with the State's GHG reduction goals under AB 32 and would therefore not be consistent with the AB 32 Scoping Plan (2008).
AB 32 Scoping Plan Update (2014) builds upon the 2008 Scoping Plan with new strategies to achieve the following AB 32 State target: Year 1990 levels by 2020.	The Scoping Plan includes general recommendations to reduce GHG emissions from various sources.	AB 32 Scoping Plan Update (2014) highlights the State's progress toward meeting the 2020 GHG emission reduction goal, identifies funding opportunities to reduce GHG emissions through State planning and low carbon investments, identifies climate change priorities for 5 years, and sets the groundwork to reach long-term goals of EO S-3-05. The Scoping Plan Update (201) includes specific recommended actions for lead agencies, identifies possible regulatory actions for vehicles and fuels, and introduces the need for a Sustainable Freight Initiative and the 2014 Sustainable Freight Action Plan (technical assessments that identify near-term and 2020 actions for each freight sector). The Scoping Plan Update identifies the following key technology-specific objectives for the freight/transportation sector but does not identify specific direct project-level measures: • Accelerate the introduction and deployment of zero and near-zero emission trucks, including trucks capable of zero-emission miles. • Continue improving the efficiency of trucks (both engines and vehicles). • Support development and introduction of locomotives capable of zero emission track miles. • Accelerate cleanup of the existing locomotive fleet. • Increase near-dock rail in Oakland/Los Angeles/Long Beach.

Table 3.5-8: Consideration of Key State and Local GHG-Reducing Plans and Policies

Plan or Policy	Plan/Policy Measure	Evaluation
		• Reduce GHGs and criteria pollutants from ocean-going vessels. • Identify efficiency improvements on all levels (equipment, sector, and system). • Showcase strategies and best practices. The proposed Project complies with many of the Draft 2014 AB 32 Scoping Plan elements described above. However, because the proposed Project would exceed the SCAQMD significance threshold under GHG-1, and because AB 32 targets were considered in developing the SCAQMD threshold, it was determined that the proposed Project would not be consistent with the State's GHG reduction goals under AB 32 and would therefore not be consistent with the AB 32 Scoping Plan Update.
Sustainable Freight Action Plan EO B-32-15 (2015)	The objectives laid out in the Governor's Executive Order to reduce emissions in the freight sector and improve efficiency and reduce pollution of the freight transport system to meet 2030 targets.	The California Freight Action Plan was developed in conjunction with several state agencies and includes the following recommendations: • A long-term 2050 Vision and Guiding Principles for California's future freight transport system. • Targets for 2030 to guide the State toward meeting the Vision. • Opportunities to leverage State freight transport system investments. • Actions to initiate over the next five years to make progress towards the Targets and the Vision. • Pilot projects to achieve on-the-ground progress in the near-term. • Additional concepts for further exploration and development, if viable. There is no finding of consistency appropriate for the proposed Project because these are future goals and recommendations and a determination cannot be demonstrated at this time.
2017 Climate Change Scoping Plan Update (Draft)	The draft 2017 Scoping Plan Update includes general recommendations to reduce GHG emissions from various sources. The most relevant to the proposed Project are the Sustainable Freight Goals.	The California Air Resources Board (CARB) draft 2017 Climate Change Scoping Plan Update builds upon the existing AB 32 Scoping Plan, and provides further guidance to meet the new statewide greenhouse gas (GHG) reduction goal under SB 32 of 40 percent below 1990 emission levels by 2030. The draft Plan Update also discusses its relation to the 2050 GHG reduction target under the Governor's Executive Order B-30-15, which is 80 percent below 1990 levels. A final draft Scoping Plan Update is expected to go to the CARB board in June of 2017. The transportation sustainability guidance in the draft Plan Update notes that the state's transportation

Table 3.5-8: Consideration of Key State and Local GHG-Reducing Plans and Policies

Plan or Policy	Plan/Policy Measure	Evaluation
		system includes its 12 major ports, in addition to the state's vast network of roads and highways, 245 public use airports, and the nation's first high-speed rail system. The draft Plan Update notes that the state's transportation system, while providing benefits such as economic growth and greater accessibility, also has adverse consequences, including GHG emissions, air pollutants, and traffic congestion. The draft Plan Update identifies the transportation system, as a whole, as the largest emitter of GHG emissions in California. The draft Scoping Plan Update identifies the following technology-specific objectives for the freight/transportation sector but does not identify specific direct project-level measure. The draft Scoping Plan Update identifies a need for further action on Zero Emission Vehicles, and solicits input on additional policies to move toward a goal of 100 percent ZEV sales in the light-duty vehicle sector. The draft Scoping Plan Update concludes that most GHG reductions in the transportation sector will come from new technologies and low-carbon fuels, but also concludes that a reduction in Vehicle Miles Traveled ("VMT") is needed to enable the statewide 2030 GHG reduction goal. High-level objectives and goals set out in the draft Plan Update to reduce GHGs in the transportation sector include: • Update to the CEQA metric of transportation impacts, from level of service (LOS) to VMT, statewide. • Promote transportation fuel system infrastructure for electric, fuel-cell, and other emerging clean technologies. • Promote potential efficiency gains from automated transportation systems. • Continue research and development on transportation system infrastructure. The draft Scoping Plan Update includes general "Sustainable Freight Goals," including • Increase freight system efficiency of freight operators at specific facilities and along freight corridors such that more cargo can be moved with fewer emissions.

Table 3.5-8: Consideration of Key State and Local GHG-Reducing Plans and Policies

Plan or Policy	Plan/Policy Measure	Evaluation
		• Accelerate use of clean vehicle and equipment technologies and fuels of freight technologies, and continued development of renewable fuels. • Encourage state and federal incentive programs to continue supporting zero and non-zero pilot and demonstration projects. The proposed Project complies with many of the 2017 Climate Change Scoping Plan Updates (Draft) objectives and goals described above. However, because the proposed Project would exceed the SCAQMD significance threshold under GHG-1, and because AB 32 targets were considered in developing the SCAQMD threshold, it was determined that the proposed Project would not be consistent with the State's GHG reduction goals under AB 32 and would therefore not be consistent with the 2017 Climate Change Scoping Plan Updates (Draft) which builds on the AB 32 Scoping Plan.
EO B-30-15 established a Statewide GHG emissions-reduction target of 40 percent below 1990 levels by 2030.	Established State-wide goals that are not directly applicable to a project-level analysis.	EO B-30-15 established a State target of 40 percent below 1990 levels by 2030 and directed State legislature to develop legislation to address that State target. This target was established in order to ensure the State meets the EO S-3-05 target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. The proposed Project analysis has quantified GHG impacts for 2030 and has identified feasible mitigation measures. The analysis projects that impacts beyond 2030 would remain constant; this is a conservative assumption because it takes into account only GHG emission reduction technologies pursuant to existing regulations and does not take into account GHG emission reductions anticipated in future regulatory efforts. Similar to EO S-3-05, EO B-30-15 did not identify project-level measures. However, as the proposed Project would exceed the SCAQMD significance threshold under GHG-1, and because EO B-30-15 targets were considered in developing the SCAQMD threshold, it was determined that the proposed Project would not be consistent with the State's GHG reduction goals established under EO B-30-15.
SB 32 (2016) codified the EO B-30-15 target: 40 percent reduction below 1990 levels by 2030.	Established State-wide goals that are not directly applicable to a project-level analysis.	SB 32 codified EO B-30-15 target through 2030 and directed State regulatory agencies to develop rules and regulations to meet the 2030 State target but did not identify project-level measures. The proposed Project analysis has quantified GHG impacts for 2030 and has identified feasible mitigation measures.

Table 3.5-8: Consideration of Key State and Local GHG-Reducing Plans and Policies

Plan or Policy	Plan/Policy Measure	Evaluation
		Similar to AB 32, SB 32 did not identify project-level measures. However, because the proposed Project would exceed the SCAQMD significance threshold under GHG-1, and because EO B-30-15 target targets were considered in developing the SCAQMD threshold, it was determined that the proposed Project would not be consistent with the State's GHG reduction goals under EO B-30-15 and would therefore not be consistent with SB 32 which codifies EO B-30-15.
Southern California Association of Governments (SCAG) 2016-2040 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) (2016). Provides for development of a sustainable communities strategy in the context of the existing regional transportation planning process.	Not directly applicable to project-level analysis, but certain elements of the proposed Project serve to forward the RTP/SCS goals.	SCAG developed the 2016-2040 RTP/SCS with the primary goal of increasing mobility for the region's residents and visitors but also with an emphasis on sustainability, pursuant to SB 375.[12] Although SB 375 focuses on light-duty vehicle emissions, SCAG's RTP/SCS includes additional regional strategies directed at Goods Movement. The RTP/SCS Goods Movement Appendix identifies strategies for regional highway improvements, regional rail improvements (i.e., on-dock and near-dock rail), and San Pedro Bay ports access projects. The RTP/SCS Goods Movement Appendix also identifies goods movement environmental strategies such as the short-term deployment of commercially available lower-emission trucks and locomotives and the longer term strategy development of phased implementation of a zero- and near-zero emission freight system. The longer term strategies include technology and pilot studies, demonstration projects, regulatory development, and funding commitments. These reflect regional, industry-wide or port-wide strategies, but are not applicable to a project-level analysis. The Port has implemented several short and longer term strategies as part of the CAAP and CAAP Update as follows: (1) The Clean Truck Program limits Port access to 2007 or newer trucks; (2) The Sustainable Construction Guidelines limit Port access to 2010 or newer trucks (see mitigation measure MM AQ-2); (3) The Port's Technology Advancement Program evaluates and helps bring to market emerging and emission reducing technologies. The proposed Project would comply with CAAP measures, existing regulations that are applicable to

[12] SB 375 – Sustainable Communities and Climate Protection Act of 2008 set regional targets for GHG emissions reductions from passenger vehicle use for 2020 and 2035 for each region covered by one of the State's metropolitan planning organizations (MPO). SB 375 further required that SCAG include an SCS in the RTP that reduces GHG emissions from passenger vehicles.

Table 3.5-8: Consideration of Key State and Local GHG-Reducing Plans and Policies

Plan or Policy	Plan/Policy Measure	Evaluation
		project activities, and would, by law, comply with future regulatory requirements that are applicable to project activities. However, because the strategies outlined in the RTP/SCS are regional, industry-wide or port-wide and many of the strategies are long term, it is not possible to demonstrate consistency with the RTP/SCS at this time.
The Sustainable City pLAn (2015)	Not directly applicable to project-level analysis, but certain elements of the proposed Project serve to forward the goals.	The City of Los Angeles plan contains strategies to address current and future climate change impacts and reduce air quality emissions. The pLAn sets aspirations for 14 target areas. Of these, the following are applicable to port activities: energy-efficient buildings, carbon and climate leadership, mobility and transit. The proposed Project will continue to further these goals and aspirations but because these are future targets, it is not possible to demonstrate consistency at this time.
San Pedro Ports Clean Air Action Plan (2007) and Update (2010)	NGHG reductions are considered as co-benefits of CAAP measures.	Although the CAAP and Update are primarily designed to reduce criteria pollutants and air toxics, the following strategies also reduce GHG emissions: OGV1: Vessel Speed Reduction (VSR) Program OGV2: Reduction of At-Berth OGV Emissions HC1: Performance Standards for Harbor Craft RL1: PHL Rail Switch Engine Modification RL2: Existing Class I Railroad Operations RL3: New and Redeveloped Rail Yards Of these measures, OGV1 is applicable to the proposed Project. Mitigation measure MM AQ-6 addresses CAAP measure OGV1, and MM AQ-7 addresses CAAP measure OGV2. CAAP measure HC1 is a port-wide measure; RL1 through 3 do not apply to the proposed Project. The proposed Project is consistent with the 2007 and 2010 CAAP.
Port of Los Angeles "Actions to Reduce Greenhouse Gas Emissions by 2050" (Submitted to City of Los Angeles, 2014)	Not applicable to project-level analysis, but certain elements of the proposed Project serve to forward the goals.	The document outlines actions/strategies that are either being implemented or evaluated to continue the reduction of GHG emissions and meet a target of 35 percent below 1990 levels by 2035 and 80 percent below 1990 levels by 2050. Table 3 of the document lists GHG emissions reduction strategies for Port operations as well as the applicable implementing programs. The document does not identify new programs or measures. It lists existing initiatives and reiterates the Port's commitment to continued collaboration with the international maritime community, as well as between all stakeholders and regulators.

Table 3.5-8: Consideration of Key State and Local GHG-Reducing Plans and Policies

Plan or Policy	Plan/Policy Measure	Evaluation
		The proposed Project will continue to further these goals and aspirations but because these are future targets, it is not possible to demonstrate consistency at this time.

The proposed Project would be inconsistent with certain state and local plans and policies, identified in Table 3.5-8.

Sea Level Rise

With respect to adaptation to climate change effects, the Rand Corporation recently completed a study (Lempert et al. 2012) of potential SLR impacts on Port facilities that focused on four areas at different elevations and their potential exposure to SLR. The four areas studied are the low side of the container ship terminals, the upper side of the terminals, Berths 206–209, and the Alameda and Harry Bridges crossing. The study goes beyond the theoretical SLR inundation scenarios that have been generated (and are available online[13]) from the upper ranges of SLR in studies conducted by the Pacific Institute and the California Sea Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (Co-CAT) in the *State of California Sea Level Rise Interim Guidance Document* (2010).

The Rand study takes into account the range of the SLR estimates in the Co-CAT document (up to 55 inches by 2100) and expands the range by another 12 inches to allow for uncertainty related to a broad circulation shift in the Pacific Ocean resulting from climate change later in the 21st century. The Rand study assigns probabilities to the SLR ranges (with an approximately equal distribution of probabilities) and then determines whether investments should or should not be made to upgrade sea armoring at the four facility areas. Upgrades to sea armoring means the addition of physical structures intended to protect infrastructure or shoreline against anticipated seal level rise. The study concludes by stating that a decision to harden sea armoring at the next decision point for upgrade (i.e., when a new project is being constructed) should be seriously considered only for the lower lying Alameda and Harry Bridges crossing area, which is 6.13 feet above mean sea level.

The higher elevation areas reviewed in the study include Berths 206–209 (7.62 feet above MSL), lower terminal (9.20 feet above MSL), and upper terminal (12.14 feet above MSL). The proposed Project would be located in the lower terminal area.

The Rand study also performed a detailed analysis of key variables that could affect the decision to armor during construction. For the lower terminal area, which is where the proposed Project would be located, the study indicates that the Port could consider upgrading costs of approximately 1 percent of a project's total when the project's life is greater than 50 years and there is a forecast trend in increased daily storminess due to climate change (a 3 percent increase in the daily sea-level anomaly). Currently, there is no

[13] http://cal-adapt.org/sealevel/

scientific consensus regarding whether daily storminess will increase or decrease in the 21st century for the Southern California region.

The conclusions from the Rand study, when applied to the Project area, demonstrate that additional protection from SLR are not warranted at this time given the current state of scientific understanding of SLR and related climatic variables. Therefore, SLR is not addressed further in this section. In addition, as noted above, the Rand study is consistent with state guidance because it uses the Co-CAT document for its central range of SLR estimates.

Alternative 1 – No Federal Action

Alternative 1 is a NEPA-required no action alternative. This alternative (which represents the NEPA baseline) includes the activities that would occur absent a USACE (Department of the Army – DA) permit but could include improvements that require a local permit. Absent a DA permit, no dredging, dredged material disposal, in-water pile installation, or new crane installation would occur. The existing terminal is berth-constrained, and its ability to handle larger ships (compared to current terminal constraints) would be facilitated by activities that require a DA permit (dredging, in-water pile driving, and new cranes). The No Federal Action Alternative includes 23.5 acres of additional backlands to improve efficiency. The additional backland area would not change the capacity of the existing terminal.

The site would continue to operate as an approximately 229-acre container terminal where cargo containers are loaded to/from vessels, temporarily stored on backlands, and transferred to/from trucks or on-dock rail. In addition, the No Federal Action alternative would include a lease extension to 2038, which would require a local action, but not a federal action. Based on the throughput projections, the Everport Container Terminal is expected to operate at its capacity of approximately 1,818,000 TEUs by 2038. AMP facilities have been installed and are currently in use at Berths 227 (two AMP vaults) and 230 (one AMP vault). Five additional AMP vaults would also be included at the wharf under the No Federal Action Alternative.

Impact GHG-1: Alternative 1 would generate GHG emissions, either directly or indirectly, that would exceed the SCAQMD 10,000 mty CO_2e threshold.

Table 3.5-9 presents amortized annual GHG emissions associated with construction of Alternative 1. Construction emissions were determined by adding direct and indirect GHG emissions associated with all construction elements and amortizing over the life of the proposed Project (30 years). Table 3.5-10 shows amortized annual GHG emissions associated with construction, annual GHG emissions associated with operational activities, and significance determinations.

Table 3.5-9: Construction GHG Emissions without Mitigation – Alternative 1 (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	609
Marine Source Exhaust	0
On-road Construction-Related Vehicles	584
Worker Vehicles	15
Total Construction Year 2018	1,208
Construction Year 2019	
Off-road Construction Equipment Exhaust	108
Marine Source Exhaust	0
On-road Construction-Related Vehicles	75
Worker Vehicles	5
Total Construction Year 2019	187
Amortized Construction	47

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

1

Table 3.5-10: Construction and Operational GHG Emissions without Mitigation – Alternative 1 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				47
Year 2018				
Ships - Transit and Anchoring	53,821	1	3	54,591
Ships – Hoteling	8,780	<1	1	8,921
AMP Electricity Use	2,436	<1	<1	2,441
Tugboats	784	<1	<1	793
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	30,064	2	1	30,342
Switch Locomotives	272	<1	<1	274
Cargo Handling Equipment	15,262	<1	<1	15,361
On-terminal Electricity Use	4,509	<1	<1	4,519
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	170,996	5	7	172,942
Total Construction and Operations Year 2018				172,989
CEQA Impacts				
CEQA Baseline Emissions				176,076

Table 3.5-10: Construction and Operational GHG Emissions without Mitigation – Alternative 1 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 1 Minus CEQA Baseline				-3,087
Significance Threshold				10,000
Significant?				No
Year 2019				
Ships - Transit and Anchoring	54,433	1	3	55,212
Ships – Hoteling	8,880	<1	1	9,022
AMP Electricity Use	2,464	<1	<1	2,469
Tugboats	793	<1	<1	802
Trucks	56,315	<1	2	56,836
Line Haul Locomotives	30,693	2	1	30,977
Switch Locomotives	275	<1	<1	277
Cargo Handling Equipment	15,611	1	<1	15,712
On-terminal Electricity Use	4,534	<1	<1	4,544
Worker Vehicles	3,176	<1	1	3,329
Total Operational Year 2019	177,173	5	7	179,179
Total Construction and Operations Year 2019				179,226
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 1 Minus CEQA Baseline				3,150
Significance Threshold				10,000
Significant?				No
Year 2026				
Ships - Transit and Anchoring	55,448	1	3	56,242
Ships – Hoteling	9,074	<1	1	9,219
AMP Electricity Use	2,545	<1	<1	2,550
Tugboats	793	<1	<1	802
Trucks	50,297	<1	2	50,753
Line Haul Locomotives	32,958	3	1	33,263
Switch Locomotives	318	<1	<1	321
Cargo Handling Equipment	17,464	1	<1	17,577
On-terminal Electricity Use	4,794	<1	<1	4,804
Worker Vehicles	2,703	<1	1	2,865
Total Operational Year 2026	176,394	5	7	178,397
Total Construction and Operations Year 2026				178,443
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 1 Minus CEQA Baseline				2,367
Significance Threshold				10,000

Table 3.5-10: Construction and Operational GHG Emissions without Mitigation – Alternative 1 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Significant?				No
Year 2033				
Ships - Transit and Anchoring	73,567	2	4	74,621
Ships – Hoteling	12,535	<1	1	12,736
AMP Electricity Use	3,698	<1	<1	3,706
Tugboats	1,057	<1	<1	1,070
Trucks	48,181	<1	2	48,617
Line Haul Locomotives	148,712	12	4	150,087
Switch Locomotives	706	<1	<1	712
Cargo Handling Equipment	22,206	1	<1	22,349
On-terminal Electricity Use	5,461	<1	<1	5,472
Worker Vehicles	2,790	<1	1	2,979
Total Operational Year 2033	318,915	15	11	322,350
Total Construction and Operations Year 2033				322,396
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 1 Minus CEQA Baseline				146,320
Significance Threshold				10,000
Significant?				Yes
Year 2038				
Ships - Transit and Anchoring	73,567	2	4	74,621
Ships – Hoteling	12,535	<1	1	12,736
AMP Electricity Use	3,698	<1	<1	3,706
Tugboats	1,057	<1	<1	1,070
Trucks	47,477	<1	2	47,907
Line Haul Locomotives	148,712	12	4	150,087
Switch Locomotives	706	<1	<1	712
Cargo Handling Equipment	22,206	1	<1	22,349
On-terminal Electricity Use	5,461	<1	<1	5,472
Worker Vehicles	2,648	<1	1	2,837
Total Operational Year 2038	318,068	15	11	321,498
Total Construction and Operations Year 2038				321,545
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 1 Minus CEQA Baseline				145,468
Significance Threshold				10,000
Significant?				Yes

Table 3.5-10: Construction and Operational GHG Emissions without Mitigation – Alternative 1 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e

Notes:

Alternative 1 is the same as the NEPA baseline; amortized construction emissions are the same as those presented for the NEPA baseline in Section 3.5.5.2, per Table 3.5-2.

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are amortized over the life of the proposed Project (30 years) and added to each year of operational emissions.

On-terminal electricity use includes crane operation and high mast poles.

CEQA Impact Determination

Table 3.5-10 shows that construction and operational GHG emissions minus the CEQA baseline under Alternative 1 would exceed the GHG threshold of 10,000 mty in the 2033 and 2038 analysis years. Emissions from OGVs, CHEs, and locomotives would increase between 2019 and 2033 because of the increase in terminal throughput. Alternative 1 GHG emissions would be significant under CEQA in 2033 and 2038 analysis years prior to mitigation.

Mitigation Measures

Mitigation measures MM AQ-2, MM AQ-6, MM AQ-7, and MM GHG-1 through MM GHG-2, would be applied to Alternative 1. Lease measures LM GHG-1, LM AQ-1, and LM AQ-2 would also be applied. Table 3.5-11 presents GHG emissions following the application of quantifiable mitigation measures (MM AQ-2, MM AQ-6, MM AQ-7, and MM GHG-1). Because mitigated Alternative 1 is the same as the NEPA baseline, amortized construction emissions are the same as those presented for the NEPA baseline in Section 3.5.5.2, per Table 3.5-2. Construction emissions were determined by adding direct and indirect GHG emissions associated with all construction elements and amortizing over the life of the alternative (30 years).

Table 3.5-11: Construction and Operational GHG Emissions with Mitigation – Alternative 1 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				47
Year 2018				
Ships - Transit and Anchoring	53,821	1	3	54,591
Ships – Hoteling	8,780	<1	1	8,921
AMP Electricity Use	2,436	<1	<1	2,441
Tugboats	784	<1	<1	793
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	30,064	2	1	30,342
Switch Locomotives	272	<1	<1	274
Cargo Handling Equipment	15,262	<1	<1	15,361
On-terminal Electricity Use	4,509	<1	<1	4,519

Table 3.5-11: Construction and Operational GHG Emissions with Mitigation – Alternative 1 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	170,996	5	7	172,942
Total Construction and Operations Year 2018				172,989
CEQA Impacts				
CEQA Baseline Emissions				176,075
Alternative 1 Minus CEQA Baseline				-3,088
Significance Threshold				10,000
Significant?				No
Year 2019				
Ships - Transit and Anchoring	53,906	1	3	54,679
Ships – Hoteling	8,707	<1	1	8,848
AMP Electricity Use	2,639	<1	<1	2,645
Tugboats	793	<1	<1	802
Trucks	56,315	<1	2	56,836
Line Haul Locomotives	30,693	2	1	30,977
Switch Locomotives	275	<1	<1	277
Cargo Handling Equipment	15,611	1	<1	15,712
On-terminal Electricity Use	3,276	<1	<1	3,283
Worker Vehicles	3,176	<1	1	3,329
Total Operational Year 2019	175,392	5	7	177,388
Total Construction and Operations Year 2019				177,435
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 1 Minus CEQA Baseline				1,359
Significance Threshold				10,000
Significant?				No
Year 2026				
Ships - Transit and Anchoring	54,909	1	3	55,697
Ships – Hoteling	8,460	<1	1	8,599
AMP Electricity Use	3,046	<1	<1	3,052
Tugboats	793	<1	<1	802
Trucks	50,297	<1	2	50,753
Line Haul Locomotives	32,958	3	1	33,263
Switch Locomotives	318	<1	<1	321
Cargo Handling Equipment	17,464	1	<1	17,577
On-terminal Electricity Use	3,536	<1	<1	3,544
Worker Vehicles	2,703	<1	1	2,865
Total Operational Year 2026	174,484	5	7	176,472

Table 3.5-11: Construction and Operational GHG Emissions with Mitigation – Alternative 1 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Total Construction and Operations Year 2026				176,519
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 1 Minus CEQA Baseline				443
Significance Threshold				10,000
Significant?				No
Year 2033				
Ships - Transit and Anchoring	72,858	2	4	73,903
Ships – Hoteling	11,667	<1	1	11,858
AMP Electricity Use	4,402	<1	<1	4,412
Tugboats	1,057	<1	<1	1,070
Trucks	48,181	<1	2	48,617
Line Haul Locomotives	148,712	12	4	150,087
Switch Locomotives	706	<1	<1	712
Cargo Handling Equipment	22,206	1	<1	22,349
On-terminal Electricity Use	4,203	<1	<1	4,212
Worker Vehicles	2,790	<1	1	2,979
Total Operational Year 2033	316,783	15	11	320,199
Total Construction and Operations Year 2033				320,246
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 1 Minus CEQA Baseline				144,170
Significance Threshold				10,000
Significant?				Yes
Year 2038				
Ships - Transit and Anchoring	72,858	2	4	73,903
Ships – Hoteling	11,667	<1	1	11,858
AMP Electricity Use	4,402	<1	<1	4,412
Tugboats	1,057	<1	<1	1,070
Trucks	47,477	<1	2	47,907
Line Haul Locomotives	148,712	12	4	150,087
Switch Locomotives	706	<1	<1	712
Cargo Handling Equipment	22,206	1	<1	22,349
On-terminal Electricity Use	4,203	<1	<1	4,212
Worker Vehicles	2,648	<1	1	2,837
Total Operational Year 2038	315,937	15	11	319,348
Total Construction and Operations Year 2038				319,394

Table 3.5-11: Construction and Operational GHG Emissions with Mitigation – Alternative 1 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 1 Minus CEQA Baseline				143,318
Significance Threshold				10,000
Significant?				Yes

Notes:

Alternative 1 is the same as the NEPA baseline; amortized construction emissions are the same as those presented for the NEPA baseline in Section 3.5.5.2, per Table 3.5-2.

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are amortized over the life of the proposed Project (30 years) and added to each year of operational emissions.

On-terminal electricity use includes crane operation and high mast poles.

Residual Impacts

Impacts would be reduced but would remain significant and unavoidable under CEQA.

NEPA Impact Determination

Alternative 1 would include only backlands improvements and roadway reconfiguration improvements. No construction of in water or over-water features would occur under Alternative 1. The No Federal Action Alternative would involve the same construction activities as would occur under the NEPA baseline. Therefore, there would be no incremental difference between Alternative 1 and the NEPA baseline, and GHG emissions under Alternative 1 would not exceed the CEQ reference level of 25,000 mty CO_2e. Nonetheless, USACE has established the position that there are no science-based GHG significance thresholds, nor has the federal government or the state adopted any by regulation. In the absence of an adopted or science-based GHG standard, and consistent with CEQ guidance, although the proposed Project exceeds the CEQ reference level, this EIS contains a detailed assessment of GHG emissions.

Mitigation Measures

Mitigation measures are not applicable.

Residual Impacts

An impact determination is not applicable.

Alternative 2 – No Project

Alternative 2 is a CEQA-only alternative. The No Project Alternative is not evaluated under NEPA because NEPA requires an evaluation of the No Federal Action Alternative (see Section 2.9.1.2).

Under Alternative 2, none of the proposed construction activities would occur in water or in water-side or backland areas. Neither terminal improvements nor increases in backland acreage would occur. No raising of crane and no new cranes would be added and no

dredging would occur. The current lease that expires in 2028 has an option for a ten-year extension, which would mean the existing terminal could operate through 2038.

Under the No Project Alternative, the existing Everport Container Terminal would continue to operate as an approximately 205-acre container terminal. Based on the throughput projections for the Port, the Everport Container Terminal is expected to operate at its existing capacity of approximately 1,818,000 TEUs in 2038. AMP facilities have been installed and are currently in use at Berths 227 (two existing AMP vaults) and 230 (one existing AMP vault).

Any future legally enacted Port-wide environmental program, such as tariff change to support the CAAP measure, would be applied to the No Project Alternative, although generally applicable tariff changes that conflict with the terms of an individual operating lease would not apply. In addition, any adopted rules or regulations, such as from SCAQMD or other regulatory agencies, would be applied to the No Project Alternative.

Impact GHG-1: Alternative 2 would generate GHG emissions, either directly or indirectly, that would exceed the SCAQMD 10,000 mty CO_2e threshold.

Table 3.5-12 presents annual GHG emissions associated with operational activities of Alternative 2. Because Alternative 2 is the No Project Alternative, there is no construction associated with Alternative 2.

Table 3.5-12: Operational GHG Emissions – Alternative 2 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Year 2018				
Ships - Transit and Anchoring	53,821	1	3	54,591
Ships – Hoteling	8,780	<1	1	8,921
AMP Electricity Use	2,436	<1	<1	2,441
Tugboats	784	<1	<1	793
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	30,064	2	1	30,342
Switch Locomotives	272	<1	<1	274
Cargo Handling Equipment	15,262	1	<1	15,361
On-terminal Electricity Use	4,509	<1	<1	4,519
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	170,996	5	7	172,942
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 2 Minus CEQA Baseline				-3,134
Significance Threshold				10,000
Significant?				No
Year 2019				
Ships - Transit and Anchoring	54,433	1	3	55,212
Ships – Hoteling	8,880	<1	1	9,022
AMP Electricity Use	2,464	<1	<1	2,469

Table 3.5-12: Operational GHG Emissions – Alternative 2 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Tugboats	793	<1	<1	802
Trucks	56,315	<1	1	56,836
Line Haul Locomotives	30,693	2	1	30,977
Switch Locomotives	275	<1	<1	277
Cargo Handling Equipment	15,611	1	<1	15,712
On-terminal Electricity Use	4,534	<1	<1	4,544
Worker Vehicles	3,176	<1	1	3,329
Total Operational Year 2019	177,173	5	7	179,179
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 2 Minus CEQA Baseline				3,103
Significance Threshold				10,000
Significant?				No
Year 2026				
Ships - Transit and Anchoring	55,448	1	3	56,242
Ships – Hoteling	9,074	<1	1	9,219
AMP Electricity Use	2,545	<1	<1	2,550
Tugboats	793	<1	<1	802
Trucks	50,297	<1	2	50,753
Line Haul Locomotives	32,958	3	1	33,263
Switch Locomotives	318	<1	<1	321
Cargo Handling Equipment	17,464	1	<1	17,577
On-terminal Electricity Use	4,794	<1	<1	4,804
Worker Vehicles	2,703	<1	1	2,865
Total Operational Year 2026	176,394	5	7	178,397
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 2 Minus CEQA Baseline				2,320
Significance Threshold				10,000
Significant?				No
Year 2033				
Ships - Transit and Anchoring	73,567	2	4	74,621
Ships – Hoteling	12,535	<1	1	12,736
AMP Electricity Use	3,698	<1	<1	3,706
Tugboats	1,057	<1	<1	1,070
Trucks	48,181	<1	2	48,617
Line Haul Locomotives	148,712	12	4	150,087
Switch Locomotives	706	<1	<1	712
Cargo Handling Equipment	22,206	1	<1	22,349

Table 3.5-12: Operational GHG Emissions – Alternative 2 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
On-terminal Electricity Use	5,461	<1	<1	5,472
Worker Vehicles	2,790	<1	1	2,979
Total Operational Year 2033	318,915	15	11	322,350
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 2 Minus CEQA Baseline				146,274
Significance Threshold				10,000
Significant?				Yes
Year 2038				
Ships - Transit and Anchoring	73,567	2	4	74,621
Ships – Hoteling	12,535	<1	1	12,736
AMP Electricity Use	3,698	<1	<1	3,706
Tugboats	1,057	<1	<1	1,070
Trucks	47,477	<1	2	47,907
Line Haul Locomotives	148,712	12	4	150,087
Switch Locomotives	706	<1	<1	712
Cargo Handling Equipment	22,206	1	<1	22,349
On-terminal Electricity Use	5,461	<1	<1	5,472
Worker Vehicles	2,648	<1	1	2,837
Total Operational Year 2038	318,068	15	11	321,498
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 2 Minus CEQA Baseline				145,422
Significance Threshold				10,000
Significant?				Yes

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
On-terminal electricity use includes crane operation and high mast poles.

CEQA Impact Determination

Table 3.5-12 shows that operational GHG emissions minus the CEQA baseline under Alternative 2 would exceed the GHG threshold of 10,000 mty in the 2033 and 2038 analysis years. Emissions for all source categories, except trucks and worker vehicles, would increase over the life of Alternative 2 because of the increase in terminal throughput. Alternative 2 GHG emissions would be significant under CEQA in 2033 and 2038 analysis years.

Mitigation Measures

There are no project components or discretionary actions under this alternative; therefore, no mitigation is applicable or required.

Residual Impacts

Impacts would be significant and unavoidable under CEQA.

NEPA Impact Determination

NEPA requires the analysis of a No Federal Action Alternative (see Alternative 1). The impacts of the No Project Alternative are not required to be analyzed under NEPA. As stated above, there is no significance threshold for NEPA; and as such, an impact determination, mitigation measures and residual impacts are not applicable.

Alternative 3 – Reduced Project: Reduced Wharf Improvements

Under Alternative 3, there would be two operating berths after construction, similar to the proposed Project; but Berths 230-232 would remain at the existing depth (-45 feet plus two feet of overdepth), which would eliminate the need for sheet pile placement at this operating berth. Under this alternative, dredging along Berths 226-229 would occur as described for the proposed Project. This alternative would require less dredging (by approximately 8,000 cubic yards for a total of about 30,000 cubic yards) and less sheet pile driving and a slightly shorter construction period than the proposed Project. Based on the throughput projections, this alternative is expected to operate at its capacity of approximately 2,225,000 TEUs by 2038, similar to the proposed Project. However, while the terminal could handle similar levels of cargo, the reduced project alternative would not achieve the same level of efficient operations as achieved by the proposed Project. This alternative would include the raising of up to five existing cranes and adding five new cranes. Berths 226-229 would accommodate the largest vessels (16,000 TEUs). The existing design depth that would remain at Berths 230-232 would only be capable of handling vessels up to 8,000 TEUs. Other proposed Project elements, such as installation of AMP and backland improvements would be implemented under this alternative. Under this alternative, 208 vessels would call on the terminal by 2038, which is the same number or annual vessel calls as the proposed Project.

Impact GHG-1: Alternative 3 would generate GHG emissions, either directly or indirectly, that would exceed the SCAQMD 10,000 mty CO_2e threshold.

Table 3.5-13A and Table 3.5-13B present amortized annual GHG emissions associated with construction of Alternative 3. Construction emissions were determined by adding direct and indirect GHG emissions associated with all construction elements and amortizing over the life of Alternative 3 (30 years). Table 3.5-14 shows amortized annual GHG emissions associated with construction, annual GHG emissions associated with operational activities, and significance determinations.

Table 3.5-13A: Construction GHG Emissions without Mitigation – Alternative 3 – Ocean Disposal (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	1,642
Marine Source Exhaust	340
On-road Construction Vehicles	1,009
Worker Vehicles	21
Total Construction Year 2018	3,012
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction Vehicles	118
Worker Vehicles	10
Total Construction Year 2019	1,089
Amortized Construction	137

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

1

Table 3.5-13B: Construction GHG Emissions without Mitigation – Alternative 3 – Upland Disposal (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	1,829
Marine Source Exhaust	186
On-road Construction Vehicles	1,883
Worker Vehicles	22
Total Construction Year 2018	3,919
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction Vehicles	118
Worker Vehicles	10
Total Construction Year 2019	1,089
Amortized Construction	167

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

2

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				
Ocean Disposal				137
Upland Disposal				167
Year 2018				
Ships - Transit and Anchoring	51,596	1	3	52,335
Ships – Hoteling	8,417	<1	1	8,552
AMP Electricity Use	2,335	<1	<1	2,340
Tugboats	751	<1	<1	761
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	27,833	2	1	28,090
Switch Locomotives	261	<1	<1	263
Cargo Handling Equipment	14,798	<1	<1	14,893
On-terminal Electricity Use	2,082	<1	<1	2,091
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	163,140	5	7	165,024
With Ocean Disposal				
Total Construction and Operations Year 2018				165,160
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				-10,916
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989
Alternative 3 Minus NEPA Baseline				-7,829
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2018				165,191
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				-10,886
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 3 Minus NEPA Baseline				-7,799
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2019				
Ships - Transit and Anchoring	49,182	1	3	49,889
Ships – Hoteling	9,575	<1	1	9,728
AMP Electricity Use	2,411	<1	<1	2,416
Tugboats	793	<1	<1	802
Trucks	55,131	<1	2	55,642
Line Haul Locomotives	29,341	3	1	29,612
Switch Locomotives	272	<1	<1	274
Cargo Handling Equipment	17,059	1	<1	17,173
On-terminal Electricity Use	4,509	<1	<1	4,519
Worker Vehicles	3,151	<1	1	3,303
Total Operational Year 2019	171,424	5	7	173,357
With Ocean Disposal				
Total Construction and Operations Year 2019				173,494
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				-2,583
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Alternative 3 Minus NEPA Baseline				-3,942
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2019				173,524
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				-2,552
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative Minus NEPA Baseline				-3,912
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2026				
Ships - Transit and Anchoring	51,047	1	3	51,780
Ships – Hoteling	12,045	<1	1	12,232
AMP Electricity Use	4,920	<1	<1	4,930
Tugboats	793	<1	<1	802
Trucks	61,173	<1	2	61,727
Line Haul Locomotives	47,895	4	1	48,337
Switch Locomotives	389	<1	<1	392
Cargo Handling Equipment	23,604	1	1	23,763
On-terminal Electricity Use	5,343	<1	<1	5,354
Worker Vehicles	3,066	<1	1	3,248
Total Operational Year 2026	210,274	7	8	212,567
With Ocean Disposal				
Total Construction and Operations Year 2026				212,704
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				36,628
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Alternative 3 Minus NEPA Baseline				36,185
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2026				212,734
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				36,658
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 3 Minus NEPA Baseline				36,215
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2033				
Ships - Transit and Anchoring	68,912	2	4	69,901
Ships – Hoteling	15,094	<1	1	15,328
AMP Electricity Use	5,728	<1	<1	5,740
Tugboats	1,057	<1	<1	1,070
Trucks	63,246	<1	2	63,817
Line Haul Locomotives	222,374	18	6	224,429
Switch Locomotives	874	<1	<1	882
Cargo Handling Equipment	30,365	1	1	30,570
On-terminal Electricity Use	6,204	<1	<1	6,217
Worker Vehicles	3,213	<1	1	3,429
Total Operational Year 2033	417,067	22	14	421,383
With Ocean Disposal				
Total Construction and Operations Year 2033				421,520
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				245,444
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Alternative 3 Minus NEPA Baseline				101,274
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2033				421,550
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				245,474
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 3 Minus NEPA Baseline				101,304
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2038				
Ships - Transit and Anchoring	68,912	2	4	69,901
Ships – Hoteling	15,094	<1	1	15,328
AMP Electricity Use	5,728	<1	<1	5,740
Tugboats	1,057	<1	<1	1,070
Trucks	62,324	<1	2	62,888
Line Haul Locomotives	222,374	18	6	224,429
Switch Locomotives	874	<1	<1	882
Cargo Handling Equipment	30,365	1	1	30,570
On-terminal Electricity Use	6,204	<1	<1	6,217
Worker Vehicles	3,049	<1	1	3,266
Total Operational Year 2038	415,982	22	14	420,291
With Ocean Disposal				
Total Construction and Operations Year 2038				420,428
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				244,351
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Alternative 3 Minus NEPA Baseline				101,033
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2038				420,458
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				244,381
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 3 Minus NEPA Baseline				101,063

CEQA Impact Determination

Table 3.5-14 shows that construction and operational GHG emissions minus the CEQA baseline under Alternative 3 would exceed the GHG threshold of 10,000 mty in 2026, 2033, and 2038 analysis years. Because Berths 230–232 would not be improved under this alternative, larger vessels would not be able to berth at Berths 230–232, and a greater fraction of smaller vessels as compared with larger vessels would be needed to accommodate the anticipated cargo increase, resulting in increased emissions. However, Alternative 3 would still result in lower GHG emissions levels than those of the proposed Project. Emissions for all source types, except worker vehicles, would increase over the life of Alternative 3 because of terminal throughput increase. Alternative 3 GHG emissions would be significant under CEQA in 2026, 2033, and 2038 analysis years prior to mitigation.

Mitigation Measures

The same mitigation measures identified for the proposed Project (i.e., MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1 through MM GHG-2) would also be applied to Alternative 3. Lease measures LM GHG-1, LM AQ-1, and LM AQ-2 would also be applied. Table 3.5-15A and Table 3.5-15B present amortized annual GHG emissions with mitigation associated with construction of Alternative 3. Table 3.5-16 shows amortized annual GHG emissions associated with construction, annual GHG emissions associated with operational activities, and significance determinations after mitigation.

Table 3.5-15A: Construction GHG Emissions With Mitigation – Alternative 3 – Ocean Disposal (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	1,642
Marine Source Exhaust	340
On-road Construction Vehicles	1,027
Worker Vehicles	21
Total Construction Year 2018	3,029[1]
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction Vehicles	120
Worker Vehicles	10
Total Construction Year 2019	1,091
Amortized Construction	137

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

[1] Mitigation to restrict the on-road truck fleet mix to 50 percent model year 2010 vehicles results in an increase in fuel consumption, which directly corresponds to increased CO_2e emissions.

1

Table 3.5-15B: Construction GHG Emissions With Mitigation – Alternative 3 – Upland Disposal (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	1,829
Marine Source Exhaust	186
On-road Construction Vehicles	1,915
Worker Vehicles	22
Total Construction Year 2018	3,952
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction Vehicles	120
Worker Vehicles	10
Total Construction Year 2019	1,091
Amortized Construction	168

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

2

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				
Ocean Disposal				137
Upland Disposal				168
Year 2018				
Ships - Transit and Anchoring	51,596	1	3	52,335
Ships - Hoteling	8,417	<1	1	8,552
AMP Electricity Use	2,335	<1	<1	2,340
Tugboats	751	<1	<1	761
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	27,833	2	1	28,090
Switch Locomotives	261	<1	<1	263
Cargo Handling Equipment	14,798	<1	<1	14,893
On-terminal Electricity Use	2,082	<1	<1	2,091
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	163,140	5	7	165,024
With Ocean Disposal				
Total Construction and Operations Year 2018				165,161
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				-10,915
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989
Alternative 3 Minus NEPA Baseline				-7,828
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2018				165,192
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				-10,885
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 3 Minus NEPA Baseline				-7,798
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2019				
Ships - Transit and Anchoring	48,704	1	3	49,405
Ships - Hoteling	9,426	<1	1	9,577
AMP Electricity Use	2,571	<1	<1	2,576
Tugboats	793	<1	<1	802
Trucks	55,131	<1	2	55,642
Line Haul Locomotives	29,341	3	1	29,612
Switch Locomotives	272	<1	<1	274
Cargo Handling Equipment	17,059	1	<1	17,173
On-terminal Electricity Use	3,252	<1	<1	3,258
Worker Vehicles	3,151	<1	1	3,303
Total Operational Year 2019	169,699	5	7	171,623
With Ocean Disposal				
Total Construction and Operations Year 2019				171,760
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				-4,316
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Alternative 3 Minus NEPA Baseline				-5,675
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2019				171,791
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				-4,285
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 3 Minus NEPA Baseline				-5,644
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2026				
Ships - Transit and Anchoring	50,547	1	3	51,275
Ships - Hoteling	10,907	<1	1	11,081
AMP Electricity Use	5,820	<1	<1	5,833
Tugboats	793	<1	<1	802
Trucks	61,173	<1	2	61,727
Line Haul Locomotives	47,895	4	1	48,337
Switch Locomotives	389	<1	<1	392
Cargo Handling Equipment	23,604	1	1	23,763
On-terminal Electricity Use	4,085	<1	<1	4,094
Worker Vehicles	3,066	<1	1	3,248
Total Operational Year 2026	208,279	7	8	210,553
With Ocean Disposal				
Total Construction and Operations Year 2026				210,690
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				34,614
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Alternative 3 Minus NEPA Baseline				34,171
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2026				210,721
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				34,645
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 3 Minus NEPA Baseline				34,202
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2033				
Ships - Transit and Anchoring	68,173	2	4	69,153
Ships - Hoteling	13,786	<1	1	14,006
AMP Electricity Use	6,773	<1	<1	6,788
Tugboats	1,057	<1	<1	1,070
Trucks	63,246	<1	2	63,817
Line Haul Locomotives	222,374	18	6	224,429
Switch Locomotives	874	<1	<1	882
Cargo Handling Equipment	30,365	1	1	30,570
On-terminal Electricity Use	4,946	<1	<1	4,957
Worker Vehicles	3,213	<1	1	3,429
Total Operational Year 2033	414,808	22	14	419,100
With Ocean Disposal				
Total Construction and Operations Year 2033				419,237
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				243,161
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Alternative 3 Minus NEPA Baseline				98,991
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2033				419,268
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				243,191
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 3 Minus NEPA Baseline				99,022
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2038				
Ships - Transit and Anchoring	68,173	2	4	69,153
Ships - Hoteling	13,786	<1	1	14,006
AMP Electricity Use	6,773	<1	<1	6,788
Tugboats	1,057	<1	<1	1,070
Trucks	62,324	<1	2	62,888
Line Haul Locomotives	222,374	18	6	224,429
Switch Locomotives	874	<1	<1	882
Cargo Handling Equipment	30,365	1	1	30,570
On-terminal Electricity Use	4,946	<1	<1	4,957
Worker Vehicles	3,049	<1	1	3,266
Total Operational Year 2038	413,722	21	14	418,007
With Ocean Disposal				
Total Construction and Operations Year 2038				418,145
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				242,068
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Alternative 3 Minus NEPA Baseline				98,750
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2038				418,175
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 3 Minus CEQA Baseline				242,099
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation – Alternative 3 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 3 Minus NEPA Baseline				98,781
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are amortized over the life of the proposed Project (30 years) and added to each year of operational emissions.

On-terminal electricity use includes crane operation and high mast poles.

Residual Impacts

Impacts would be reduced but would remain significant and unavoidable under CEQA.

NEPA Impact Determination

As stated above, there is no significance threshold for NEPA; and as such, an impact determination for GHG-1 is not applicable for Alternative 3. However, consistent with CEQ guidance, although the proposed Project exceeds the CEQ reference level, this EIS contains a detailed assessment of GHG emissions.

Mitigation Measures

Mitigation measures are not applicable.

Residual Impacts

An impact determination is not applicable.

Alternative 4 – Reduced Project: No Backland Improvements

Under Alternative 4 there would be two operating berths after construction, similar to the proposed Project. This alternative would require the same dredging as the proposed Project. Up to five of the existing cranes would be raised and five new cranes installed, as well as AMP. This alternative would not include any backland expansion. Based on the throughput projections, this alternative is expected to operate at its capacity of 2,115,133 TEUs by 2038, slightly less than the proposed Project. However, while the terminal could handle similar levels of cargo, this reduced project alternative would not achieve the same level of efficient operations as achieved by the proposed Project. This alternative would accommodate the largest vessels (16,000 TEUs) at Berths 226-229. The new design depth at Berths 230-232 would be capable of handling vessels up to 10,000 TEUs. Under this alternative, 208 vessels would call on the terminal in 2038, which is the same as the proposed Project.

Impact GHG-1: Alternative 4 would generate GHG emissions, either directly or indirectly, that would exceed the SCAQMD 10,000 mty CO_2e threshold.

Tables 3.5-17A and Table 3.5-17B present amortized annual GHG emissions associated with construction of Alternative 4. Construction emissions were determined by adding direct and indirect GHG emissions associated with all construction elements and amortizing over the life of the proposed Project (30 years). Table 3.5-18 shows amortized annual GHG emissions associated with construction, annual GHG emissions associated with operational activities, and significance determinations.

Table 3.5-17A: Construction GHG Emissions without Mitigation – Alternative 4 – Ocean Disposal (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	1,539
Marine Source Exhaust	477
On-road Construction-Related Vehicles	430
Worker Vehicles	6
Total Construction Year 2018	2,452
Construction Year 2019	
Off-road Construction Equipment Exhaust	53
Marine Source Exhaust	800
On-road Construction-Related Vehicles	44
Worker Vehicles	5
Total Construction Year 2019	902
Amortized Construction	112

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

Table 3.5-17B: Construction GHG Emissions without Mitigation – Alternative 4 – Upland Disposal (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	1,937
Marine Source Exhaust	305
On-road Construction-Related Vehicles	1,492
Worker Vehicles	8
Total Construction Year 2018	3,742
Construction Year 2019	
Off-road Construction Equipment Exhaust	53
Marine Source Exhaust	800
On-road Construction-Related Vehicles	44
Worker Vehicles	5
Total Construction Year 2019	902
Amortized Construction	155

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

1

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				
Ocean Disposal				112
Upland Disposal				155
Year 2018				
Ships - Transit and Anchoring	51,596	1	3	52,335
Ships – Hoteling	8,417	<1	1	8,552
AMP Electricity Use	2,335	<1	<1	2,340
Tugboats	751	<1	<1	761
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	27,833	2	1	28,090
Switch Locomotives	261	<1	<1	263
Cargo Handling Equipment	14,798	<1	<1	14,893
On-terminal Electricity Use	2,082	<1	<1	2,091
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	163,140	5	7	165,024

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
With Ocean Disposal				
Total Construction and Operations Year 2018				165,135
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				-10,941
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989
Alternative 4 Minus NEPA Baseline				-7,854
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2018				165,178
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				-10,898
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989
Alternative 4 Minus NEPA Baseline				-7,811
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2019				
Ships - Transit and Anchoring	51,644	1	3	52,403
Ships – Hoteling	8,755	<1	1	8,894
AMP Electricity Use	2,190	<1	<1	2,195
Tugboats	793	<1	<1	802
Trucks	53,496	<1	2	53,992
Line Haul Locomotives	27,654	2	1	27,910
Switch Locomotives	264	<1	<1	266
Cargo Handling Equipment	16,298	1	<1	16,406
On-terminal Electricity Use	4,447	<1	<1	4,456
Worker Vehicles	3,108	<1	1	3,257
Total Operational Year 2019	168,669	5	7	170,581

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
With Ocean Disposal				
Total Construction and Operations Year 2019				170,693
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				-5,383
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Alternative 4 Minus NEPA Baseline				-6,742
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2019				170,736
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				-5,340
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Alternative 4 Minus NEPA Baseline				-6,699
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2026				
Ships - Transit and Anchoring	56,112	1	3	56,914
Ships – Hoteling	11,447	<1	1	11,623
AMP Electricity Use	3,637	<1	<1	3,645
Tugboats	793	<1	<1	802
Trucks	57,658	<1	2	58,180
Line Haul Locomotives	42,942	4	1	43,338
Switch Locomotives	367	<1	<1	370
Cargo Handling Equipment	21,900	1	<1	22,047
On-terminal Electricity Use	5,172	<1	<1	5,183
Worker Vehicles	2,955	<1	1	3,131
Total Operational Year 2026	202,982	6	8	205,233

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
With Ocean Disposal				
Total Construction and Operations Year 2026				205,345
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				29,269
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Alternative 4 Minus NEPA Baseline				28,826
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2026				205,388
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				29,312
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Alternative 4 Minus NEPA Baseline				28,869
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2033				
Ships - Transit and Anchoring	72,526	2	4	73,565
Ships – Hoteling	15,534	<1	1	15,777
AMP Electricity Use	5,695	<1	<1	5,707
Tugboats	1,057	<1	<1	1,070
Trucks	58,245	<1	2	58,771
Line Haul Locomotives	197,798	16	5	199,626
Switch Locomotives	822	<1	<1	829
Cargo Handling Equipment	28,082	1	1	28,270
On-terminal Electricity Use	5,971	<1	<1	5,984
Worker Vehicles	3,078	<1	1	3,285
Total Operational Year 2033	388,809	20	13	392,883

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
With Ocean Disposal				
Total Construction and Operations Year 2033				392,995
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				216,918
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Alternative 4 Minus NEPA Baseline				72,749
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2033				393,038
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				216,961
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Alternative 4 Minus NEPA Baseline				72,792
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2038				
Ships - Transit and Anchoring	72,526	2	4	73,565
Ships – Hoteling	15,534	<1	1	15,777
AMP Electricity Use	5,695	<1	<1	5,707
Tugboats	1,057	<1	<1	1,070
Trucks	57,395	<1	2	57,915
Line Haul Locomotives	197,798	16	5	199,626
Switch Locomotives	822	<1	<1	829
Cargo Handling Equipment	28,082	1	1	28,270
On-terminal Electricity Use	5,971	<1	<1	5,984
Worker Vehicles	2,921	<1	1	3,129
Total Operational Year 2038	387,803	20	13	391,871

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
With Ocean Disposal				
Total Construction and Operations Year 2038				391,983
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				215,907
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Alternative 4 Minus NEPA Baseline				72,588
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2038				392,026
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				215,950
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Alternative 4 Minus NEPA Baseline				72,631
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
Construction emissions are amortized over the life of the proposed Project (30 years) and added to each year of operational emissions.
On-terminal electricity use includes crane operation and high mast poles.

CEQA Impact Determination

Table 3.5-18 shows that construction and operational GHG emissions minus the CEQA baseline under Alternative 4 would exceed the GHG threshold of 10,000 mty in 2026, 2033, and 2038 analysis years prior to mitigation.

Mitigation Measures

The same mitigation measures identified for the proposed Project (i.e., MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1 through MM GHG-2) would also be applied to Alternative 4 along with lease measures LM GHG-1, LM AQ-1, and LM AQ-2. Table 3.5-19A and Table 3.5-19B present amortized annual GHG emissions associated with construction of Alternative 4, following application of quantifiable mitigation measure (MM AQ-2). Table 3.5-20 presents the combined amortized annual GHG emissions associated with construction and annual GHG emissions associated with operational activities, following quantifiable mitigation (MM AQ-6, MM AQ-7, and MM GHG-1).

Table 3.5-19A: Construction GHG Emissions with Mitigation – Alternative 4 (mty) – Ocean Disposal

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	1,539
Marine Source Exhaust	477
On-road Construction-Related Vehicles	437[1]
Worker Vehicles	6
Total Construction Year 2018	2,459[1]
Construction Year 2019	
Off-road Construction Equipment Exhaust	53
Marine Source Exhaust	800
On-road Construction-Related Vehicles	45
Worker Vehicles	5
Total Construction Year 2019	903[1]
Amortized Construction	112[1]

Notes: Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

[1] Mitigation to restrict the on-road truck fleet mix to 50 percent model year 2010 vehicles results in an increase in fuel consumption, which directly corresponds to increased CO_2e emissions. value of "0" indicates a number smaller than 1. An entry of "-" indicates inapplicability.

Table 3.5-19B: Construction GHG Emissions with Mitigation – Alternative 4 (mty) – Upland Disposal

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	1,937
Marine Source Exhaust	305
On-road Construction-Related Vehicles	1,517
Worker Vehicles	8
Total Construction Year 2018	3,767
Construction Year 2019	
Off-road Construction Equipment Exhaust	53
Marine Source Exhaust	800
On-road Construction-Related Vehicles	45
Worker Vehicles	5
Total Construction Year 2019	903
Amortized Construction	156

Notes: Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

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Table 3.5-20: Construction and Operational GHG Emissions with Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				
Ocean Disposal				112
Upland Disposal				156
Year 2018				
Ships - Transit and Anchoring	51,596	1	3	52,335
Ships - Hoteling	8,417	<1	1	8,552
AMP Electricity Use	2,335	<1	<1	2,340
Tugboats	751	<1	<1	761
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	27,833	2	1	28,090
Switch Locomotives	261	<1	<1	263
Cargo Handling Equipment	14,798	<1	<1	14,893
On-terminal Electricity Use	2,082	<1	<1	2,091
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	163,140	5	7	165,024
With Ocean Disposal				
Total Construction and Operations Year 2018				165,136

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				-10,941
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989
Alternative 4 Minus NEPA Baseline				-7,854
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2018				165,179
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				-10,897
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989
Alternative 4 Minus NEPA Baseline				-7,810
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2019				
Ships - Transit and Anchoring	51,182	1	3	51,916
Ships – Hoteling	8,620	<1	1	8,758
AMP Electricity Use	2,340	<1	<1	2,345
Tugboats	793	<1	<1	802
Trucks	53,496	<1	2	53,992
Line Haul Locomotives	27,654	2	1	27,910
Switch Locomotives	264	<1	<1	266
Cargo Handling Equipment	16,298	1	<1	16,406
On-terminal Electricity Use	3,189	<1	<1	3,196
Worker Vehicles	3,108	<1	1	3,257
Total Operational Year 2019	166,945	5	7	168,848
With Ocean Disposal				
Total Construction and Operations Year 2019				168,960

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				-7,116
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Alternative 4 Minus NEPA Baseline				-8,475
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2019				169,004
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				-7,073
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Alternative 4 Minus NEPA Baseline				-8,432
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2026				
Ships - Transit and Anchoring	55,528	1	3	56,322
Ships – Hoteling	10,597	<1	1	10,764
AMP Electricity Use	4,323	<1	<1	4,332
Tugboats	793	<1	<1	802
Trucks	57,658	<1	2	58,180
Line Haul Locomotives	42,942	4	1	43,338
Switch Locomotives	367	<1	<1	370
Cargo Handling Equipment	21,900	1	<1	22,047
On-terminal Electricity Use	3,914	<1	<1	3,922
Worker Vehicles	2,955	<1	1	3,131
Total Operational Year 2026	200,976	6	8	203,210
With Ocean Disposal				
Total Construction and Operations Year 2026				203,322

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				27,245
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Alternative 4 Minus NEPA Baseline				26,802
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2026				203,365
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				27,289
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Alternative 4 Minus NEPA Baseline				26,846
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2033				
Ships - Transit and Anchoring	71,816	2	4	72,846
Ships – Hoteling	14,242	<1	1	14,470
AMP Electricity Use	6,736	<1	<1	6,750
Tugboats	1,057	<1	<1	1,070
Trucks	58,245	<1	2	58,771
Line Haul Locomotives	197,798	16	5	199,626
Switch Locomotives	822	<1	<1	829
Cargo Handling Equipment	28,082	1	1	28,270
On-terminal Electricity Use	4,714	<1	<1	4,724
Worker Vehicles	3,078	<1	1	3,285
Total Operational Year 2033	386,589	19	13	390,637
With Ocean Disposal				
Total Construction and Operations Year 2033				390,752

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				214,676
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Alternative 4 Minus NEPA Baseline				70,506
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2033				390,796
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				214,719
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Alternative 4 Minus NEPA Baseline				70,550
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2038				
Ships - Transit and Anchoring	71,816	2	4	72,846
Ships - Hoteling	14,242	<1	1	14,470
AMP Electricity Use	6,736	<1	<1	6,750
Tugboats	1,057	<1	<1	1,070
Trucks	57,395	<1	2	57,915
Line Haul Locomotives	197,798	16	5	199,626
Switch Locomotives	822	<1	<1	829
Cargo Handling Equipment	28,082	1	1	28,270
On-terminal Electricity Use	4,714	<1	<1	4,724
Worker Vehicles	2,921	<1	1	3,129
Total Operational Year 2038	385,583	19	13	389,628
With Ocean Disposal				
Total Construction and Operations Year 2038				389,740

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation – Alternative 4 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				213,664
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Alternative 4 Minus NEPA Baseline				70,346
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2038				389,784
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 4 Minus CEQA Baseline				213,707
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Alternative 4 Minus NEPA Baseline				70,389
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are amortized over the life of the proposed Project (30 years) and added to each year of operational emissions.

On-terminal electricity use includes crane operation and high mast poles.

Residual Impacts

Impacts would be reduced but would remain significant and unavoidable under CEQA.

NEPA Impact Determination

As stated above, there is no significance threshold for NEPA; and as such, an impact determination for GHG-1 is not applicable for the proposed Project and all project alternatives. However, consistent with CEQ guidance, although the proposed Project

exceeds the CEQ reference level, this EIS contains a detailed assessment of GHG emissions.

Mitigation Measures

Mitigation measures are not applicable.

Residual Impacts

An impact determination is not applicable.

Alternative 5 – Expanded On-Dock Railyard: Wharf and Backland Improvements with an Expanded TICTF

Under this alternative, there would be two operating berths after construction, similar to the proposed Project. This alternative would require the same dredging as the proposed Project. This alternative would accommodate the largest vessels (16,000 TEUs) at Berths 226-229. The new design depth at Berths 230-232 would be capable of handling vessels up to 10,000 TEUs. Based on the throughput projections, this alternative is expected to operate at its capacity of approximately 2,379,525 TEUs by 2038, the same as the proposed Project. Under this project alternative, the terminal could handle similar levels of cargo as the proposed Project, but would have added capacity at the TICTF and be able to transport a greater number of containers via rail than the proposed Project. Under this alternative, 208 vessels would call on the terminal in 2038, for the same as the proposed Project. Additionally, because this alternative would have the same number of operating berths as the proposed Project, this alternative would result in a maximum of two peak day ship calls (over a 24-hour period), the same as for the proposed Project.

Impact GHG-1: Alternative 5 would generate GHG emissions, either directly or indirectly, that would exceed the SCAQMD 10,000 mty CO_2e threshold.

Table 3.5-21A and Table 3.5-21B present amortized annual GHG emissions associated with construction of the Alternative 5. Construction emissions were determined by adding direct and indirect GHG emissions associated with all construction elements and amortizing over the life of the proposed Project (30 years). Table 3.5-22 shows amortized annual GHG emissions associated with construction, annual GHG emissions associated with operational activities, and significance determinations.

Table 3.5-21A: Construction GHG Emissions without Mitigation – Alternative 5 – Ocean Disposal (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	2,569
Marine Source Exhaust	477
On-road Construction-Related Vehicles	1,128
Worker Vehicles	28
Total Construction Year 2018	4,202
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction-Related Vehicles	118
Worker Vehicles	10
Total Construction Year 2019	1,089
Amortized Construction	176

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

Table 3.5-21B: Construction GHG Emissions without Mitigation – Alternative 5 – Upland Disposal (mty)

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	2,967
Marine Source Exhaust	305
On-road Construction-Related Vehicles	2,190
Worker Vehicles	30
Total Construction Year 2018	5,492
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction-Related Vehicles	118
Worker Vehicles	10
Total Construction Year 2019	1,089
Amortized Construction	219

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

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Table 3.5-22: Construction and Operational GHG Emissions without Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				
Ocean Disposal				176
Upland Disposal				219
Year 2018				
Ships - Transit and Anchoring	51,596	1	3	52,335
Ships – Hoteling	8,417	<1	1	8,552
AMP Electricity Use	2,335	<1	<1	2,340
Tugboats	751	<1	<1	761
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	27,833	2	1	28,090
Switch Locomotives	261	<1	<1	263
Cargo Handling Equipment	14,798	<1	<1	14,893
On-terminal Electricity Use	2,082	<1	<1	2,091
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	163,140	5	7	165,024
With Ocean Disposal				
Total Construction and Operations Year 2018				165,200
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				-10,876
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989
Alternative 5 Minus NEPA Baseline				-7,789
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2018				165,243
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				-10,833
Significance Threshold				10,000
Significant?				No

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				172,989
Alternative 5 Minus NEPA Baseline				-7,746
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2019				
Ships - Transit and Anchoring	53,919	1	3	54,690
Ships – Hoteling	9,557	<1	1	9,707
AMP Electricity Use	2,517	<1	<1	2,523
Tugboats	793	<1	<1	802
Trucks	56,690	<1	2	57,215
Line Haul Locomotives	30,846	3	1	31,131
Switch Locomotives	279	<1	<1	282
Cargo Handling Equipment	18,475	1	<1	18,601
On-terminal Electricity Use	4,568	<1	<1	4,578
Worker Vehicles	3,198	<1	1	3,351
Total Operational Year 2019	180,842	5	7	182,880
With Ocean Disposal				
Total Construction and Operations Year 2019				183,057
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				6,980
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Alternative 5 Minus NEPA Baseline				5,621
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2019				183,100
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				7,023
Significance Threshold				10,000

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Alternative 5 Minus NEPA Baseline				5,664
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2026				
Ships - Transit and Anchoring	56,488	1	3	57,297
Ships – Hoteling	13,532	<1	1	13,740
AMP Electricity Use	5,310	<1	<1	5,321
Tugboats	793	<1	<1	802
Trucks	64,509	<1	2	65,094
Line Haul Locomotives	52,835	4	1	53,324
Switch Locomotives	410	<1	<1	413
Cargo Handling Equipment	26,244	1	1	26,424
On-terminal Electricity Use	5,506	<1	<1	5,518
Worker Vehicles	3,176	<1	1	3,365
Total Operational Year 2026	228,802	7	9	231,297
With Ocean Disposal				
Total Construction and Operations Year 2026				231,474
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				55,398
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Alternative 5 Minus NEPA Baseline				54,955
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2026				231,517
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				55,441

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Alternative 5 Minus NEPA Baseline				54,998
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2033				
Ships - Transit and Anchoring	75,206	2	4	76,283
Ships – Hoteling	16,741	<1	1	17,003
AMP Electricity Use	6,201	<1	<1	6,214
Tugboats	1,057	<1	<1	1,070
Trucks	66,412	<1	2	67,012
Line Haul Locomotives	248,116	20	7	250,408
Switch Locomotives	924	<1	<1	932
Cargo Handling Equipment	33,878	1	1	34,111
On-terminal Electricity Use	6,426	<1	<1	6,439
Worker Vehicles	3,340	<1	1	3,564
Total Operational Year 2033	458,301	24	15	463,036
With Ocean Disposal				
Total Construction and Operations Year 2033				463,213
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				287,136
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Alternative 5 Minus NEPA Baseline				142,967
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2033				463,256
CEQA Impacts				
CEQA Baseline Emissions				176,076

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Alternative 5 Minus CEQA Baseline				287,179
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Alternative 5 Minus NEPA Baseline				143,010
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2038				
Ships - Transit and Anchoring	75,206	2	4	76,283
Ships – Hoteling	16,741	<1	1	17,003
AMP Electricity Use	6,201	<1	<1	6,214
Tugboats	1,057	<1	<1	1,070
Trucks	65,443	<1	2	66,036
Line Haul Locomotives	248,116	20	7	250,408
Switch Locomotives	924	<1	<1	932
Cargo Handling Equipment	33,878	1	1	34,111
On-terminal Electricity Use	6,426	<1	<1	6,439
Worker Vehicles	3,170	<1	1	3,394
Total Operational Year 2038	457,163	24	15	461,891
With Ocean Disposal				
Total Construction and Operations Year 2038				462,067
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				285,991
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Alternative 5 Minus NEPA Baseline				142,673
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2038				462,110

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				286,034
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Alternative 5 Minus NEPA Baseline				142,716
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are amortized over the life of the proposed Project (30 years) and added to each year of operational emissions.

On-terminal electricity use includes crane operation and high mast poles.

CEQA Impact Determination

Table 3.5-22 shows that construction and operational GHG emissions minus the CEQA baseline under Alternative 5 would exceed the GHG threshold of 10,000 mty in the 2026, 2033, and 2038 analysis years. Emissions for all source categories would increase over the life of the alternative because of the increase in terminal throughput. Because of the increased capacity at the TICTF, starting in 2033 emissions from trucks are smaller than those for the proposed Project while emissions from rail are higher than those for the proposed Project. Alternative 5 GHG emissions would be significant under CEQA in the 2026, 2033, and 2038 analysis years prior to mitigation.

Mitigation Measures

The same mitigation measures identified for the proposed Project (i.e., MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1 through MM GHG-2) would also be applied to Alternative 5. Lease measures LM GHG-1, LM AQ-1, and LM AQ-2 would also be applied. Table 3.5-23A and Table 3.5-23B present amortized annual GHG emissions associated with construction of Alternative 5, following application of quantifiable mitigation measure (MM AQ-2). Table 3.5-24 presents the combined amortized annual GHG emissions associated with construction and annual GHG emissions associated with operational activities, following quantifiable mitigation (MM AQ-6, MM AQ-7, and MM GHG-1).

Table 3.5-23A: Construction GHG Emissions with Mitigation – Alternative 5 (mty) – Ocean Disposal

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	2,569
Marine Source Exhaust	477
On-road Construction-Related Vehicles	1,148
Worker Vehicles	28
Total Construction Year 2018	4,222
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction-Related Vehicles	120
Worker Vehicles	10
Total Construction Year 2019	1,091
Amortized Construction	177

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

Table 3.5-23B: Construction GHG Emissions with Mitigation – Alternative 5 (mty) – Upland Disposal

Source Category	CO_2e
Construction Year 2018	
Off-road Construction Equipment Exhaust	2,967
Marine Source Exhaust	305
On-road Construction-Related Vehicles	2,228
Worker Vehicles	30
Total Construction Year 2018	**5,530**
Construction Year 2019	
Off-road Construction Equipment Exhaust	161
Marine Source Exhaust	800
On-road Construction-Related Vehicles	120
Worker Vehicles	10
Total Construction Year 2019	**1,091**
Amortized Construction	221

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are calculated for each relevant GHG, multiplied by the appropriate GWP, and reported as CO_2e. GHG emissions for each construction source category are detailed in Appendix B1 but presented here as total CO_2e.

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Table 3.5-24: Construction and Operational GHG Emissions with Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
Amortized Construction				
Ocean Disposal				177
Upland Disposal				221
Year 2018				
Ships - Transit and Anchoring	51,596	1	3	52,335
Ships - Hoteling	8,417	<1	1	8,552
AMP Electricity Use	2,335	<1	<1	2,340
Tugboats	751	<1	<1	761
Trucks	51,656	<1	2	52,135
Line Haul Locomotives	27,833	2	1	28,090
Switch Locomotives	261	<1	<1	263
Cargo Handling Equipment	14,798	<1	<1	14,893
On-terminal Electricity Use	2,082	<1	<1	2,091
Worker Vehicles	3,412	<1	1	3,565
Total Operational Year 2018	163,140	5	7	165,024
With Ocean Disposal				
Total Construction and Operations Year 2018				165,201
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				-10,876
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				172,989
Alternative 5 Minus NEPA Baseline				-7,789
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2018				165,244
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				-10,832
Significance Threshold				10,000
Significant?				No

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				172,989
Alternative 5 Minus NEPA Baseline				-7,745
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2019				
Ships - Transit and Anchoring	53,398	1	3	54,163
Ships - Hoteling	9,408	<1	1	9,556
AMP Electricity Use	2,682	<1	<1	2,687
Tugboats	793	<1	<1	802
Trucks	56,690	<1	2	57,215
Line Haul Locomotives	30,846	3	1	31,131
Switch Locomotives	279	<1	<1	282
Cargo Handling Equipment	18,475	1	<1	18,601
On-terminal Electricity Use	3,311	<1	<1	3,318
Worker Vehicles	3,198	<1	1	3,351
Total Operational Year 2019	179,079	5	7	181,107
With Ocean Disposal				
Total Construction and Operations Year 2019				181,284
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				5,208
Significance Threshold				10,000
Significant?				No
NEPA Impacts				
NEPA Baseline Emissions				177,435
Proposed Project Minus NEPA Baseline				3,849
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
With Upland Disposal				
Total Construction and Operations Year 2019				181,328
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				5,251
Significance Threshold				10,000
Significant?				No

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				177,435
Alternative 5 Minus NEPA Baseline				3,892
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				No
Year 2026				
Ships - Transit and Anchoring	55,974	1	3	56,777
Ships - Hoteling	12,292	<1	1	12,487
AMP Electricity Use	6,291	<1	<1	6,304
Tugboats	793	<1	<1	802
Trucks	64,509	<1	2	65,094
Line Haul Locomotives	52,835	4	1	53,324
Switch Locomotives	410	<1	<1	413
Cargo Handling Equipment	26,244	1	1	26,424
On-terminal Electricity Use	4,248	<1	<1	4,257
Worker Vehicles	3,176	<1	1	3,365
Total Operational Year 2026	226,772	7	9	229,247
With Ocean Disposal				
Total Construction and Operations Year 2026				229,424
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				53,348
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				176,519
Alternative 5 Minus NEPA Baseline				52,905
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2026				229,468
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				53,391
Significance Threshold				10,000
Significant?				Yes

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				176,519
Alternative 5 Minus NEPA Baseline				52,948
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2033				
Ships - Transit and Anchoring	74,454	2	4	75,522
Ships - Hoteling	15,316	<1	1	15,561
AMP Electricity Use	7,344	<1	<1	7,359
Tugboats	1,057	<1	<1	1,070
Trucks	66,412	<1	2	67,012
Line Haul Locomotives	248,116	20	7	250,408
Switch Locomotives	924	<1	<1	932
Cargo Handling Equipment	33,878	1	1	34,111
On-terminal Electricity Use	5,168	<1	<1	5,179
Worker Vehicles	3,340	<1	1	3,564
Total Operational Year 2033	456,009	24	15	460,716
With Ocean Disposal				
Total Construction and Operations Year 2033				460,896
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				284,820
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				320,246
Alternative 5 Minus NEPA Baseline				140,650
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2033				460,940
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				284,863
Significance Threshold				10,000
Significant?				Yes

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				320,246
Alternative 5 Minus NEPA Baseline				140,694
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
Year 2038				
Ships - Transit and Anchoring	69,260	2	4	70,327
Ships - Hoteling	15,056	<1	1	15,301
AMP Electricity Use	7,344	<1	<1	7,359
Tugboats	1,057	<1	<1	1,070
Trucks	65,443	<1	2	66,036
Line Haul Locomotives	248,116	20	7	250,408
Switch Locomotives	924	<1	<1	932
Cargo Handling Equipment	33,878	1	1	34,111
On-terminal Electricity Use	5,168	<1	<1	5,179
Worker Vehicles	3,170	<1	1	3,394
Total Operational Year 2038	449,416	24	15	454,119
With Ocean Disposal				
Total Construction and Operations Year 2038				454,296
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				278,219
Significance Threshold				10,000
Significant?				Yes
NEPA Impacts				
NEPA Baseline Emissions				319,394
Alternative 5 Minus NEPA Baseline				134,901
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes
With Upland Disposal				
Total Construction and Operations Year 2038				454,339
CEQA Impacts				
CEQA Baseline Emissions				176,076
Alternative 5 Minus CEQA Baseline				278,263
Significance Threshold				10,000
Significant?				Yes

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation – Alternative 5 (mty)

Source Category	CO_2	CH_4	N_2O	CO_2e
NEPA Impacts				
NEPA Baseline Emissions				319,394
Alternative 5 Minus NEPA Baseline				134,945
CEQ Reference Level				25,000
Exceeds CEQ Reference Level?				Yes

Notes:

Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Construction emissions are amortized over the life of the proposed Project (30 years) and added to each year of operational emissions.

On-terminal electricity use includes crane operation and high mast poles.

Residual Impacts

Impacts would be reduced but would remain significant and unavoidable under CEQA.

NEPA Impact Determination

As stated above, there is no significance threshold for NEPA; and as such, an impact determination for GHG-1 is not applicable for the proposed Project or any of the alternatives. However, it is important to note that GHG emissions exceed 25,000 mty CO_2e, which is the reference level contained in the CEQ's *Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews.* Therefore, an impact determination, mitigation measures and residual impacts are not applicable.

3.5.5.5 Summary of Impact Determinations

As stated above for the proposed Project and all project alternatives, GHG impacts would be significant and unavoidable for GHG-1 but the threshold is not applicable under NEPA for the proposed Project or any of its alternatives. Table 3.4-25 provides a summary of the impact determinations of the proposed Project and alternatives related to GHGs and climate change. This table allows easy comparison of the potential impacts of the proposed Project and alternatives.

For each type of potential impact, the table provides a description of the impact, the impact determination, any applicable mitigation measures, and residual impacts (i.e., the impact remaining after mitigation). All impacts, whether significant or not, are included in this table.

Table 3.5-25: Summary Matrix of Impacts and Mitigation Measures for GHG Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Mitigation Measures	Residual Impacts after Mitigation
Proposed Project	**GHG-1**: The proposed Project would generate GHG emissions, either directly or indirectly that would exceed the SCAQMD 10,000 mty CO_2e threshold.	CEQA: Potentially significant	CEQA: **MM AQ-2. On-road Trucks Used during Construction.** **MM AQ-6. Vessel Speed Reduction Program.** **MM AQ-7. Alternative Maritime Power.** **MM GHG-1. LED Lighting.** **MM GHG-2. Solar Electricity.** **LM GHG-1. GHG Credit Fund.** **LM AQ-1. Replacement of Equipment and Review of New Technology, and** **LM AQ-2. Priority Access System.**	CEQA: Significant and Unavoidable
		NEPA: Not applicable	NEPA: Mitigation measures are not applicable.	NEPA: Not applicable
Alternative 1 – No Federal Action	**GHG-1**: Alternative 1 would generate GHG emissions, either directly or indirectly that would exceed the SCAQMD 10,000 mty CO_2e threshold.	CEQA: Potentially significant	CEQA: **MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1, and MM GHG-2; LM GHG-1, LM AQ-1, and LM AQ-2**	CEQA: Significant and Unavoidable
		NEPA: Not applicable	NEPA: Mitigation measures are not applicable.	NEPA: Not applicable
Alternative 2 – No Project	**GHG-1**: Alternative 2 would generate GHG emissions, either directly or indirectly that would exceed the SCAQMD 10,000 mty CO_2e threshold.	CEQA: Potentially significant	CEQA: **MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1, and MM GHG-2; LM GHG-1, LM AQ-1, and LM AQ-2**	CEQA: Significant and Unavoidable
		NEPA: Not applicable	NEPA: Mitigation measures are not applicable.	NEPA: Not applicable
Alternative 3 – Reduced Project: Reduced Wharf Improvements	**GHG-1**: Alternative 3 would generate GHG emissions, either directly or indirectly that would exceed the SCAQMD 10,000 mty CO_2e threshold.	CEQA: Potentially significant	CEQA: **MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1, and MM GHG-2; LM GHG-1, LM AQ-1, and LM AQ-2**	CEQA: Significant and Unavoidable
		NEPA: Not applicable	NEPA: Mitigation measures are not applicable.	NEPA: Not applicable

Table 3.5-25: Summary Matrix of Impacts and Mitigation Measures for GHG Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Mitigation Measures	Residual Impacts after Mitigation
Alternative 4 – Reduced Project: No Backland Improvements	**GHG-1**: Alternative 4 would generate GHG emissions, either directly or indirectly that would exceed the SCAQMD 10,000 mty CO_2e threshold.	CEQA: Potentially significant	CEQA: **MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1, and MM GHG-2; LM GHG-1, LM AQ-1, and LM AQ-2**	CEQA: Significant and Unavoidable
		NEPA: Not applicable	NEPA: Mitigation measures are not applicable.	NEPA: Not applicable
Alternative 5 – Expanded On-Dock Railyard: Wharf and Backland Improvements with an Expanded TICTF	**GHG-1**: Alternative 5 would generate GHG emissions, either directly or indirectly that would exceed the SCAQMD 10,000 mty CO_2e threshold.	CEQA: Potentially significant	CEQA: **MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1, and MM GHG-2; LM GHG-1, LM AQ-1, and LM AQ-2**	CEQA: Significant and Unavoidable
		NEPA: Not applicable	NEPA: Mitigation measures are not applicable.	NEPA: Not applicable

3.5.5.6 Mitigation Monitoring

The mitigation monitoring program below is applicable to the proposed Project, Alternative 1, and Alternatives 3 through 5 under CEQA only. Mitigation is not applicable under NEPA. Air quality mitigation measures that also reduce GHG emissions are addressed in Section 3.2.4.7 in Section 3.2, Air Quality and Meteorology, and are summarized here.

GHG-1: The proposed Project, Alternative 1, and Alternatives 3 through 5 would generate GHG emissions, either directly or indirectly, that would exceed the SCAQMD 10,000 mty CO_2e threshold.	
Mitigation Measure	**MM AQ-2. On-Road Trucks Used during Construction.** On-road trucks shall comply with EPA 2010 on-road emission standards or better, unless contractor can reasonably demonstrate that such equipment is unavailable to the satisfaction of LAHD.
Timing	Contractor shall commit at the time of the award of the construction contract.
Methodology	LAHD shall monitor implementation of mitigation measures during construction
Responsible Parties	LAHD through construction contractor.
Residual Impacts	Significant and unavoidable.
Mitigation Measure	**MM AQ-6: Vessel Speed Reduction Program (VSRP).** Starting January 1, 2019 and thereafter, 95 percent of Evergreen ships calling at the Everport Container Terminal shall be required to comply with the expanded VSRP at 12 knots between 40 nm from Point Fermin and the Precautionary Area. Starting January 1, 2026, 95 percent of all ships calling at the Everport Container Terminal will follow this requirement. Alternative Compliance Plans will be considered where a different speed that would result in fewer emissions compared to the current speed limits. Any alternative compliance plan shall be submitted to LAHD at least 90 days in advance for approval and shall be supported by data that demonstrates the ability of the alternative compliance plan for the specific vessel and type to achieve emissions reductions comparable to or greater than those achievable by compliance with VSRP. The alternative compliance plan shall be implemented once written notice of approval is granted by the LAHD.
Timing	Throughout operation.
Methodology	LAHD shall include MM AQ-6 in lease agreement with tenant. LAHD shall monitor implementation of mitigation measures during operation.
Responsible Parties	LAHD; Everport
Residual Impacts	Significant and unavoidable.
Mitigation Measure	**MM AQ-7: Alternative Maritime Power (AMP).** By 2020 or upon substantial completion of construction, 2019, 85 percent of Evergreen ships calling at the Everport Terminal must use AMP. By 2026, 95 percent of all ship calls at the Everport Container Terminal must use AMP or approved equivalent under the CARB Shore-Power Regulation. The equivalent alternative technology must, at a minimum, meet the emissions reductions that would be achieved from AMP.
Timing	Throughout operation.
Methodology	LAHD shall include MM AQ-7 in the lease agreement with tenant. LAHD shall monitor implementation of mitigation measures during operation.

Responsible Parties	LAHD; Everport
Residual Impacts	Significant and unavoidable.
Mitigation Measure	**MM GHG-1: LED Lighting.** All fixtures on the high mast poles at the Everport Container Terminal shall be replaced with LED fixtures or a technology with similar energy-saving capabilities.
Timing	Tenant must complete replacement of lighting by December 31, 2020.
Methodology	Tenant shall include MM GHG-1 in the construction specifications.
Responsible Parties	Tenant through its own construction contractor in conjunction with LAHD.
Residual Impacts	Significant and unavoidable.
Mitigation Measure	**MM GHG-2: Solar Electricity.** Photovoltaic panels shall be installed over the employee parking lot as part of the development of the 22 acres, pending a feasibility study.
Timing	Feasibility study must be conducted prior to design and construction of the 22-acre backlands.
Methodology	Tenant shall include will include MM GHG-2 and its feasibility potential into construction specifications.
Responsible Parties	Tenant through its own construction contractor.
Residual Impacts	Significant and unavoidable.
Mitigation Measure	**LM GHG-1: GHG Credit Fund.** Proposed Project GHG emissions are 278,708 metric tons of CO2e in the peak year of operations in 2038. They exceed the 10,000 metric ton CO2e significance threshold by 268,708 metric tons. Because operational GHG emissions exceed the significance threshold with the incorporation of all feasible mitigation measures, LAHD shall establish a carbon offset fund, which may be accomplished through a Memorandum of Understanding with the California Air Resources Board or another appropriate entity, to mitigate project GHG impacts to the maximum extent feasible. The fund shall be used for GHG-reducing projects and programs on Port of Los Angeles property. It shall be the responsibility of the Tenant to contribute to the fund. Fund contribution shall be $250,000, payable upon substantial completion of Project construction. $250,000 has been identified as the maximum feasible contribution level taking into account the cost of the proposed Project, including on-site GHG-reducing mitigation measures that the tenant will be required to implement (LED high mast lighting and solar panels over the employee parking lot). If LAHD is unable to establish the fund within a reasonable period of time, Tenant shall instead purchase credits from an approved GHG offset registry in the amount of $250,000.
Timing	Payable upon substantial completion of Project construction.
Methodology	LAHD shall include LM GHG-1 in the lease agreement with tenant. LAHD shall monitor implementation of mitigation measures during operation.
Responsible Parties	LAHD; Everport.
Residual Impacts	Significant and unavoidable.

Lease Measure	**LM AQ-1: Replacement of Equipment and Review of New Technology.** When the tenant needs to replace or turnover equipment in its fleet, the tenant shall meet with the LAHD to determine if something is feasible or technologically available that may result in fewer emissions. If any kind of technology becomes available and is shown to be as good as or better than the existing measure in terms of emissions reduction performance, the technology could replace the requirements of other mitigation measures pending approval by LAHD. LAHD shall require the tenant to review any new emissions-reduction technology for feasibility and report back to LAHD every five years beginning five years after lease agreement if no new purchase or equipment turnover occurs sooner as noted in the abovementioned paragraph. If LAHD determines the technology is feasible in terms of cost and operations, the tenant shall work with LAHD to implement such technology.
Timing	Beginning five years after least agreement if no new purchase or equipment turnover occurs sooner and then every five years thereafter.
Methodology	LAHD shall include LM AQ-1 in the lease agreement with tenant. LAHD shall monitor implementation of mitigation measures during operation.
Responsible Parties	LAHD; Everport.
Residual Impacts	Significant and unavoidable.
Lease Measure	**LM AQ-2: Priority Access System.** A priority access system shall be evaluated to identify one or more ways to provide preferential access to zero- and near-zero-emission trucks. The tenant shall provide a report to LAHD on preferential access system options by January 1, 2020.
Timing	During operation.
Methodology	LAHD will include this lease measure in lease agreements with tenants.
Responsible Parties	Everport, LAHD.
Residual Impacts	Significant and unavoidable.

3.5.6 Significant Unavoidable Impacts

Construction and operational GHG emissions under Impact GHG-1 would be significant and unavoidable after mitigation under CEQA for the proposed Project, Alternative 1, and Alternatives 3 through 5. Under Alternative 2, GHG emissions under CEQA would be significant and unavoidable; however, mitigation would not be applied under this alternative as there is no discretionary action. A significance determination regarding GHG is not made under NEPA.

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