

## Section 3.2

# Greenhouse Gas Emissions and Climate Change

## SECTION SUMMARY

This section describes greenhouse gas (GHG) emissions associated with operation of the Revised Project and mitigation measures.

Section 3.2, Greenhouse Gas Emissions, provides the following:

- a description of the existing setting as it relates to Port GHG emissions and climate change;
- a discussion on the methodology used to determine whether the Revised Project would result in a new or substantially more severe impact to GHG emissions and climate change;
- an impact analysis of the Revised Project;
- a description of mitigation measures proposed to reduce any potential impacts, as applicable; and
- a discussion of the magnitude of the potential impacts relative to the impacts that would have occurred if all adopted mitigation measures from the 2008 EIS/EIR had been implemented.

### Key Points of Section 3.2:

The Recirculated Draft SEIR for the Revised Project is focused on evaluating impacts for the continued operations of the Berths 97-109 CS Container Terminal under a set of proposed revised mitigation measures. Since all construction and physical improvements to the CS Container Terminal have been completed and are in operation as approved based on the 2008 EIS/EIR, this Recirculated Draft SEIR focuses on the impacts of the alterations to mitigation measures which constitute the Revised Project. Additionally, this Recirculated Draft SEIR, in evaluating the impacts of operation of the CS Container Terminal under the Revised Project, assumes and analyzes impacts of an incremental increase in the Terminal's throughput level in future years, based upon reassessment of terminal capacity, compared to the assumptions in the 2008 EIS/EIR.

Air quality operational mitigation measures MM AQ-9, MM AQ-10, MM AQ-15 and MM AQ-17, identified in Section 3.1 and summarized below, are modified mitigation measures included in the Revised Project. These measures would also mitigate GHG emissions and the effectiveness of these measures is quantified in the analysis.

**MM AQ-9: Alternative Maritime Power.** Starting on the effective date of a new lease amendment between the Tenant and the LAHD and annually thereafter, all ships calling at Berths 97-109 must use AMP while hoteling in the Port, with a 95 percent compliance rate. Exceptions may be made if one of the following circumstances or conditions exists:

1. Emergencies

- 1                                   2. An AMP-capable berth is unavailable
- 2                                   3. An AMP-capable ship is not able to plug in
- 3                                   4. The vessel is not AMP-capable.

4                                   In the event one of these circumstances or conditions exist, an equivalent alternative at-berth  
5                                   emission control capture system shall be deployed, if feasible, based on availability,  
6                                   scheduling, operational feasibility, and contracting requirements between the provider of the  
7                                   equivalent alternative technology and the terminal operator. The equivalent alternative  
8                                   technology must, at a minimum, meet the emissions reductions that would be achieved from  
9                                   AMP.

10                                  **MM AQ-10: Vessel Speed Reduction Program (VSRP).** Starting on the effective date of  
11                                  a new lease amendment between the Tenant and the LAHD and annually thereafter, at least  
12                                  95 percent of vessels calling at Berths 97-109 shall either 1) comply with the expanded VSRP  
13                                  of 12 knots between 40 nm from Point Fermin and the Precautionary Area or 2) comply with  
14                                  an alternative compliance plan approved by the LAHD for a specific vessel and type. Any  
15                                  alternative compliance plan shall be submitted to LAHD at least 90 days in advance for  
16                                  approval, and shall be supported by data that demonstrates the ability of the alternative  
17                                  compliance plan for the specific vessel and type to achieve emissions reductions comparable  
18                                  to or greater than those achievable by compliance with the VSRP. The alternative  
19                                  compliance plan shall be implemented once written notice of approval is granted by the  
20                                  LAHD.

21                                  **MM AQ-15: Yard Tractors.** 1) No later than one year after the effective date of a new lease  
22                                  amendment between the Tenant and the LAHD, all LPG yard tractors of model years 2007 or  
23                                  older shall be replaced with alternative-fuel units that meet or are lower than a NOx emission  
24                                  rate of 0.02 g/bhp-hr and Tier 4 final off-road emission rates for other criteria pollutants. 2)  
25                                  No later than five years after the effective date of a new lease amendment between the Tenant  
26                                  and the LAHD, all LPG yard tractors of model years 2011 or older shall be replaced with  
27                                  alternative fuel units that meet or are lower than a NOx emission rate of 0.02 g/bhp-hr and  
28                                  Tier 4 final off-road engine emission rates for other criteria pollutants.

29                                  **MM AQ-16 CHE at Rail Yard:** This measure is combined with MM AQ-17 below.

30                                  **MM AQ-17: Cargo-Handling Equipment.** All yard equipment at the terminal except yard  
31                                  tractors shall implement the following requirements:

32                                  Forklifts:

- 33                                  ○ By one year after the effective date of a new lease amendment between the  
34                                  Tenant and the LAHD, all 18-ton diesel forklifts of model years 2004 and older  
35                                  shall be replaced with units that meet or are lower than Tier 4 final off-road  
36                                  engine emission rates for PM and NOx.
- 37                                  ○ By two years after the effective date of a new lease amendment between the  
38                                  Tenant and the LAHD, all 18-ton diesel forklifts of model years 2005 and older  
39                                  shall be replaced with units that meet or are lower than Tier 4 final off-road  
40                                  engine emission rates for PM and NOx.
- 41                                  ○ By two years after the effective date of a new lease amendment between the  
42                                  Tenant and the LAHD, all 5-ton forklifts of model years 2011 or older shall be  
43                                  replaced with zero-emission units.
- 44                                  ○ By three years after the effective date of a new lease amendment between the  
45                                  Tenant and the LAHD, all 18-ton diesel forklifts of model years 2007 and older  
46                                  shall be replaced with units that meet or are lower than Tier 4 final off-road  
47                                  engine emission rates for PM and NOx.

Toppicks:

- By one year after the effective date of a new lease amendment between the Tenant and the LAHD, all diesel top-picks of model years 2006 and older shall be replaced with units that meet or are lower than Tier 4 final off-road engine emission rates for PM and NOx.
- By three years after the effective date of a new lease amendment between the Tenant and the LAHD, all diesel top-picks of model years 2007 and older shall be replaced with units that meet or are lower than Tier 4 final off-road engine emission rates for PM and NOx.
- By five years after the effective date of a new lease amendment between the Tenant and the LAHD, all diesel top-picks of model years 2014 and older shall be replaced with units that meet or are lower than Tier 4 final off-road engine emission rates for PM and NOx.

Rubber-Tired Gantries:

- By three years after the effective date of a new lease amendment between the Tenant and the LAHD, all diesel RTG cranes of model years 2003 and older shall be replaced with diesel-electric hybrid units with diesel engines that meet or are lower than Tier 4 final off-road engine emission rates for PM and NOx.
- By five years after the effective date of a new lease amendment between the Tenant and the LAHD, all diesel RTG cranes of model years 2004 and older shall be replaced with diesel-electric hybrid units with diesel engines that meet or are lower than Tier 4 final off-road engine emission rates for PM and NOx.
- By seven years after the effective date of a new lease amendment between the Tenant and the LAHD, four RTG cranes of model years 2005 and older shall be replaced with all-electric units, and one diesel RTG crane of model year 2005 shall be replaced with a diesel-electric hybrid unit with a diesel engine that meets or is lower than Tier 4 final off-road engine emission rates for PM and NOx.

Sweepers:

- Sweeper(s) shall be alternative fuel or the cleanest available by six years after the effective date of a new lease amendment between the Tenant and the LAHD.

Shuttle Buses:

- Gasoline shuttle buses shall be zero-emission units by seven years after the effective date of a new lease amendment between the Tenant and the LAHD.

Mitigation measures listed above are used in the Revised Project emissions analysis. For purposes of the emissions estimates in this Recirculated Draft SEIR, it was assumed that the effective date of the new lease amendment is 2019; therefore, the effects of Revised Project mitigations are included in the calculations starting from 2019 based on the phasing described by each mitigation measure.

Lease measures LM AQ-1, LM AQ-2, and LM AQ-3, which are summarized below, could potentially mitigate air quality impacts but the effects of these lease measures were not quantified in the analysis.

- **LM AQ-1: Cleanest Available Cargo Handling Equipment.** Subject to zero and near-zero emissions feasibility assessments that shall be carried out by LAHD, with input from Tenant as part of the CAAP process, Tenant shall replace cargo handling equipment with the cleanest available equipment anytime new or replacement equipment is purchased, with a first preference for zero-emission equipment, a second preference for near-zero equipment, and then for the cleanest available if zero or near-zero equipment is not feasible, provided that LAHD shall

1 conduct engineering assessments to confirm that such equipment is capable of installation at the  
2 terminal.

3 Starting one year after the effective date of a new lease amendment between the Tenant and the  
4 LAHD, tenant shall submit to the Port an equipment inventory and 10-year procurement plan for  
5 new cargo-handling equipment, and infrastructure, and will update the procurement plan annually  
6 in order to assist with planning for transition of equipment to zero emissions in accordance with  
7 the forgoing paragraph.

8 LAHD will include a summary of zero and near-zero emission equipment operating at the  
9 terminal each year as part of mitigation measure tracking.

10 • **LM AQ-2: Priority Access for Drayage.** A priority access system shall be implemented at the  
11 terminal to provide preferential access to zero- and near-zero-emission trucks.

12 • **LM AQ-3: Demonstration of Zero Emissions Equipment.** Tenant shall conduct a one-year  
13 zero emission demonstration project with at least 10 units of zero-emission cargo handling  
14 equipment. Upon completion, tenant shall submit a report to LAHD that evaluates the feasibility  
15 of permanent use of the tested equipment. Tenant shall continue to test zero-emission equipment  
16 and provide feasibility assessments and progress reports in 2020 and 2025 to evaluate the status  
17 of zero- emission technologies and infrastructure as well as operational and financial  
18 considerations, with a goal of 100% zero-emission cargo handling equipment by 2030.

19 New GHG mitigation measures, summarized below, would reduce GHG emissions.

20 **MM GHG-1 LED Lighting:** All lighting within the interior of buildings on the premises and  
21 outdoor high mast terminal lighting will be replaced with LED lighting or a technology with  
22 similar energy-saving capabilities within two years after the effective date of a new lease  
23 amendment between the Tenant and the LAHD or by no later than 2023.

24 **LM GHG-1 GHG Credit Fund:** LAHD shall establish a carbon offset fund, which may be  
25 accomplished through a Memorandum of Understanding with the California Air Resources Board  
26 or another appropriate entity. The fund shall be used for GHG-reducing projects and programs on  
27 Port of Los Angeles property. It shall be the responsibility of the Tenant to contribute to the fund.  
28 Tenant shall have the option to either: (i) make a one-time fund contribution of \$250,000, payable  
29 upon execution of a new lease amendment, or (ii) make a payment in 2030, at the time the peak  
30 impact would occur, in an amount calculated based on the market value of carbon credits at that  
31 time, and actual GHG emissions that exceed whatever GHG threshold exists at that time as  
32 approved by the LAHD. If LAHD is unable to establish the fund within a reasonable period of  
33 time, Tenant shall instead purchase credits from an approved GHG offset registry.

34 The effectiveness of MM GHG-1 is quantified in the analysis, whereas the effectiveness of LM GHG-1  
35 cannot be quantified. After the application of these mitigation measures, GHG emissions and climate  
36 change impacts would be reduced but would remain significant and unavoidable under CEQA for the  
37 Revised Project.

38 The Revised Project would result in the following new or substantially more severe significant and  
39 unavoidable impacts:

40 The Revised Project would generate GHG emissions, either directly or indirectly, that would exceed the  
41 SCAQMD 10,000 mty CO<sub>2</sub>e threshold in 2012, 2014, 2018, 2023, 2030, 2036 and 2045.

42 The State of California, the City of Los Angeles, and LAHD have adopted plans and policies to reduce  
43 GHG emissions. None of these plans or policies constitute regulations or requirements adopted to  
44 implement a state-wide, regional or local plan for reduction or mitigation of GHG emissions as defined  
45 under the CEQA Guidelines and, thus, no significance determination is required using these factors.

1 Nevertheless, for the purpose of disclosure, LAHD has considered for informational purposes only,  
2 whether the Revised Project would be consistent with federal, state, or local plans, policies, or  
3 regulations, and concluded that it would not be consistent with some state and local plans, and policies  
4 adopted for the purpose of reducing GHG emissions and climate change impacts.

5

## 3.2.1 Introduction

This section evaluates the GHG emissions and climate change issues associated with the Revised Project. Activities from operation of the Revised Project would affect GHG emissions. 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 Revised Project; and mitigation measures to address the impacts.

As described in Chapter 2, the Approved Project as analyzed in the 2008 EIS/EIR included a number of mitigation measures, some of which have yet to be fully implemented for various reasons. The Revised Project consists of continued operation of the Berths 97-109 CS Container Terminal under new and/or modified mitigation measures. This Recirculated Draft SEIR further assumes that CS Container Terminal throughput will be incrementally higher than was assumed in the 2008 EIS/EIR, in the amounts shown in Table 2-3, due to a revised assessment of Terminal capacity. Therefore, this SEIR, in analyzing the impacts of operation of the Revised Project, accounts for the impacts of both the Revised Project's changes to the Approved Project, and of changed circumstances surrounding, or new information of substantial importance to, the Approved Project.

Greenhouse gas impacts are analyzed here against one baseline scenario: 2008 actual activity and actual compliance with 2008 EIS/EIR mitigations (the "2008 Actual Baseline"). As discussed in Section 3.1.4.2, the conditions during the 2008 Baseline were found to be in compliance with the 2008 EIR/EIS mitigations being evaluated in this document, and therefore, there is no need to analyze a 2008 Mitigated Baseline.

Two future conditions (2018 to 2045) scenarios are analyzed:

- 1) future conditions assuming incremental increase in Terminal throughput as shown in Table 2-3 and timely implementation of the 2008 EIS/EIR mitigation measures as originally approved (referred to as the FEIR Mitigated Scenario); and
- 2) future conditions assuming an incremental increase in terminal throughput as shown in Table 2-3 and implementation of the modified mitigation measures under the Revised Project (referred to as the Revised Project Scenario).

In addition, in this Recirculated Draft SEIR analysis, two interim past years are analyzed, 2012 and 2014, under two conditions:

- 1) actual activity and actual compliance with 2008 EIS/EIR mitigations (referred to as "2012 Actual and 2014 Actual" under the Revised Project); and
- 2) 2012 and 2014 as they would have been with timely implementation of all mitigation measures required by the 2008 EIS/EIR (referred to as the "2012 FEIR Mitigated and 2014 FEIR Mitigated").

Comparison of the predicted impacts between the Revised Project and FEIR Mitigated scenario is provided for informational purposes. Details of these baseline and future scenarios are provided in Chapter 2 and 3.1. Table 3.2-1 summarizes the analyses years and scenarios studied for GHG analysis in this Recirculated Draft SEIR.

For purposes of the GHG emissions estimates in this Recirculated Draft SEIR, it was assumed that the effective date of a new lease amendment is 2019; therefore, effects of the Revised Project proposed mitigations are assumed in the calculations of impacts starting from 2019. Analysis of 2018 under the Revised Project Scenario, by contrast,

assumes projected activity in that year under the Revised Project but, since proposed mitigations would not yet be in place by then, the impacts under the Revised Project Scenario for 2018 represent actual compliance levels of 2008 EIS/EIR Mitigations, based on data for compliance levels in calendar year 2017.

**Table 3.2-1: Recirculated Draft SEIR Analysis Years and Scenarios for GHG Analysis**

Scenario Referred to as	Study Year	Revised Project		FEIR Mitigated (or simply "Mitigated")		
		Activity	Mitigation	Activity	Mitigation	
Actual Baseline	2008	Actual activity, and actual compliance of 2008 EIS/EIR mitigations				
Past Years	2012	actual	Actual compliance level of 2008 EIS/EIR mitigations	actual	Full compliance with 2008 EIS/EIR Mitigations	
	2014	actual		actual		
Future Years	2018	projected		projected		
	2023	projected	Revised Project proposed mitigations (as of this Recirculated Draft SEIR)	projected		
	2030	projected		projected		
	2036	projected		projected		
	2045	projected		projected		

Due to improvements in procedures and assumptions used to calculate emissions, it is not possible to directly compare greenhouse gas impacts presented in the 2008 Final EIS/EIR for the Approved Project with impacts calculated for this Recirculated Draft SEIR for the Revised Project, nor is it possible to reproduce the outdated methods, models, and procedures used to analyze greenhouse gas impacts in the 2008 EIS/EIR. Therefore, this Recirculated Draft SEIR presents an evaluation of greenhouse gas impacts for all of the baseline and future condition scenarios described in the preceding paragraph using current, state-of-the-art emission estimation, air quality modeling.

### 3.2.2 Environmental Setting

The project site is located in the Harbor District of the City of Los Angeles in the southwest coastal area of the South Coast Air Basin (SCAB). The SCAB 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.

#### 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<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), 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<sub>6</sub>). These last three families of gases, while not naturally present in the atmosphere, have

1 properties that also cause them to trap infrared radiation when they are present in the  
2 atmosphere. Together, these six gases comprise the major GHGs that are recognized by  
3 the Kyoto Accords (United Nations Framework Convention on Climate Change, 1997).  
4 There are other GHGs that are not recognized by the Kyoto Accords due either to the  
5 smaller role that they play in climate change or the uncertainties surrounding their effects.  
6 Atmospheric water vapor is not recognized by the Kyoto Accords because there is not an  
7 obvious correlation between water vapor concentrations and specific human activities.  
8 Water vapor appears to act as a positive feedback mechanism; higher temperatures lead  
9 to higher water concentrations, which in turn cause more global warming (Myhre et al.,  
10 2013).

11 The effect each of these gases has on global warming is a combination of the volume of  
12 their emissions and their 100-year global warming potential (GWP). GWP indicates, on  
13 a pound-for-pound basis, how much a gas will contribute to global warming relative to  
14 how much warming would be caused by the same mass of CO<sub>2</sub>. GWP is a unitless  
15 quantity. CH<sub>4</sub> and N<sub>2</sub>O are substantially more potent than CO<sub>2</sub>, with GWPs (100-year  
16 horizon) of 28 and 265, respectively (IPCC, 2015). However, these natural GHGs are  
17 nowhere near as potent as sulfur hexafluoride and various HFCs and CFCs. Sulfur  
18 hexafluoride has a 100-year GWP of 23,900, and CFCs and HFCs have GWPs ranging  
19 from 140 to 11,700 (IPCC, 1995). In emissions inventories, GHG emissions are typically  
20 reported in terms of metric tons (“tonnes” or “MTon” equivalent to 1000 kilograms) of  
21 carbon dioxide equivalents (CO<sub>2</sub>e), which are calculated as the product of the mass  
22 emitted of a given GHG and its specific GWP. In this document, the unit “metric tons” is  
23 used to report GHG emissions.

24 The most important GHG in human-induced global warming is CO<sub>2</sub>. While many gases  
25 have much higher GWPs than the naturally occurring GHGs, CO<sub>2</sub> is emitted in vastly  
26 higher quantities and accounts for more than 80 percent of the GWP of all GHGs emitted  
27 by the United States (EPA, 2016). Fossil fuel combustion, especially for the generation  
28 of electricity and powering of motor vehicles, has led to substantial increases in CO<sub>2</sub>  
29 emissions and thus substantial increases in global atmospheric CO<sub>2</sub> concentrations over  
30 the last century. In 2005, the atmospheric CO<sub>2</sub> concentration was about 391 parts per  
31 million, substantially exceeding the natural range over the last 800,000 years that have  
32 been measured in ice core samples (IPCC, 2013; IPCC, 2014). The buildup of CO<sub>2</sub> in the  
33 atmosphere is a result of increased emissions and its relatively long lifespan in the  
34 atmosphere of 50 to 200 years.

35 Concentrations of the second most prominent GHG, CH<sub>4</sub>, have also increased due to  
36 human activities such as rice production, degradation of waste in landfills, cattle farming,  
37 and natural gas mining. In 2011, the atmospheric level of CH<sub>4</sub> was more than double the  
38 pre-industrial level, up to 1,803 parts per billion as compared to 715 parts per billion  
39 (IPCC, 2013; IPCC, 2014). CH<sub>4</sub> has a relatively short atmospheric lifespan of only 12  
40 years, but it has a higher GWP potential than CO<sub>2</sub>.

41 N<sub>2</sub>O concentrations have increased from about 270 parts per billion in pre-industrial  
42 times to about 3124 parts per billion by 2011 (IPCC, 2013; IPCC, 2014). Most of this  
43 increase can be attributed to agricultural practices (such as soil and manure management),  
44 as well as fossil-fuel combustion and the production of some acids. N<sub>2</sub>O has a 120-year  
45 atmospheric lifespan, meaning that, in addition to its relatively large GWP, its influence  
46 is long lasting, which increases its role in global warming.

47 Sulfur hexafluoride (SF<sub>6</sub>), used in the electric industry; refrigerants such as chlorinated  
48 fluorocarbons (CFCs) and hydrofluorocarbons (HFCs); and perfluorocarbons (PFCs) are



1 present in the atmosphere in relatively small concentrations but have extremely long  
2 lifespans between 32,000 and 50,000 years, making them potent GHGs.

3 GHGs differ from criteria pollutants in that GHG emissions do not cause direct adverse  
4 human health effects. Rather, the direct environmental effect of GHG emissions is the  
5 increase in global temperatures, which in turn has numerous indirect effects on the  
6 environment and humans. For example, some observed changes include shrinking  
7 glaciers; thawing permafrost; later freezing and earlier break-up of ice on rivers, lakes,  
8 and oceans; a lengthened growing season; shifts in plant and animal ranges; and earlier  
9 flowering of trees (IPCC, 2001). Other, longer term environmental impacts of global  
10 warming include sea level rise; changing weather patterns with increases in the severity  
11 of storms and droughts; changes to local and regional ecosystems, including the potential  
12 loss of species; and a reduction in winter snow pack (for example, estimates include a  
13 30–90 percent reduction in snowpack in the Sierra Mountains).

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

- 19 • Temperature rises between 2.7-10.5°F by the 2070–2100 time period;
- 20 • 11–18 inches of sea level rise by 2050 and 23 to 55 inches of rise by 2100;
- 21 • Drier (by 5 percent or more) than historical average precipitation, with a greater  
22 amount of drying in Southern California (with precipitation decreases in some  
23 scenarios exceeding 15 percent);
- 24 • A decrease in cotton, maize, sunflower, and wheat yields from 3 percent to 8  
25 percent by 2050, with rice and tomato yields unchanged, and decreased yields for  
26 all crops except alfalfa by 2100; and
- 27 • A substantial increase in fire risk and estimated burned area increases from 57  
28 percent to 169 percent by 2085.

29 Risks to public health are also summarized in the 2009 Climate Action Team (CAT)  
30 biennial assessment (CAT, 2010). As stated above, climate change is predicted to lead to  
31 increases in the frequency, intensity, and duration of extreme heat events and heat waves  
32 in California. This is likely to increase the risk of mortality and morbidity due to heat-  
33 related illness on the elderly; individuals with chronic conditions such as heart and lung  
34 disease, diabetes, and mental illnesses; infants; the socially or economically  
35 disadvantaged; and those who work outdoors. The expected increase in temperatures and  
36 resulting increases in ultraviolet radiation due to climate change are likely to exacerbate  
37 existing air quality problems unless measures are taken to reduce GHGs as well as air  
38 pollutants and their precursors.

39 A 2008 study (Geophysical Research Letters, 2008), has identified direct links between  
40 increased levels of CO<sub>2</sub> in the atmosphere and increases in human mortality. The study  
41 determined the amounts of ozone and airborne particles that result from temperature  
42 increases in CO<sub>2</sub> emissions. The effects of considering the human impact of increased  
43 CO<sub>2</sub> emissions showed two important effects:

- 44 • Higher temperatures due to CO<sub>2</sub> increased the chemical rate of ozone production  
45 in urban areas; and

- Increased water vapor due to carbon dioxide-induced higher temperatures boosted chemical ozone production even more in urban areas.

The study further indicated that the effects of carbon dioxide emissions are most pronounced in areas that already have significant pollution, such as California. Many of the plans, policies, and regulations identified in Section 3.2.3 of this document are directed at reducing these impacts.

### 3.2.3 GHG Reduction Regulations, Plans and Policies

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 legislation, executive orders, and seminal court cases related to climate change germane to the Revised Project.

#### 3.2.3.1 Federal

##### Federal Action on Greenhouse Gas Emissions

###### *April 2007 Supreme Court Ruling*

In *Massachusetts et al. v. Environmental Protection Agency et al.* (2007) 549 U.S. 497, 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<sub>2</sub> emissions from new motor vehicles, should those emissions endanger the public health or welfare. The Court did not mandate that the EPA enact regulations to reduce GHG emissions but found that the only instances where the EPA could avoid taking action were if it found that GHGs do not contribute to climate change or if it offered a “reasonable explanation” for not determining that GHGs contribute to climate change. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act.

**Endangerment Finding:** the EPA Administrator found that the current and projected concentrations of the six key well-mixed GHGs - CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub> - in the atmosphere threaten the public health and welfare of current and future generations.

**Cause or Contribute Finding:** the EPA Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

The findings themselves did not impose any requirements on industry or other entities. However, this action was a prerequisite to finalizing the EPA’s proposed GHG emissions standards for light-duty vehicles (EPA, 2009).

###### ***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 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

1 model year. Fuel economy, expressed in miles per gallon (mpg), is defined as the  
2 average mileage traveled by an automobile per gallon of gasoline or equivalent amount of  
3 other fuel. The National Highway Traffic Safety Administration (NHTSA) of the U.S.  
4 Department of Transportation administers the CAFE program, and the EPA provides the  
5 fuel economy data. NHTSA sets fuel economy standards for passenger cars and light-  
6 duty trucks sold in the United States while the EPA calculates the average fuel economy  
7 for each manufacturer.

8 In response to a U.S. Presidential Memorandum Regarding Fuel Efficiency Standards  
9 dated May 21, 2010, the EPA and NHTSA are taking coordinated steps to enable the  
10 production of a new generation of clean vehicles, through reduced GHG emissions and  
11 improved fuel efficiency from on-road vehicles and engines. On April 1, 2010, the EPA  
12 and NHTSA issued a Final Rule establishing new federal GHG and fuel economy  
13 standards for model years 2012–2016 passenger cars, light-duty trucks, and medium-duty  
14 passenger vehicles (EPA, 2010). On October 15, 2012, the agencies finalized GHG  
15 standards for model year 2017 through 2025 light-duty vehicles (EPA, 2012).

16 In addition, on September 15, 2011, EPA and NHTSA finalized regulations to reduce  
17 GHG emissions and improve fuel efficiency of medium- and heavy-duty vehicles  
18 (amended June 17, 2013 and August 17, 2013), including large pickup trucks and vans,  
19 semi-trucks, and all types and sizes of work trucks and buses. The regulations  
20 incorporate all on-road vehicles rated at a gross vehicle weight at or above 8,500 pounds,  
21 and the engines that power them. Under the regulations, fuel economy will be improved  
22 and GHG emissions will be reduced in model years 2014 – 2018 (EPA, 2011; EPA,  
23 2013a; EPA, 2013b). On August 16, 2016, EPA and NHTSA implemented Phase 2 of  
24 the Heavy-Duty National Program to cover model years 2018 to 2027 for certain trailers  
25 and model years 2021 to 2027 for semi-trucks, large pickup trucks, vans, and all types  
26 and sizes of buses and work trucks.

27 In November 2011, NHTSA and EPA issued a supplemental Notice of Intent outlining  
28 the key elements of the upcoming proposal for CAFE and GHG emission standards for  
29 model year 2017 and beyond for light duty vehicles. EPA currently intends to propose  
30 standards that would be projected to achieve a fleet-wide average CO<sub>2</sub> emission level of  
31 163 grams/mile in model year 2025 (this would be equivalent, on a mpg-equivalent basis,  
32 to 54.5 mpg if all of the CO<sub>2</sub> emissions reductions were achieved with fuel economy  
33 technology). NHTSA currently intends to propose standards that would be projected to  
34 require, on an average industry fleet-wide basis, 40.9 mpg in model year 2021, and 49.6  
35 mpg in model year 2025.

### 36 **3.2.3.2 State**

#### 37 ***California Executive Orders and Legislation***

38 California has enacted a variety of laws that relate to climate change, many of which set  
39 aggressive goals for GHG reductions within the state, many of which are based on  
40 executive orders issued by state governors. The discussion below provides a brief  
41 overview of the CARB and Office of Planning and Research documents and of the  
42 primary executive orders and legislation that relates to climate change and may affect the  
43 GHG emissions associated with the Revised Project.

#### 44 ***Executive Order S-3-05***

45 California Executive Order S-03-05 (June 1, 2005) established the following State  
46 targets: (1) year 2000 levels by 2010; (2) year 1990 levels by 2020; and (3) 80 percent

1 below 1990 levels by 2050. EO S-3-05 established State targets and directed State  
2 legislature to develop legislation to address those targets.

### 3 **Assembly Bill 32, 2008 Scoping Plan and 2014 Scoping Plan Update**

4 The California Global Warming Solutions Act of 2006, widely known as AB 32, codified  
5 the following S-3-05 targets into State law: (1) year 2000 levels by 2010 and (2) year  
6 1990 levels by 2020. AB 32 directed State regulatory agencies to develop rules and  
7 regulations to meet the 2020 State targets, required CARB to develop and enforce  
8 regulations for the reporting and verification of statewide GHG emissions, and required  
9 CARB to adopt rules and regulations in an open public process to achieve the maximum  
10 technologically feasible and cost-effective GHG reductions.

11 In 2008, CARB adopted the AB 32 Scoping Plan, which set forth the framework for  
12 facilitating the State's AB 32 GHG goals. The Scoping Plan's GHG reduction actions  
13 include direct regulations, alternative compliance mechanisms, monetary and non-  
14 monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-  
15 trade system, and an AB 32 program implementation fee regulation to fund the program.

16 The Scoping Plan also identified a discrete early action, regulation for port operations.  
17 This action resulted in the promulgation of regulation for electrification of ship auxiliary  
18 engines while at berth.

19 In 2014, CARB adopted an update to the 2008 Scoping Plan that built upon the  
20 initial Scoping Plan with new strategies to achieve the following AB 32 State target:  
21 Year 1990 levels by 2020 (CARB, 2014). In 2017, CARB proposed a final second  
22 update to the 2008 Scoping Plan. The Final 2017 Scoping Plan Update (CARB, 2017)  
23 highlights the State's progress toward meeting the 2030 GHG emission reduction goal,  
24 identifies funding opportunities to reduce GHG emissions through State planning and low  
25 carbon investments, identifies climate change priorities for 5 years, and sets the  
26 groundwork to reach long-term goals of EO S-3-05. The Final 2017 Scoping Plan  
27 Update also includes specific recommended actions for lead agencies, identifies possible  
28 regulatory actions for vehicles and fuels, and introduces the Sustainable Freight Action  
29 Plan which calls for statewide efforts to improve freight system efficiency, maximize the  
30 use of near-zero emission vehicles and equipment powered by renewable energy and  
31 deploy over 100,000 zero-emission trucks and equipment by 2030.

32 The 2008 Scoping Plan, 2014 Scoping Plan Update and Final 2017 Scoping Plan Update  
33 envision that reductions in GHG emissions will come from virtually all sectors of the  
34 economy and be accomplished from a combination of policies, planning, direct  
35 regulations, market approaches, incentives and voluntary efforts. These efforts target  
36 GHG emission reductions from cars and trucks, electricity production, fuels, and other  
37 sources.

### 38 **Executive Order B-30-15**

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

44 To facilitate achievement of this goal, EO B-30-15 called for an update to CARB's  
45 Scoping Plan. CARB released its 2030 Target under the 2017 Scoping Plan final version  
46 in November 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**

Executive Order S-01-07 (January 18, 2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB. CARB identified the Low Carbon Fuel Standard (LCFS) as a Discrete Early Action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009 (CARB, 2011). In 2009, CARB approved for adoption the LCFS regulation, which became fully effective in April 2010 and is codified at 17 CCR 95480–95490. The LCFS will reduce greenhouse gas emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020. Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the “lifecycle” of a transportation fuel.

**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 2004, CARB applied to the EPA for a waiver under the federal Clean Air Act to authorize implementation of these regulations. EPA formally denied the waiver request in December 2007 after California filed suit to prompt federal action. In January 2008, the State Attorney General filed a new lawsuit against the EPA for denying California’s request for a waiver to regulate and limit GHG emissions from these vehicles. In January 2009, President Barack Obama issued a directive to the EPA to reconsider California’s request for a waiver. On June 30, 2009, the EPA granted the waiver to California for its GHG emission standards for motor vehicles. As part of this waiver, EPA specified the following provision: CARB may not hold a manufacturer liable or responsible for any noncompliance caused by emission debits generated by a manufacturer for the 2009 model year. CARB has adopted a new approach to passenger vehicles - cars and light trucks - by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California.

**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), (SCAG, 2017) 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

1 for streamlined CEQA review for some infill projects such as transit-oriented  
2 development.

3 SB 375 is similar to the Regional Blueprint Planning Program, established by the  
4 California Department of Transportation, which provides discretionary grants to fund  
5 regional transportation and land use plans voluntarily developed by Metropolitan  
6 Planning Organizations working in cooperation with Council of Governments. The  
7 scoping plan adopted by CARB in December of 2008 relies on the requirements of  
8 SB 375 to implement the carbon emissions reductions anticipated from land use  
9 decisions.

10 On April 7, 2016, the Regional Council of the Southern California Association of  
11 Governments (SCAG) adopted the 2016–2040 Regional Transportation Plan/Sustainable  
12 Communities Strategy (2016 RTP/SCS). The RTP/SCS is the culmination of a multi-  
13 year effort involving stakeholders from across the SCAG Region (SCAG, 2016). The  
14 2016–2040 RTP/SCS contains a regional commitment for the broad deployment of zero-  
15 and near-zero emission transportation technologies in the 2020–2040 timeframe and clear  
16 steps to move toward this objective. The report indicates that the RTP is critical for the  
17 goods movement system in the SCAB.

#### 18 **California Sustainable Freight Action Plan**

19 The California Sustainable Freight Action Plan was adopted in July, 2016. Pursuant to  
20 EO B-32-15, the plan established targets to improve freight efficiency, transition to zero-  
21 emission technologies, and make California’s freight system more competitive. The  
22 targets are not mandates but are aspirational measures of progress. Plan measures are  
23 conceptual and rely on the future development of regulations to implement the strategies.  
24 Plan strategies include on-dock and near-dock strategies to shift goods movement from  
25 truck to rail.

#### 26 **Senate Bill 97 (CEQA Guidelines)**

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

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

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

42 (1) *Use a model or methodology to quantify greenhouse gas emissions resulting from a*  
43 *project, and which model or methodology to use. The lead agency has discretion to*  
44 *select the model or methodology it considers the most appropriate provided its*  
45 *supports its decision with substantial evidence. The lead agency should explain the*  
46 *limitations of the particular model or methodology selected for use; and/or*

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

1 Guidelines section 10564.4, subdivision (b), further indicates:

2 (b) A lead agency should consider the following factors, among others, when  
3 assessing the significance of impacts from GHG emissions on the environment:

4 (1) The extent to which the project may increase or reduce GHG emissions as  
5 compared to the existing environmental setting;

6 (2) Whether the project emissions exceed a threshold of significance that the  
7 lead agency determines applies to the project;

8 (3) The extent to which the project complies with regulations or requirements  
9 adopted to implement a statewide, regional, or local plan for the reduction or  
10 mitigation of GHG emissions. Such requirements must be adopted by the  
11 relevant public agency through a public review process and must reduce or  
12 mitigate the project's incremental contribution of GHG emissions. If there is  
13 substantial evidence that the possible effects of a particular project are still  
14 cumulatively considerable notwithstanding compliance with the adopted  
15 regulations or requirements, an EIR must be prepared for the project.

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

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

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

31 ***CEQA Guidelines Section 15126.2(a)***

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

36 ***Executive Order S-13-08***

37 On November 14, 2008, Governor Arnold Schwarzenegger signed EO S-13-08, which  
38 called on state agencies to develop a strategy for identification and preparation for  
39 expected climate change impacts in California. The resulting 2009 California Climate  
40 Adaptation Strategy report was developed by the California Natural Resources Agency in  
41 coordination with CAT. The report presents best available science relevant to climate  
42 impacts in California and proposes a set of recommendations for California decision  
43 makers to assess vulnerability and promote resiliency in order to reduce California's  
44 vulnerability to climate change. In addition to requiring the CAT to create a Climate  
45 Adaptation Strategy, EO-S13-08 ordered the creation of a comprehensive Sea Level Rise  
46 Assessment Report, which was completed by the National Academy of Science in 2012

(NAS, 2012). Guidance regarding adaptation strategies is general in nature and emphasizes incorporation of strategies into existing planning policies and processes.

EO-S-13-08 called for the California Ocean Protection Council to work with the other CAT state agencies to develop interim guidance for assessing the potential impacts of sea-level rise (SLR) due to climate change in California. In coordination with National Academy of Science efforts, the council drafted interim guidance recommending that state agencies consider a range of 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.

### 3.2.3.3 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 metric tons per year (mt) CO<sub>2e</sub> emissions per year to industrial projects, and the threshold has been a part of the SCAQMD Air Quality Thresholds since 2011 (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 GHG emissions to 35 percent below 1990 level by 2030. This is a less ambitious goal than the statewide 40 percent reduction below 1990 target of EO B-30-15.

ClimateLA is the implementation framework that contains the details of the more than 50 action items that are included in Green LA. The majority of the actions described in the Green LA Plan are not project-specific and include City-wide actions. Some of the measures the City of Los Angeles will take to achieve the 35 percent reduction goal include the following:

- Increasing the amount of renewable energy provided by LADWP;
- Improving the energy efficiency of all City departments and City-owned buildings;
- Converting City fleet vehicles, refuse collection trucks, street sweepers, and buses to alternative fuel vehicles;
- Providing incentives and assistance to existing LADWP customers in becoming more energy efficient;
- Changing transportation and land use patterns to reduce dependence on automobiles;
- Decreasing per capita water use;



- 1 • “Greening” the Port of Los Angeles and the four airports operated by the City  
2 (including Los Angeles International Airport and LA/Ontario International  
3 Airport); and
- 4 • Promoting expansion of the “green economy” throughout the City.
- 5 • The Green LA Plan calls for the following Port-specific actions:
- 6 • Heavy-duty vehicles: By the end of 2011, all trucks calling at the ports will meet  
7 or exceed the EPA’s 2007 heavy-duty vehicle on-road emissions standards for  
8 particulate matter.
- 9 • Cargo-handling equipment: All yard tractors will meet at a minimum the EPA  
10 2007 on-road or Tier IV engine emission standards.
- 11 • Railroad locomotives: For Pacific Harbor Line switch engines, Tier II engines  
12 and emulsified or other equivalently clean alternative diesel fuels available will  
13 be used. Diesel-powered Class 1 locomotives entering port facilities will be 90  
14 percent controlled for particulate matter and NO<sub>x</sub>.
- 15 • A strategic plan for the Port will be completed and will include sustainable and  
16 green growth options.
- 17 • An economic development plan for the Port will be completed and will identify  
18 opportunities to link the Port’s investment in green growth to new economic  
19 opportunities in the green sector.

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

### 22 ***The Sustainable City pLAN (pLAN)***

23 In April, 2015, the City of Los Angeles developed the Sustainable City pLAN (pLAN) as  
24 a roadmap through 2035. The pLAN contains strategies to address current and future  
25 climate change impacts and reduce air quality emissions. The pLAN sets aspirations for  
26 14 target areas. Of these, the following are related to port activities: energy-efficient  
27 buildings, carbon and climate leadership, mobility and transit. In particular, the pLAN  
28 projects the increase of port-related goods movement trips that use zero-emissions  
29 technology to 15 percent by 2025 and to 25 percent by 2035 (City of Los Angeles, 2015).

### 30 **Port of Los Angeles Policies**

#### 31 ***Green Building Policy***

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

#### 37 ***Port Climate Action Plan***

38 The 2007 Green LA Plan directed the Port to develop an individual Climate Action Plan,  
39 consistent with the goals of Green LA, to explore opportunities to reduce GHG emissions  
40 from municipal operations (such as Port buildings and Port workforce operations). The  
41 Climate Action Plan outlines specific steps that LAHD has taken and will take on global  
42 climate change. These steps include specific actions for energy audits, green building  
43 policies, onsite photovoltaic solar energy, green energy procurement, tree planting, water  
44 conservation, alternative fuel vehicles, increased recycling, and green procurement. The  
45 Port Climate Action Plan also outlines San Pedro Bay Ports Clean Air Action Plan

1 measures that have significant GHG reduction co-benefits, such as Vessel Speed  
2 Reduction (VSR) and Alternative Marine Power (AMP). GHG reduction needs from  
3 Port's tenant activities are recognized in the Port Climate Action Plan, but are deferred to  
4 the CAAP, which addresses tenant operations.

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

6 In September 2014, LAHD prepared Actions to Reduce Greenhouse Gas Emissions by  
7 2050 and submitted the document to the City of Los Angeles (LAHD, 2014). The  
8 document presents a summary of the actions currently being undertaken by LAHD to  
9 reduce GHG emissions associated with LAHD operations, as well as its leadership role to  
10 help the maritime industry reduce its emissions occurring in the Port area. The document  
11 shows that quantifiable progress has been made in reducing GHG emissions reductions  
12 from 1990 to 2013 and outlines actions/strategies that are either being implemented or  
13 evaluated for possible implementation, in an effort to continue to reduce GHG emissions.  
14 While not a legal mandate, the plan establishes a Port-wide goal of 35 percent reduction  
15 by 2035 and 80 percent reduction by 2050.

### 16 ***San Pedro Bay Ports Clean Air Action Plan***

17 The Ports of Los Angeles and Long Beach, with the participation and cooperation of  
18 EPA, CARB, and SCAQMD staff, developed the San Pedro Bay Ports CAAP, a planning  
19 and policy document that sets goals and implementation strategies to reduce air emissions  
20 and health risks associated with port operations while allowing port development to  
21 continue (SPBP, 2006; 2010). Each individual CAAP measure is a proposed strategy for  
22 achieving these emissions reductions goals. CAAP measures are discussed in detail in  
23 Section 3.1, Air Quality and Meteorology.

24 Although many CAAP measures may result in GHG reductions as older technologies are  
25 replaced with newer, fuel-efficient technologies, the following CAAP measures are  
26 specifically identified in the CAAP to quantifiably reduce GHG emissions:

- 27 • CAAP Measure – SPBP-OGV1, Vessel Speed Reduction Program. LAHD has  
28 requested that ships coming into the Port reduce their speed to 12 knots or less  
29 within 20 nm of the Point Fermin Lighthouse. Reduction in speed demands less  
30 power from the main engine, which in turn reduces fuel usage and emissions.  
31 This reduction of 3 to 10 knots per ship (depending on the ship's cruising speed)  
32 can substantially reduce emissions from the main propulsion engines of the ships.  
33 The program started in May 2001. The CAAP adopted the VSRP as control  
34 measure OGV-1 and expanded the program out to 40 nm from the Point Fermin  
35 Lighthouse in 2008. Per the 2010 CAAP update, full compliance with VSR will  
36 achieve 5 percent reduction of CO<sub>2</sub>e within the 20 nm zone and 10 percent  
37 reduction of CO<sub>2</sub>e within the 40 nm zone.
- 38 • CAAP Measure – SPBP-OGV2, Reduction of At-Berth OGV Emissions. This  
39 measure requires the use of shore power to reduce hoteling emissions at all  
40 container and cruise terminals by 2014. This measure also requires  
41 demonstration and application of alternative emissions reduction technologies for  
42 ships that are not viable candidates for shore power, to be facilitated through the  
43 Technology Advancement Program (TAP). Per the 2010 CAAP update, use of  
44 shore power at-berth will reduce hoteling emissions of CO<sub>2</sub>e by 95 percent per  
45 vessel call (this estimate does not account for emissions from electrical power  
46 generation).

47 The latest CAAP Update, adopted in November 2017, re-affirms the Ports' commitment  
48 to the goals and standards of previous CAAP versions, but also introduces new goals,

standards, and programs (SPBP, 2017). The 2017 CAAP Update incorporates two new emission reduction targets:

- Reduce greenhouse gases (GHG) from port-related sources to 40% below 1990 levels by 2030
- Reduce GHGs from port-related sources to 80% below 1990 levels by 2050.

The 2017 update retains the reduction targets for emissions of diesel particulates, nitrogen oxides, and sulfure oxides set in the 2010 update. It also retains the health risk reduction goals set by the 2010 update, re-affirms the Ports' commitment to those goals, and further commits the Ports to working with regulators and stakeholders toward further reductions in emissions and health risks.

In addition, the 2017 CAAP Update incorporates the recent commitment by the mayors of Los Angeles and Long Beach to move towards zero emissions at the Ports, including setting goals of zero-emissions cargo-handling equipment by 2030 and zero-emissions drayage trucks by 3035. Accordingly, the updated CAAP includes provisions for new investments in clean technology, expanded use of at-beth emission reduction technologies, and a zero-emissions drayage truck pilot program. The updated CAAP also includes a CAAP Implementation Stakeholder Advisory Group to advise the Ports on details of CAAP implementation and ongoing operational efficiency and energy conservation programs; a commitment to the nationwide Green Ports Collaborative; and a commitment to a joint effort to secure funding for necessary equipment purchases and infrastructure development.

#### ***Additional Rules, Regulations and Policies***

In addition to the above, many rules, regulations and policies, discussed in Section 3.1, Air Quality and Methodology, that reduce fuel consumption, would have the indirect benefit of also reducing GHG emissions.

## **3.2.4 Impacts and Mitigation Measures**

This section presents a discussion of the potential GHG impacts associated with operation of the Revised Project. Mitigation measures are provided, where feasible, for impacts found to be significant.

### **3.2.4.1 Methodology**

GHG emissions related to Terminal operations were calculated for the 2008 Actual Baseline for the Revised Project, and for the FEIR Mitigated Scenario. In addition, indirect GHG emissions from electricity consumption during operation of the Revised Project and FEIR Mitigated Scenario were included in the analysis.

The major sources contributing to GHG emissions during Revised Project operation consist of:

- container ships (transit, anchoring, and hoteling);
- tugboats assisting ships during harbor transit, turning, and docking;
- cargo-handling equipment (CHE) used for loading/unloading, stacking and moving containers in the terminal;
- switching and linehaul locomotives used to move containers to and from the on-dock and near-dock railyards; and

- drayage trucks used to pick up and drop off containers at various destinations throughout the South Coast region.

The activity data (ship calls, truck trips, etc.) used in the GHG emission calculations for baseline, and operation are the same activity data used and described in Section 3.1, Air Quality and Meteorology; therefore, the activity data descriptions are not repeated here. The equipment utilization and scheduling data needed to calculate emissions for the operational activities were obtained from WBCT, China Shipping and LAHD Engineering staff and are included in Appendix B1.

GHG emission factors and emissions associated with all scenarios are presented in detail in Appendix B1 and summarized as follows:

- CO<sub>2e</sub> emissions from on-road and off-road equipment were based on emission factors derived from EMFAC2017, the ARB CHEI Tool and OFFROAD2007.
- OGV and harbor craft (HC) engine emissions were based on Tier-level emission factors identified in the Port 2014 Emissions Inventory (POLA, 2014). Tier-level emission factors are later combined to represent fleet-average emission factors based on known or projected age fleet mix of OGVs and HC engines.
- Switching and linehaul locomotive emissions were based on emission factors identified in the Port 2014 Emissions Inventory (POLA, 2014) and the ARB VISION model emission inventory forecasts (CARB, 2015).

In addition to evaluating the CO<sub>2e</sub> emissions from the Revised Project, the potential impact of SLR resulting from global climate change on the Revised Project was also considered. The methodology focused on a review of currently available documentation for the Los Angeles coastline (Pacific Institute, 2009; Lempert, 2012). Lempert (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.

### 3.2.4.2 Geographic Boundaries

For the purpose of assessing GHG impacts under CEQA, Revised Project CO<sub>2e</sub> emissions from all sources except OGVs were calculated to the California border. Emissions from Revised Project-related OGVs were calculated as follows:

- Container ship emissions were calculated along the northern 170 nm shipping route. The analysis conservatively assumed that all container ships would follow this “northern” route because it represents the longest distance that ships would travel to and from the Port while within CARB’s California in-state boundary.

### 3.2.4.3 Baseline

As described in Section 2.6, the baseline used for assessing the air quality and related impacts of the Revised Project in this Recirculated Draft SEIR is the “2008 Actual Baseline”, which would be identical to a “2008 Mitigated Baseline” since the conditions during the 2008 Baseline were found to be in compliance with the 2008 EIR/EIS mitigations being evaluated in this document (see Section 3.1.1), and therefore, there is no difference between a 2008 Mitigated Baseline and the 2008 Actual Baseline used in this Recirculated Draft SEIR. This Recirculated Draft SEIR uses the 2008 Actual Baseline in determining the significance of incremental changes to the mitigated impacts anticipated in the 2008 EIS/EIR, due to changes to the project (i.e. proposed modifications to 2008 EIS/EIR Mitigation measures under the Revised Project) and

1 changed circumstances/new information (i.e. incremental increase in terminal throughput  
2 as shown in Table 2-3, due to a revised assessment of terminal capacity).

3 Rules and regulations effective by December 31, 2007 are considered in the 2008 Actual  
4 Baseline for the source categories listed. The methodology used to quantify baseline  
5 emissions is presented in Section 3.1.4.1, Methodology. The 2008 Actual Baseline  
6 includes the following emission sources: container ships, tugboats, trucks, locomotives,  
7 cargo handling equipment (CHE), and employee vehicles. More detail on the  
8 methodology including the annual and peak day source category activity information is  
9 presented in Appendix B-1.

10 Table 3.2-2 presents the 2008 Actual Baseline annual GHG emissions in mty without  
11 application of the 2008 EIR/EIS mitigation measures.

12 **Table 3.2-2: Annual Operational GHG Emissions—2008 Actual Baseline (mty)**

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
OGV - Transit and Anchoring <sup>1</sup>	5,641	0.08	0.31	5,725
OGV – Hoteling	1,054	0.00	0.08	1,075
Harbor Craft	41	0.00	0.00	42
CHE	6,593	0.48	0.00	6,606
Rail On-Site	827	0.07	0.02	835
Rail Off-Site	12,335	1.00	0.32	12,449
On-Site Trucks	1,174	0.15	0.07	1,197
Off-Site Trucks	13,585	0.67	2.31	14,216
Employee Commute On-Site	44	0.02	0.01	47
Employee Commute Off-Site	742	0.04	0.04	755
Backlands Electricity Consumption	442	0.03	0.00	443
AMP Electricity Consumption	696	0.04	0.01	698
<b>Total Operational Year 2008</b>	<b>43,175</b>	<b>2.57</b>	<b>3.17</b>	<b>44,088</b>

Notes:

1) OGV - Transit and Anchoring also includes emissions from the AQMD Overwater Boundary to the Stateline

### 14 3.2.4.4 Thresholds of Significance

#### 15 CEQA Significance Thresholds

16 State CEQA Guidelines Section 15064.4(a) affords a lead agency discretion to evaluate  
17 the significance of GHG emissions quantitatively or qualitatively, and to select the model  
18 or methodology it considers appropriate for doing so. CEQA Guidelines section 15064.4  
19 (b) sets forth the factors that should be considered by a lead agency when assessing the  
20 significance of impacts from GHG emissions on the environment. These factors are:

- 21 • the extent to which a project may increase or reduce GHG emissions compared  
22 with the existing environmental setting;
- 23 • whether project emissions exceed a threshold of significance that the lead agency  
24 determines applicable to a project; and

- 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<sub>2</sub>e 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), however for the Revised Project all construction activities were completed prior to 2014.

LAHD has determined the SCAQMD-adopted 10,000 mty CO<sub>2</sub>e threshold to be suitable for LAHD projects for the following reasons:

- In April 2008, the SCAQMD convened a GHG CEQA Significance Threshold Working Group. Members of the working group include government agencies implementing CEQA representatives from various stakeholder groups that provided input to SCAQMD staff on developing GHG CEQA significance thresholds.
- 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 (SCAQMD, 2008), with the AB 32 2020 reduction requirements incorporated as a subset of EO S-3-05. EO S-3-05 sets an emission reduction target of 80 percent below 1990 levels by 2050. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020 (SCAQMD, 2016a). 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 typical components of LAHD projects. The California Air Pollution Control Officers Association (CAPCOA) guidance considers industrial projects to include substantial GHG emissions associated with mobile sources (CAPCOA, 2008). 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 mobile 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 (SCAQMD, 2016a). For example, in one of its recent EIRs, the SCAQMD applied the 10,000 mty threshold to a refinery project where the mobile source

1 emissions would increase and the stationary source emissions (combined direct  
2 and indirect) would decrease relative to baseline (SCAQMD, 2016b, SCAQMD  
3 2017). The mobile source emissions included construction equipment, on-road  
4 vehicles, and on- and off-site rail transport. Moreover, in the same EIR, the  
5 SCAQMD also applied the 10,000 mty threshold to its list of related cumulative  
6 projects, two of which were LAHD projects (SCIG and ILWU Local 13 Dispatch  
7 Hall) with dominant mobile source emissions. The SCAQMD also specifically  
8 approved the use of the 10,000 mty threshold for this Recirculated Draft SEIR  
9 (SCAQMD, 2015).

- 10 • The SCAQMD industrial source threshold is appropriate for projects with  
11 sources that use primarily diesel fuel. Although most of the sources that were  
12 considered by the SCAQMD in the development of the 10,000 mty threshold are  
13 natural gas-fueled (SCAQMD, 2008), both natural gas and diesel combustion  
14 produce CO<sub>2</sub> as the dominant GHG (TCR, 2016). Furthermore, the conversion  
15 of all GHG species into a CO<sub>2</sub>e ensures that the GHG emissions from any source,  
16 regardless of fuel type, can be evaluated equitably.
- 17 • The SCAQMD industrial source threshold is conservative for LAHD projects.  
18 The 10,000 mty threshold is intended to achieve a 90 percent emission capture  
19 rate for permitted industrial facilities subject to the SCAQMD's Annual Emission  
20 Reporting (AER) program. LAHD projects subject to CEQA review usually far  
21 exceed this threshold because of their large size and large number of mobile  
22 sources such as ocean going vessels, drayage trucks, trains, and cargo handling  
23 equipment.

24 After considering the CEQA Guidelines and LAHD-specific climate change impact  
25 issues, LAHD has set the following threshold for use in this SEIR to determine the  
26 significance of project-related GHG impacts. The Revised Project would create a  
27 significant GHG impact if it:

- 28 • **GHG-1:** Generates GHG emissions that, either directly or indirectly, exceed  
29 the SCAQMD 10,000 mty CO<sub>2</sub>e threshold.

30 For this SEIR, no construction emissions are amortized in assessing impacts under GHG-  
31 1, as construction of the China Shipping Terminal has already been completed, and is not  
32 a component of the Revised Project analyzed in this document.

33 As noted above, CEQA Guideline Section 15064.4(b)(3) provides that one factor to be  
34 considered in assessing the significance of GHG emissions on the environment is “the  
35 extent to which a project complies with regulations or requirements adopted to implement  
36 a statewide, regional or local plan for the reduction or mitigation of GHG emissions.”

37 Several state, regional and local plans have been developed that set goals for the  
38 reduction of GHG emissions over the next few years and decades. Some of these plans  
39 and policies (notably, EO S-3-05 and AB 32) were taken into account by the SCAQMD  
40 in developing the 10,000 mty CO<sub>2</sub>e threshold. However, no regulations or requirements  
41 have been adopted by relevant public agencies to implement those plans for specific  
42 projects, within the meaning of CEQA Guidelines Section 15064.4(b)(3). Consequently,  
43 no CEQA significance assessment based upon compliance with such regulations or  
44 requirements can be made for the Revised Project. Nevertheless, for the purpose of  
45 disclosure, LAHD has considered for informational purposes only, whether the Revised  
46 Project would be consistent with federal, state or local plans, policies or regulations for  
47 the reduction of GHG emissions, as set forth below.

1 Finally, State CEQA Guidelines Section 15126.2(a) identifies the need to evaluate  
2 potential impacts of locating development in areas that are vulnerable to climate change  
3 effects. The EIR “should evaluate any potentially significant impacts of locating  
4 development in other areas susceptible to hazardous conditions (e.g., floodplains,  
5 coastlines, wildfire risk areas).” Because the Revised Project does not involve any  
6 physical alterations to the CS Container Terminal, which has already been constructed,  
7 and because no significance thresholds are defined for evaluating the potential impacts of  
8 climate change, no further evaluation is required. However, a qualitative assessment of  
9 consistency with related climate change policies and plans is provided for informational  
10 purposes only.

### 11 3.2.4.5 Impact Determination

#### 12 **Impact GHG-1: Would the Revised Project generate GHG emissions, 13 either directly or indirectly, that would exceed the SCAQMD 10,000 14 mty CO<sub>2</sub>e threshold?**

15 Continued operation of the Revised Project would generate operational GHG emissions  
16 which have been evaluated for analysis years 2012, 2014, 2018, 2023, 2030, 2036 and  
17 2045. Continued operation of the Revised Project would occur with specific revisions  
18 made to several Air Quality Mitigation Measures that have been described in Section 3.1  
19 and which would affect GHG emissions from the Revised Project. These include:

20 **MM AQ-9: Alternative Maritime Power.** Starting on the effective date of a new lease  
21 amendment between the Tenant and the LAHD and annually thereafter, all ships calling  
22 at Berths 97-109 must use AMP while hoteling in the Port, with a 95 percent compliance  
23 rate. Exceptions may be made if one of the following circumstances or conditions exists:

- 24 1. Emergencies
- 25 2. An AMP-capable berth is unavailable
- 26 3. An AMP-capable ship is not able to plug in
- 27 4. The vessel is not AMP-capable.

28 In the event one of these circumstances or conditions exist, an equivalent alternative at-  
29 berth emission control capture system shall be deployed, if feasible, based on availability,  
30 scheduling, operational feasibility, and contracting requirements between the provider of  
31 the equivalent alternative technology and the terminal operator. The equivalent  
32 alternative technology must, at a minimum, meet the emissions reductions that would be  
33 achieved from AMP.

34 **MM AQ-10: Vessel Speed Reduction Program (VSRP).** Starting on the effective  
35 date of a new lease amendment between the Tenant and the LAHD and annually  
36 thereafter, at least 95 percent of vessels calling at Berths 97-109 shall either 1) comply  
37 with the expanded VSRP of 12 knots between 40 nm from Point Fermin and the  
38 Precautionary Area or 2) comply with an alternative compliance plan approved by the  
39 LAHD for a specific vessel and type. Any alternative compliance plan shall be submitted  
40 to LAHD at least 90 days in advance for approval, and shall be supported by data that  
41 demonstrates the ability of the alternative compliance plan for the specific vessel and  
42 type to achieve emissions reductions comparable to or greater than those achievable by  
43 compliance with the VSRP. The alternative compliance plan shall be implemented once  
44 written notice of approval is granted by the LAHD.



1 **MM AQ-15: Yard Tractors.** 1) No later than one year after the effective date of a new  
2 lease amendment between the Tenant and the LAHD, all LPG yard tractors of model  
3 years 2007 or older shall be replaced with alternative-fuel units that meet or are lower  
4 than a NOx emission rate of 0.02 g/bhp-hr and Tier 4 final off-road emission rates for  
5 other criteria pollutants. 2) No later than five years after the effective date of a new lease  
6 amendment between the Tenant and the LAHD, all LPG yard tractors of model years  
7 2011 or older shall be replaced with alternative fuel units that meet or are lower than a  
8 NOx emission rate of 0.02 g/bhp-hr and Tier 4 final off-road engine emission rates for  
9 other criteria pollutants.

10 **MM AQ-16 CHE at Rail Yard:** This measure is combined with MM AQ-17 below.

11 **MM AQ-17: Cargo-Handling Equipment.** All yard equipment at the terminal except  
12 yard tractors shall implement the following requirements:

13 Forklifts:

- 14 ○ By one year after the effective date of a new lease amendment between the  
15 Tenant and the LAHD, all 18-ton diesel forklifts of model years 2004 and  
16 older shall be replaced with units that meet or are lower than Tier 4 final off-  
17 road engine emission rates for PM and NOx.
- 18 ○ By two years after the effective date of a new lease amendment between the  
19 Tenant and the LAHD, all 18-ton diesel forklifts of model years 2005 and  
20 older shall be replaced with units that meet or are lower than Tier 4 final off-  
21 road engine emission rates for PM and NOx.
- 22 ○ By two years after the effective date of a new lease amendment between the  
23 Tenant and the LAHD, all 5-ton forklifts of model years 2011 or older shall  
24 be replaced with zero-emission units.
- 25 ○ By three years after the effective date of a new lease amendment between the  
26 Tenant and the LAHD, all 18-ton diesel forklifts of model years 2007 and  
27 older shall be replaced with units that meet or are lower than Tier 4 final off-  
28 road engine emission rates for PM and NOx.

29 Toppicks:

- 30 ○ By one year after the effective date of a new lease amendment between the  
31 Tenant and the LAHD, all diesel top-picks of model years 2006 and older  
32 shall be replaced with units that meet or are lower than Tier 4 final off-road  
33 engine emission rates for PM and NOx.
- 34 ○ By three years after the effective date of a new lease amendment between the  
35 Tenant and the LAHD, all diesel top-picks of model years 2007 and older  
36 shall be replaced with units that meet or are lower than Tier 4 final off-road  
37 engine emission rates for PM and NOx.
- 38 ○ By five years after the effective date of a new lease amendment between the  
39 Tenant and the LAHD, all diesel top-picks of model years 2014 and older  
40 shall be replaced with units that meet or are lower than Tier 4 final off-road  
41 engine emission rates for PM and NOx.

42 Rubber-Tired Gantries:

- 43 ○ By three years after the effective date of a new lease amendment between the  
44 Tenant and the LAHD, all diesel RTG cranes of model years 2003 and older  
45 shall be replaced with diesel-electric hybrid units with diesel engines that

- 1 meet or are lower than Tier 4 final off-road engine emission rates for PM and  
 2 NOx.
- 3 ○ By five years after the effective date of a new lease amendment between the  
 4 Tenant and the LAHD, all diesel RTG cranes of model years 2004 and older  
 5 shall be replaced with diesel-electric hybrid units with diesel engines that  
 6 meet or are lower than Tier 4 final off-road engine emission rates for PM and  
 7 NOx.
  - 8 ○ By seven years after the effective date of a new lease amendment between  
 9 the Tenant and the LAHD, four RTG cranes of model years 2005 and older  
 10 shall be replaced with all-electric units, and one diesel RTG crane of model  
 11 year 2005 shall be replaced with a diesel-electric hybrid unit with a diesel  
 12 engine that meets or is lower than Tier 4 final off-road engine emission rates  
 13 for PM and NOx.

14 Sweepers:

- 15 ○ Sweeper(s) shall be alternative fuel or the cleanest available by six years  
 16 after the effective date of a new lease amendment between the Tenant and the  
 17 LAHD.

18 Shuttle Buses:

- 19 ○ Gasoline shuttle buses shall be zero-emission units by seven years after the  
 20 effective date of a new lease amendment between the Tenant and the LAHD.

21 Mitigation measures listed above are used in the Revised Project emissions analysis. For  
 22 purposes of the emissions estimates in this Recirculated Draft SEIR, it was assumed that  
 23 the effective date of the new lease amendment was 2019, therefore, effects of the Revised  
 24 Project mitigations are included in the calculations starting from year 2019 based on the  
 25 phasing described by each mitigation measure.

26 The Revised Project operational GHG emissions under the revised mitigation measures  
 27 MM AQ-9, MM AQ-10, MMAQ-15, MM AQ-17 are summarized below in Table 3.2-3.  
 28 The operational GHG emissions from the Revised Project are compared to the 2008  
 29 Actual Baseline for purposes of determining the impact.

30 **Table 3.2-3: Operational GHG Emissions – Revised Project (mty)**

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year – 2012 Actual</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring <sup>1</sup>	6,630	0.12	0.34	6,723
OGV – Hoteling	2,145	0.02	0.13	2,179
Harbor Craft	48	0.00	0.00	49
CHE	14,513	1.31	0.00	14,549
Rail On-Site	951	0.08	0.02	960
Rail Off-Site	13,165	1.07	0.35	13,287
On-Site Trucks	2,036	0.05	0.11	2,066
Off-Site Trucks	22,738	0.20	3.98	23,798
Employee Commute On-Site	45	0.02	0.01	47
Employee Commute Off-Site	754	0.03	0.03	763
Backlands Electricity Consumption	900	0.05	0.01	903

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
AMP Electricity Consumption	209	0.01	0.00	209
Total Operational Year 2012	<b>64,133</b>	<b>2.95</b>	<b>4.98</b>	<b>65,534</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
Revised Project Minus 2008 Actual Baseline				<b>21,446</b>
Significance Threshold				10,000
Significant?				<b>Yes</b>
<b>Year – 2014 Actual</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring1	17,840	0.30	1.10	18,141
OGV – Hoteling	5,093	0.02	0.36	5,190
Harbor Craft	134	0.00	0.01	136
CHE	25,507	2.70	0.00	25,582
Rail On-Site	1,054	0.08	0.03	1,063
Rail Off-Site	13,514	1.09	0.36	13,639
On-Site Trucks	5,027	0.09	0.25	5,095
Off-Site Trucks	48,530	0.33	8.55	50,805
Employee Commute On-Site	41	0.01	0.00	43
Employee Commute Off-Site	702	0.02	0.02	709
Backlands Electricity Consumption	1,924	0.11	0.01	1,930
AMP Electricity Consumption	1,488	0.09	0.01	1,494
Total Operational Year 2014	<b>120,855</b>	<b>4.86</b>	<b>10.70</b>	<b>123,826</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
Revised Project Minus 2008 Actual Baseline				<b>79,738</b>
Significance Threshold				10,000
Significant?				<b>Yes</b>
<b>Year – 2018 Revised Project</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring1	41,553	0.66	2.20	42,153
OGV – Hoteling	5,626	0.02	0.42	5,738
Harbor Craft	264	0.01	0.01	267
CHE	20,669	2.58	0.00	20,741
Rail On-Site	981	0.08	0.03	990
Rail Off-Site	15,793	1.28	0.42	15,939
On-Site Trucks	4,729	0.10	0.23	4,793
Off-Site Trucks	44,186	0.38	7.87	46,281
Employee Commute On-Site	77	0.02	0.01	79
Employee Commute Off-Site	1,170	0.02	0.03	1,178
Backlands Electricity Consumption	1,456	0.09	0.01	1,461
AMP Electricity Consumption	1,800	0.11	0.01	1,807
Total Operational Year 2018	<b>138,302</b>	<b>5.32</b>	<b>11.23</b>	<b>141,427</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
Revised Project Minus 2008 Actual Baseline				<b>97,339</b>
Significance Threshold				10,000

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Significant?	<b>Yes</b>			
<b>Year – 2023 Revised Project</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring1	57,789	1.03	2.94	58,598
OGV – Hoteling	3,675	0.02	0.27	3,746
Harbor Craft	255	0.01	0.01	258
CHE	29,796	11.12	0.00	30,107
Rail On-Site	1,200	0.10	0.03	1,211
Rail Off-Site	23,786	1.93	0.63	24,006
On-Site Trucks	5,785	0.06	0.29	5,863
Off-Site Trucks	49,819	0.09	9.33	52,294
Employee Commute On-Site	85	0.01	0.01	88
Employee Commute Off-Site	1,323	0.01	0.02	1,329
Backlands Electricity Consumption	2,688	0.16	0.02	2,698
AMP Electricity Consumption	1,218	0.07	0.01	1,222
<b>Total Operational Year 2023</b>	<b>177,420</b>	<b>14.59</b>	<b>13.55</b>	<b>181,420</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
Revised Project Minus 2008 Actual Baseline				<b>137,332</b>
Significance Threshold				10,000
Significant?	<b>Yes</b>			
<b>Year – 2030 Revised Project</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring1	61,064	1.18	3.03	61,901
OGV – Hoteling	3,606	0.02	0.26	3,675
Harbor Craft	255	0.01	0.01	258
CHE	30,303	18.00	0.00	30,807
Rail On-Site	1,193	0.10	0.03	1,204
Rail Off-Site	24,910	2.02	0.66	25,140
On-Site Trucks	5,510	0.06	0.27	5,582
Off-Site Trucks	47,013	0.06	8.57	49,286
Employee Commute On-Site	79	0.01	0.01	81
Employee Commute Off-Site	5,510	0.06	0.27	5,582
Backlands Electricity Consumption	3,001	0.18	0.02	3,012
AMP Electricity Consumption	1,254	0.07	0.01	1,258
<b>Total Operations Year 2030</b>	<b>179,402</b>	<b>21.70</b>	<b>12.88</b>	<b>183,424</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
Revised Project Minus 2008 Actual Baseline				<b>139,336</b>
Significance Threshold				10,000
Significant?	<b>Yes</b>			
<b>Year – 2036 Revised Project</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring1	61,076	1.18	3.03	61,913
OGV – Hoteling	3,606	0.02	0.26	3,675
Harbor Craft	255	0.01	0.01	258

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
CHE	30,329	17.99	0.00	30,832
Rail On-Site	1,181	0.09	0.03	1,191
Rail Off-Site	23,547	1.91	0.62	23,765
On-Site Trucks	4,815	0.06	0.23	4,877
Off-Site Trucks	41,171	0.05	7.43	43,143
Employee Commute On-Site	73	0.01	0.01	74
Employee Commute Off-Site	1,111	0.00	0.02	1,115
Backlands Electricity Consumption	3,001	0.18	0.02	3,012
AMP Electricity Consumption	1,254	0.07	0.01	1,258
<b>Total Operations Year 2036</b>	<b>171,417</b>	<b>21.56</b>	<b>11.67</b>	<b>175,115</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
Revised Project Minus 2008 Actual Baseline				<b>131,027</b>
Significance Threshold				10,000
Significant?				<b>Yes</b>
<b>Year – 2045 Revised Project</b>		<b>Emissions in metric tons per year</b>		
OGV - Transit and Anchoring <sup>1</sup>	61,076	1.18	3.03	61,913
OGV – Hoteling	3,606	0.02	0.26	3,675
Harbor Craft	255	0.01	0.01	258
CHE	30,350	17.75	0.00	30,847
Rail On-Site	1,180	0.09	0.03	1,191
Rail Off-Site	21,673	1.75	0.57	21,873
On-Site Trucks	4,168	0.06	0.19	4,221
Off-Site Trucks	36,363	0.04	6.40	38,060
Employee Commute On-Site	71	0.01	0.01	73
Employee Commute Off-Site	1,106	0.00	0.02	1,111
Backlands Electricity Consumption	3,001	0.18	0.02	3,012
AMP Electricity Consumption	1,254	0.07	0.01	1,258
<b>Total Operations Year 2045</b>	<b>164,103</b>	<b>21.16</b>	<b>10.56</b>	<b>167,493</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
Revised Project Minus 2008 Actual Baseline				<b>123,405</b>
Significance Threshold				10,000
Significant?				<b>Yes</b>

Notes:

- 1) OGV - Transit and Anchoring also includes emissions from the AQMD Overwater Boundary to the Stateline

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**Impact Determination**

Table 3.2-3 shows that the Revised Project’s GHG emissions minus the 2008 Actual Baseline would exceed the GHG threshold of 10,000 mty in all of the study years.

**Mitigation Measures**

New GHG mitigation measures, summarized below, would reduce GHG emissions.

**MM GHG-1: LED Lighting.** All lighting within the interior of buildings on the premises and outdoor high mast terminal lighting will be replaced with LED lighting or a technology with similar energy-saving capabilities within two years after the effective date of the new lease amendment between the Tenant and the LAHD or by no later than 2023.

Twenty-four 100-foot and 17 60-foot, high-mast light poles would be converted to LED lighting by 2023. The effects of converting high mast light poles to LED on electricity-consumption GHG emissions is quantified; the effects of converting interior lighting to LED is not quantified.

The following lease measure, summarized below, was not quantified for GHG emission reductions:

**LM GHG-1 GHG Credit Fund:** 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. 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. Tenant shall have the option to either: (i) make a one-time fund contribution of \$250,000, payable upon execution of a new lease amendment, or (ii) make a payment in 2030, at the time the peak impact would occur, in an amount calculated based on the market value of carbon credits at that time, and actual GHG emissions that exceed whatever GHG threshold exists at that time as approved by the LAHD. 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.

### **Residual Impacts**

Table 3.2-4 shows the residual impacts of the Revised Project after application of mitigation measure MM GHG-1, LED lighting in years 2023, 2030, 2036 and 2045. Impacts for the Revised Project would remain significant and unavoidable after application of mitigation measure MM GHG-1.

**Table 3.2-4: Operational GHG Emissions – Revised Project with MM GHG-1 (mtt) (only affected years shown)**

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year - 2023 Revised Project with GHG Mitigation</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring <sup>1</sup>	57,789	1.03	2.94	58,598
OGV – Hoteling	3,675	0.02	0.27	3,746
Harbor Craft	255	0.01	0.01	258
CHE	29,796	11.12	0.00	30,107
Rail On-Site	1,200	0.10	0.03	1,211
Rail Off-Site	23,786	1.93	0.63	24,006
On-Site Trucks	5,785	0.06	0.29	5,863
Off-Site Trucks	49,819	0.09	9.33	52,294
Employee Commute On-Site	85	0.01	0.01	88
Employee Commute Off-Site	1,323	0.01	0.02	1,329
Backlands Electricity Consumption with LED mitigation	2,496	0.15	0.02	2,505
AMP Electricity Consumption	1,218	0.07	0.01	1,222

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Total Operational Year 2023	<b>177,228</b>	<b>14.58</b>	<b>13.55</b>	<b>181,227</b>
2008 Actual Baseline				44,088
Revised Project Minus 2008 Actual Baseline				<b>137,139</b>
Significance Threshold				10,000
Significant?				<b>Yes</b>
<b>Year - 2030 Revised Project with GHG Mitigation</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring1	61,064	1.18	3.03	61,901
OGV – Hoteling	3,606	0.02	0.26	3,675
Harbor Craft	255	0.01	0.01	258
CHE	30,303	18.00	0.00	30,807
Rail On-Site	1,193	0.10	0.03	1,204
Rail Off-Site	24,910	2.02	0.66	25,140
On-Site Trucks	5,510	0.06	0.27	5,582
Off-Site Trucks	47,013	0.06	8.57	49,286
Employee Commute On-Site	79	0.01	0.01	81
Employee Commute Off-Site	1,215	0.01	0.02	1,219
Backlands Electricity Consumption with LED mitigation	2,809	0.17	0.02	2,819
AMP Electricity Consumption	1,254	0.07	0.01	1,258
Total Operations Year 2030	<b>179,210</b>	<b>21.69</b>	<b>12.88</b>	<b>183,231</b>
2008 Actual Baseline				44,088
Revised Project Minus 2008 Actual Baseline				<b>139,143</b>
Significance Threshold				10,000
Significant?				<b>Yes</b>
<b>Year - 2036 Revised Project with GHG Mitigation</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring1	61,076	0.15	3.03	61,884
OGV – Hoteling	3,606	0.02	0.26	3,675
Harbor Craft	255	0.01	0.01	258
CHE	30,329	17.99	0.00	30,832
Rail On-Site	1,181	0.09	0.03	1,191
Rail Off-Site	23,547	1.91	0.62	23,765
On-Site Trucks	4,815	0.06	0.23	4,877
Off-Site Trucks	41,171	0.05	7.43	43,143
Employee Commute On-Site	73	0.01	0.01	74
Employee Commute Off-Site	1,111	0.00	0.02	1,115
Backlands Electricity Consumption with LED mitigation	2,809	0.17	0.02	2,819
AMP Electricity Consumption	1,254	0.07	0.01	1,258
Total Operations Year 2036	<b>171,226</b>	<b>20.52</b>	<b>11.67</b>	<b>174,893</b>
2008 Actual Baseline				44,088
Revised Project Minus 2008 Actual Baseline				<b>130,805</b>
Significance Threshold				10,000
Significant?				<b>Yes</b>

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year - 2045 Revised Project with GHG Mitigation</b>				
<b>Emissions in metric tons per year</b>				
OGV - Transit and Anchoring <sup>1</sup>	61,076	1.18	3.03	61,913
OGV – Hoteling	3,606	0.02	0.26	3,675
Harbor Craft	255	0.01	0.01	258
CHE	30,350	17.75	0.00	30,847
Rail On-Site	1,180	0.09	0.03	1,191
Rail Off-Site	21,673	1.75	0.57	21,873
On-Site Trucks	4,168	0.06	0.19	4,221
Off-Site Trucks	36,363	0.04	6.40	38,060
Employee Commute On-Site	71	0.01	0.01	73
Employee Commute Off-Site	1,106	0.00	0.02	1,111
Backlands Electricity Consumption with LED mitigation	2,809	0.17	0.02	2,819
AMP Electricity Consumption	1,254	0.07	0.01	1,258
<b>Total Operations Year 2045</b>	<b>163,911</b>	<b>21.15</b>	<b>10.55</b>	<b>167,301</b>
2008 Actual Baseline				44,088
Revised Project Minus 2008 Actual Baseline				<b>123,213</b>
Significance Threshold				10,000
Significant?				<b>Yes</b>

Notes:

1) OGV - Transit and Anchoring also includes emissions from the AQMD Overwater Boundary to the Stateline

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**Impacts of FEIR Mitigated Scenario (informational only)**

The same methodology described above to analyze the GHG impacts from the Revised Project was used to analyze, for informational purposes only, the impacts of the FEIR Mitigated Scenario that is defined in Section 3.1.1. of this Recirculated Draft SEIR a scenario that assumes that all mitigation measures included in the 2008 EIS/EIR were fully and timely implemented, and that further assumes the incremental increase in terminal throughput as shown in Table 2-3 of this Recirculated Draft SEIR. As with the Revised Project, the forecasted GHG emissions if all 2008 EIR/EIS mitigation measures had been applied are compared to the 2008 Actual Baseline to provide a direct comparison to the impact analysis in Tables 3.2-3 and 3.2-4. The results are shown in Table 3.2-5.



1  
2**Table 3.2-5: Operational GHG Emissions – FEIR Mitigated Scenario (mty)  
(informational only)**

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year – 2012 FEIR Mitigated</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring <sup>1</sup>	6,377	0.11	0.33	6,467
OGV – Hoteling	1,020	0.00	0.08	1,041
Harbor Craft	48	0.00	0.00	49
CHE	12,762	1.08	0.00	12,793
Rail On-Site	951	0.08	0.02	960
Rail Off-Site	13,165	1.07	0.35	13,287
On-Site Trucks	2,036	0.05	0.11	2,066
Off-Site Trucks	22,738	0.20	3.98	23,798
Employee Commute On-Site	45	0.02	0.01	47
Employee Commute Off-Site	754	0.03	0.03	763
Backlands Electricity Consumption	900	0.05	0.01	903
AMP Electricity Consumption	1,987	0.12	0.01	1,994
<b>Total Operational Year 2012</b>	<b>62,783</b>	<b>2.81</b>	<b>4.93</b>	<b>64,168</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
FEIR Mitigated Minus 2008 Actual Baseline				<b>20,080</b>
Significance Threshold				10,000
<b>Year – 2014 FEIR Mitigated</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring <sup>1</sup>	17,813	0.30	1.10	18,113
OGV – Hoteling	4,143	0.01	0.32	4,229
Harbor Craft	134	0.00	0.01	136
CHE	22,048	1.92	0.00	22,101
Rail On-Site	1,054	0.08	0.03	1,063
Rail Off-Site	13,514	1.09	0.36	13,639
On-Site Trucks	5,027	0.09	0.25	5,095
Off-Site Trucks	48,530	0.33	8.55	50,805
Employee Commute On-Site	41	0.01	0.00	43
Employee Commute Off-Site	702	0.02	0.02	709
Backlands Electricity Consumption	1,924	0.11	0.01	1,930
AMP Electricity Consumption	1,828	0.11	0.01	1,834
<b>Total Operational Year 2014</b>	<b>116,758</b>	<b>4.09</b>	<b>10.66</b>	<b>119,698</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
FEIR Mitigated Minus 2008 Actual Baseline				<b>75,610</b>
Significance Threshold				10,000
<b>Year – 2018 FEIR Mitigated</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring <sup>1</sup>	41,292	0.65	2.19	41,891
OGV – Hoteling	5,414	0.02	0.41	5,525
Harbor Craft	264	0.01	0.01	267
CHE	20,858	0.71	0.00	20,878
Rail On-Site	981	0.08	0.03	990
Rail Off-Site	15,793	1.28	0.42	15,939

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
On-Site Trucks	4,729	0.10	0.23	4,793
Off-Site Trucks	44,186	0.38	7.87	46,281
Employee Commute On-Site	77	0.02	0.01	79
Employee Commute Off-Site	1,170	0.02	0.03	1,178
Backlands Electricity Consumption	1,456	0.09	0.01	1,461
AMP Electricity Consumption	1,857	0.11	0.01	1,864
<b>Total Operational Year 2018</b>	<b>138,077</b>	<b>3.44</b>	<b>11.21</b>	<b>141,144</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
FEIR Mitigated Minus 2008 Actual Baseline				<b>97,056</b>
Significance Threshold				10,000
<b>Year – 2023 FEIR Mitigated</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring <sup>1</sup>	57,336	1.02	2.92	58,140
OGV – Hoteling	3,496	0.01	0.26	3,565
Harbor Craft	255	0.01	0.01	258
CHE	32,106	1.99	0.00	32,162
Rail On-Site	1,200	0.10	0.03	1,211
Rail Off-Site	23,786	1.93	0.63	24,006
On-Site Trucks	5,785	0.06	0.29	5,863
Off-Site Trucks	49,819	0.09	9.33	52,294
Employee Commute On-Site	85	0.01	0.01	88
Employee Commute Off-Site	1,323	0.01	0.02	1,329
Backlands Electricity Consumption	2,688	0.16	0.02	2,698
AMP Electricity Consumption	1,282	0.08	0.01	1,287
<b>Total Operational Year 2023</b>	<b>179,162</b>	<b>5.46</b>	<b>13.53</b>	<b>182,900</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
FEIR Mitigated Minus 2008 Actual Baseline				<b>138,812</b>
Significance Threshold				10,000
<b>Year – 2030 FEIR Mitigated</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring <sup>1</sup>	60,586	1.17	3.01	61,416
OGV – Hoteling	3,421	0.01	0.25	3,489
Harbor Craft	255	0.01	0.01	258
CHE	35,813	2.34	0.00	35,878
Rail On-Site	1,193	0.10	0.03	1,204
Rail Off-Site	24,910	2.02	0.66	25,140
On-Site Trucks	5,510	0.06	0.27	5,582
Off-Site Trucks	47,013	0.06	8.57	49,286
Employee Commute On-Site	79	0.01	0.01	81
Employee Commute Off-Site	1,215	0.01	0.02	1,219
Backlands Electricity Consumption	3,001	0.18	0.02	3,012
AMP Electricity Consumption	1,320	0.08	0.01	1,325
<b>Total Operations Year 2030</b>	<b>184,315</b>	<b>6.04</b>	<b>12.85</b>	<b>187,890</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
FEIR Mitigated Minus 2008 Actual Baseline				<b>143,802</b>

Source Category	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Significance Threshold				10,000
<b>Year – 2036 FEIR Mitigated</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring <sup>1</sup>	60,586	1.17	3.01	61,416
OGV – Hoteling	3,421	0.01	0.25	3,489
Harbor Craft	255	0.01	0.01	258
CHE	35,835	2.04	0.00	35,892
Rail On-Site	1,181	0.09	0.03	1,191
Rail Off-Site	23,547	1.91	0.62	23,765
On-Site Trucks	4,815	0.06	0.23	4,877
Off-Site Trucks	41,171	0.05	7.43	43,143
Employee Commute On-Site	73	0.01	0.01	74
Employee Commute Off-Site	1,111	0.00	0.02	1,115
Backlands Electricity Consumption	3,001	0.18	0.02	3,012
AMP Electricity Consumption	1,320	0.08	0.01	1,325
<b>Total Operations Year 2036</b>	<b>176,315</b>	<b>5.60</b>	<b>11.64</b>	<b>179,557</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
FEIR Mitigated Minus 2008 Actual Baseline				<b>135,469</b>
Significance Threshold				10,000
<b>Year – 2045 FEIR Mitigated</b>	<b>Emissions in metric tons per year</b>			
OGV - Transit and Anchoring <sup>1</sup>	60,586	1.17	3.01	61,416
OGV – Hoteling	3,421	0.01	0.25	3,489
Harbor Craft	255	0.01	0.01	258
CHE	35,812	1.25	0.00	35,847
Rail On-Site	1,180	0.09	0.03	1,191
Rail Off-Site	21,673	1.75	0.57	21,873
On-Site Trucks	4,168	0.06	0.19	4,221
Off-Site Trucks	36,363	0.04	6.40	38,060
Employee Commute On-Site	71	0.01	0.01	73
Employee Commute Off-Site	1,106	0.00	0.02	1,111
Backlands Electricity Consumption	3,001	0.18	0.02	3,012
AMP Electricity Consumption	1,320	0.08	0.01	1,325
<b>Total Operations Year 2045</b>	<b>168,957</b>	<b>4.66</b>	<b>10.52</b>	<b>171,876</b>
2008 Actual Baseline	43,175	2.57	3.17	44,088
FEIR Mitigated Minus 2008 Actual Baseline				<b>127,788</b>
Significance Threshold				10,000

## Notes:

1) OGV - Transit and Anchoring also includes emissions from the AQMD Overwater Boundary to the Stateline

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2 Table 3.2-5 shows that with application of all FEIR mitigation measures, the FEIR  
3 Mitigated Scenario operational emissions would still exceed the threshold of significance  
4 for all analysis years. However, the incremental emissions of the FEIR Mitigated  
5 Scenario (i.e., FEIR Mitigated Scenario minus 2008 Actual Baseline) would be lower  
6 than those for the Revised Project for years 2012, 2014 and 2018. The difference in

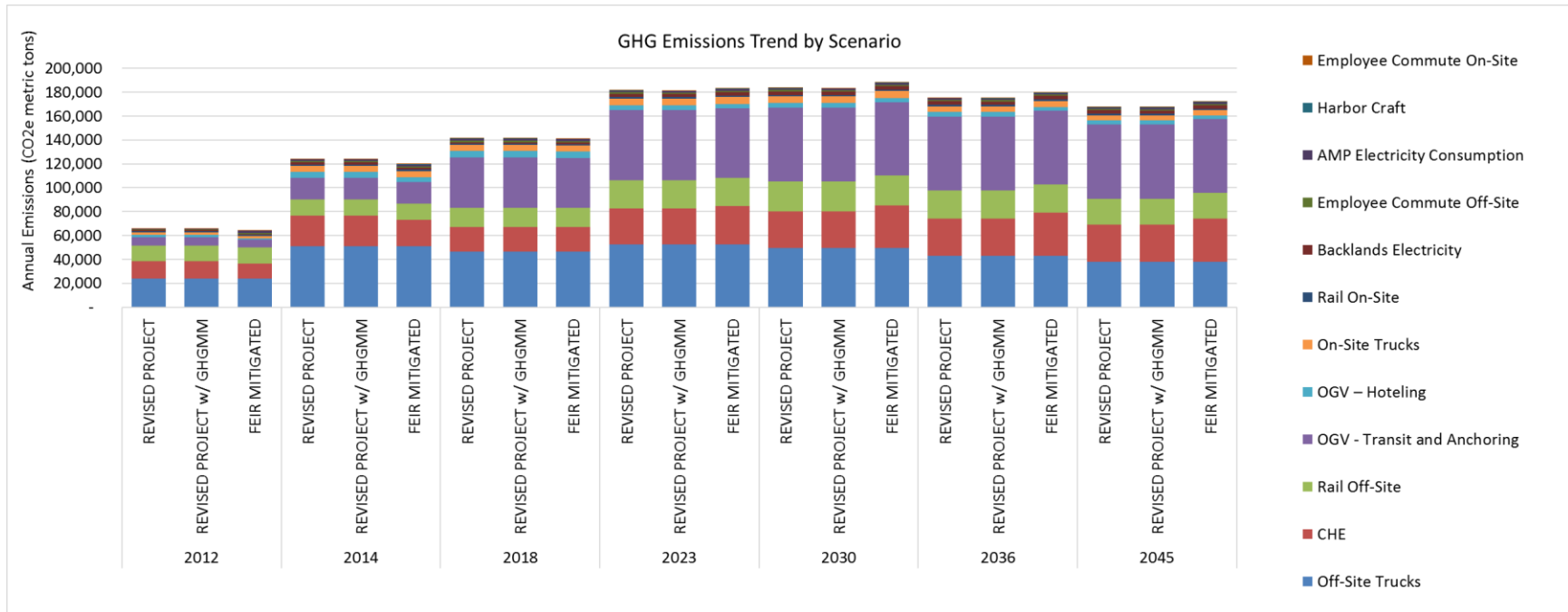
1 incremental emissions between the Revised Project and the FEIR Mitigated Scenario for  
2 years 2012 through 2023 represents the incremental emissionsthat resulted from partial  
3 compliance with the 2008 EIR/EIS mitigation measures in those years.

4 For future years 2023, 2030, 2036 and 2045, the incremental emissions of the Revised  
5 Project would be lower than those of the FEIR Mitigated Scenario. The reason for this is  
6 that yard tractor CO<sub>2</sub> emissions under the Revised Project are lower from 2023 through  
7 2045 than those of the FEIR Mitigated Scenario due to the implementation of ultra-low  
8 NOx yard tractor equipment required by the Revised Project mitigations. This can be  
9 observed in the following review of the GHG emissions trend.

## 10 **Comparison of GHG Emissions Trend for Revised Project and FEIR** 11 **Mitigated Project**

12 Figure 3.2-1 presents the emissions trend for each analysis year under each Scenario  
13 (Revised Project, Revised Project with GHG mitigation, and FEIR Mitigated Project).  
14 Annual emissions increase from 50,000 mty in 2012 up to approximately 190,000 mty in  
15 2045 in each scenario due to the projected throughput activity increase for the terminal.  
16 Therefore, the increment between the analysis years and the 2008 Actual Baseline  
17 increases through the future for both the Revised Project and the FEIR Mitigated  
18 Scenario. The FEIR Mitigated scenario from years 2012 through 2014 shows smaller  
19 total GHGs than the Revised Project due to effects of failure to fully and timely  
20 implement all 2008 EIR/EIS mitigations. The Revised Project GHG estimates for years  
21 2023 through 2045 result in slightly lower emissions than those of the FEIR Mitigated  
22 scenario because the effects of Recirculated Draft SEIR mitigation measures, which  
23 begin from year 2019 onward. GHG emissions for years 2023 through 2045 under the  
24 Revised Project with LED lighting mitigation GHG-1 show a slight decrease in emissions  
25 compared to the Revised Project.

1 **Figure 3.2-1: Annual GHG Emissions Trend by Source Type and Scenario (informational only)**



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1                   **Informational Assessment: The Revised Project would not be**  
2                   **consistent with certain statewide, regional, and local plans and**  
3                   **policies.**

4                   The State of California, the City of Los Angeles, and LAHD have adopted plans and  
5                   policies to reduce GHG emissions. None of these plans or policies constitute regulations  
6                   or requirements adopted to implement a statewide, regional or local plan for reduction or  
7                   mitigation of greenhouse gas emissions which a lead agency is required to consider to  
8                   consider, in assessing GHG emissions, under CEQA Guideline section 15064.4,  
9                   subdivision (b)(3). (See *Center for Biological Diversity v. Cal. Dept. of Fish and Wildlife*  
10                  (*Newhall Ranch*) (2015) 62 Cal.4<sup>th</sup> 204, 223.) Therefore, no CEQA significance  
11                  determination is made with respect to such plans or policies.

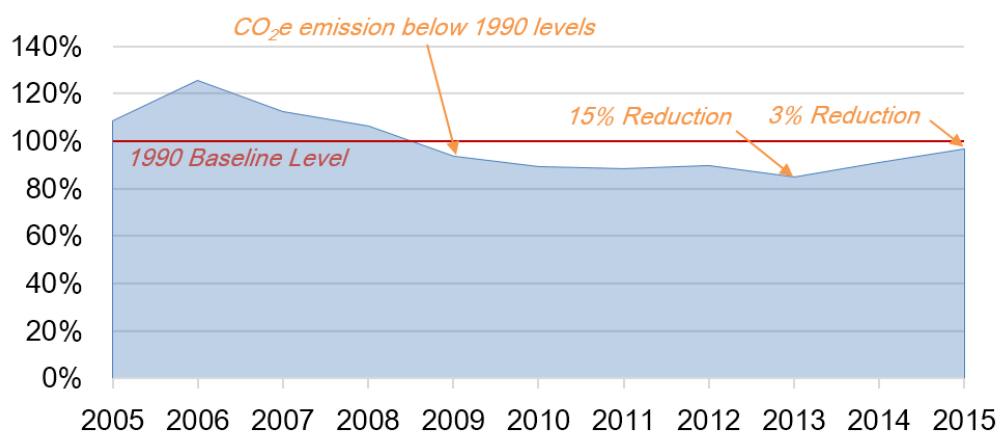
12                  Nevertheless, for informational purposes only, this document provides a discussion of  
13                  consistency with adopted statewide, regional and local plans and policies to reduce GHG  
14                  emissions.

15                  The State of California is leading the way in the United States, related to GHG  
16                  reductions. Several legislative and municipal targets for reducing GHG emissions, below  
17                  1990 levels have been established. Key examples include:

- 18                   • Senate Bill 32 (SB32)  
19                    1990 levels by 2020  
20                    40 percent below 1990 levels by 2030
- 21                   • Assembly Bill 32 (AB 32)  
22                    80 percent below 1990 levels by 2050
- 23                   • City of Los Angeles Sustainable City pLAN  
24                    45 percent below 1990 levels by 2025  
25                    60 percent below 1990 levels by 2035  
26                    80 percent below 1990 levels by 2050

27                  LAHD has been tracking GHG emissions, in terms of carbon dioxide equivalents (CO<sub>2</sub>e)  
28                  since 2005 through the LAHD municipal GHG inventory and the annual inventory of air  
29                  emissions (see Figure 3.2-2). As illustrated below in Figure 3.2-3, Port-related GHG  
30                  emissions (all three scopes) started making significant reductions since 2006, reaching a  
31                  maximum reduction in CO<sub>2</sub>e of 15 percent from 1990 levels in 2013. Subsequently, 2014  
32                  and 2015 saw GHG levels rise due to a period of port congestion that arose from  
33                  circumstances outside of the control of either the LAHD or its tenants. This event  
34                  illustrates a major challenge related to managing GHG-related emissions, as events  
35                  outside the control of LAHD or its individual tenants will continue to have a varying  
36                  degree of impact on the progress of reduction efforts.

1 **Figure 3.2-2: GHG Emissions 2005-2015**



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

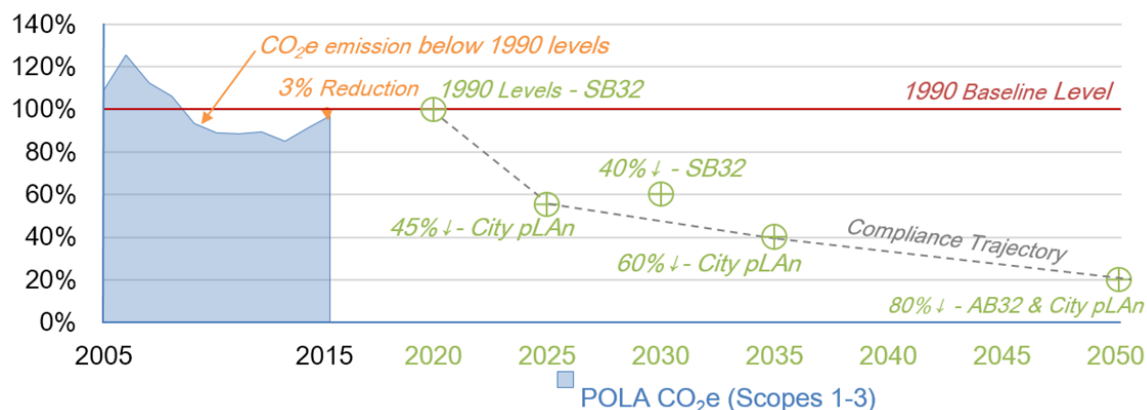
16 There is no single “silver bullet” emission reduction strategy that easily reduces the  
17 sources to meet the various interim targets let alone the final 80 percent reduction, so it  
18 will take continued research, evaluation, engagement, innovation, demonstrations,  
19 investment, and coordination/action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

23 Figure 3.2-3 below shows the key GHG targets listed above with a postulated  
24 ‘compliance trajectory’ set to meet the most stringent targets. It is important to note that  
25 the targets shown in Figure 3.2-2 are not project specific targets, and that no specific  
26 project level regulations or requirements have been developed by agencies for  
27 implementation of these plans. Instead, these targets are goals meant to apply to all  
28 applicable GHG sources in aggregate, which means some sources will need to go beyond  
29 these targets, while others may not be able to meet the target level.

30 As shown, LAHD emission inventories show that port-wide emissions have already met  
31 the SB 32 2020 target, even during the period of temporary congestion, with CO<sub>2</sub>e  
32 emissions anticipated to return to pre-2014 trends starting in 2016.

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**Figure 3.2-3: Actual GHG Emissions 2005-2015 & 2015-2050 GHG Compliance Trajectory**



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Nevertheless, with the very aggressive targets shown in the figure 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 trajectory shown in Figure 3.2-3 above. 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 3.2-6 presents more detailed information on plans, and policies adopted for the purpose of reducing GHG emissions.

**Table 3.2-6: Consideration of Key State and Local GHG-Reducing Plans, and Policies**

Plan or Policy	Plan/Policy Measure	Discussion
<b>EO S-3-05 (2005)</b> 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 binding on local agencies conducting project-level analysis.	EO S-3-05 established State targets and directed State legislature to develop legislation to address those targets.  The Revised Project analysis has quantified GHG impacts for 2012, 2014, 2018, 2023, 2030, 2036 and 2045 and has identified feasible mitigation measures.  EO S-3-05 did not identify project-level measures. The Revised Project would comply with existing regulations, applicable to project activities, and would, by law, comply with future regulatory requirements, applicable to project activities. However, as the Revised Project would exceed the SCAQMD significance threshold under GHG-1, and since EO-S-3-



Plan or Policy	Plan/Policy Measure	Discussion
		<p>05 targets were considered in developing the SCAQMD threshold, it was determined that the Revised Project could not be consistent with the State’s compliance with GHG reduction goals established under EO S-3-05.</p>
<p><b>AB 32– California Global Warming Solutions Act (2006)</b> codified the following statewide targets under S-3-05: (1) Year 2000 levels by 2010; and (2) Year 1990 levels by 2020.</p>	<p>Established State-wide goals that are not directly binding on local agencies conducting project-level analysis.</p>	<p>AB 32 codified EO S-3-05 targets through 2020 and directed State regulatory agencies to develop rules and regulations to meet the 2020 State targets. To date, no such rules and regulations have been promulgated that would be binding on the Revised Project.</p> <p>The Revised Project analysis has quantified GHG impacts for 2023 and has identified feasible mitigation measures.</p> <p>AB 32 did not identify project-level measures. The Revised Project would comply with existing regulations, applicable to project activities, and would, by law, comply with future regulatory requirements, applicable to project activities.</p> <p>However, because the Revised Project would exceed the SCAQMD significance threshold under GHG-1, and since AB 32 targets were considered in developing the SCAQMD threshold, it was determined that the Revised Project would not be consistent with the State’s compliance with AB 32.</p>
<p><b>ARB’s AB 32 Scoping Plan (2008)</b> set a Statewide roadmap for achieving the following AB 32 State targets: (1) Year 2000 levels by 2010; and (2) Year 1990 levels by 2020.</p>	<p>The Scoping Plan includes general recommendations to reduce GHG emissions from various sources. The most relevant to the proposed Project are the Goods Movement Recommendations, which are generally suited to the proposed Project, although they are not legally binding on local agencies conducting project-level analysis.</p>	<p>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</p>

Plan or Policy	Plan/Policy Measure	Discussion
		<p>regulation to fund the program. The Scoping Plan’s reduction actions do not identify specific project-level measures.</p> <p>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. The Revised Project complies with this requirement and goes beyond in requiring a higher percentage of vessel calls (quantified at 95%) to use shoreside power than the regulation requires.</p> <p>The Revised Project analysis has quantified GHG impacts for 2023 and has identified feasible mitigation measures. The Revised Project would comply with existing regulations, applicable to project activities, and would, by law, comply with future regulatory requirements, applicable to project activities, developed as part of the Scoping Plan. The Revised Project GHG emissions are expected to exceed 10,000 MT per year for every study year. Because the AB 32 targets were considered in developing the SCAQMD threshold, it was determined that the Revised 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).</p>
<p><b>AB 32 Scoping Plan Update (2014)</b> builds upon the 2008 Scoping Plan with new strategies to achieve the following AB 32 State target: Year 1990 levels by 2020.</p> <p>ARB released the 2017 Final Scoping Plan Update in November 2017.</p>	<p>The Scoping Plan includes general recommendations to reduce GHG emissions from various sources.</p>	<p>AB 32 Scoping Plan Update 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.</p>

Plan or Policy	Plan/Policy Measure	Discussion
		<p>The Scoping Plan Update 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 Strategy (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:</p> <ul style="list-style-type: none"> <li>• Accelerate the introduction and deployment of zero and near-zero emission trucks, including trucks capable of zero-emission miles.</li> <li>• Continue improving the efficiency of trucks (both engines and vehicles).</li> <li>• Support development and introduction of locomotives capable of zero emission track miles.</li> <li>• Accelerate cleanup of the existing locomotive fleet.</li> <li>• Increase near-dock rail in Oakland/Los Angeles/Long Beach.</li> <li>• Reduce GHGs and criteria pollutants from ocean-going vessels.</li> <li>• Identify efficiency improvements on all levels (equipment, sector, and system).</li> <li>• Showcase strategies and best practices.</li> </ul> <p>The Revised Project analysis has quantified GHG impacts and has identified feasible mitigation measures. The Revised Project would help to implement the objective in the Scoping Plan Update of reducing GHGs and criteria pollutants from ocean-going vessels.</p>

Plan or Policy	Plan/Policy Measure	Discussion
		<p>The Revised Project would comply with existing regulations, applicable to project activities, and would, by law, comply with future regulatory requirements, applicable to project activities, developed as part of the Scoping Plan Update.</p> <p>The Revised project GHG emissions are expected to exceed 10,000 MT per year for all study years. The Revised Project would therefore not be consistent with the State’s implementation of the AB 32 Scoping Plan Update.</p>
<p>Sustainable Freight Action Plan EO B-32-15 (2015)</p>	<p>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.</p>	<p>The California Freight Action Plan was developed in conjunction with several state agencies and includes the following recommendations:</p> <ul style="list-style-type: none"> <li>• A long-term 2050 Vision and Guiding Principles for California’s future freight transport system.</li> <li>• Targets for 2030 to guide the State toward meeting the Vision.</li> <li>• Opportunities to leverage State freight transport system investments.</li> <li>• Actions to initiate over the next five years to make progress towards the Targets and the Vision.</li> <li>• Pilot projects to achieve on-the-ground progress in the near-term.</li> <li>• Additional concepts for further exploration and development, if viable.</li> </ul> <p>There is no finding of consistency appropriate for the proposed Project because these are future goals and recommendations that are not defined clearly and a determination cannot be demonstrated at this time.</p>
<p>California’s 2017 Climate Change Scoping Plan (<b><i>Final 2017 Scoping Plan Update</i></b>)</p>	<p>The Final 2017 Scoping Plan Update includes general recommendations to reduce GHG emissions from various sources. The most relevant</p>	<p>The California Air Resources Board (CARB) 2017 Climate Change Scoping Plan Update builds upon the existing AB 32 Scoping Plan, and provides</p>

Plan or Policy	Plan/Policy Measure	Discussion
	<p>to the Revised Project are the Sustainable Freight Goals.</p>	<p>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 Final Plan Update also discusses its relation to the 2050 GHG reduction target under the Governor's Executive Order B-30-15, which is 80 to 95 percent below 1990 levels.</p> <p>The transportation sustainability guidance in the Final Plan Update notes that the state's transportation 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 Final 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 Final Plan Update identifies the transportation system, as a whole, as the largest emitter of GHG emissions in California.</p> <p>The Final Scoping Plan Update identifies the following technology-specific objectives for the freight/transportation sector but does not identify specific direct project-level measure.</p> <p>The Final 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.</p> <p>The Final 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</p>

Plan or Policy	Plan/Policy Measure	Discussion
		<p>enable the statewide 2030 GHG reduction goal.</p> <p>High-level objectives and goals set out in the Final Plan Update to reduce GHGs in the transportation sector include:</p> <ul style="list-style-type: none"> <li>• Update to the CEQA metric of transportation impacts, from level of service (LOS) to VMT, statewide.</li> <li>• Promote transportation fuel system infrastructure for electric, fuel-cell, and other emerging clean technologies.</li> <li>• Promote potential efficiency gains from automated transportation systems.</li> <li>• Continue research and development on transportation system infrastructure.</li> </ul> <p>The Final Scoping Plan Update includes general “Sustainable Freight Goals,” including:</p> <ul style="list-style-type: none"> <li>• Increase freight system efficiency of freight operators at specific facilities and along freight corridors such that more cargo can be moved with fewer emissions.</li> <li>• Accelerate use of clean vehicle and equipment technologies and fuels of freight technologies, and continued development of renewable fuels.</li> <li>• Encourage state and federal incentive programs to continue supporting zero and non-zero pilot and demonstration projects.</li> </ul> <p>The Revised Project complies with many of the 2017 Climate Change Scoping Plan Update objectives and goals described above. However, because the Revised 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</p>

Plan or Policy	Plan/Policy Measure	Discussion
		<p>the Revised 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 Update.</p>
<p><b>EO B-30-15</b> established a Statewide GHG emissions-reduction target of 40 percent below 1990 levels by 2030.</p>	<p>Established State-wide goals that are not directly binding on local agencies conducting project-level analysis.</p>	<p>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.</p> <p>The Revised Project analysis has quantified GHG impacts for 2030 and has identified feasible mitigation measures. The analysis projects that GHG emissions for all study years would exceed the 10,000 mty per year threshold.</p> <p>Similar to EO S-3-05, EO B-30-15 did not identify project-level measures. The Revised Project would comply with existing regulations, applicable to project activities, and would, by law, comply with future regulatory requirements, applicable to project activities. However, as the Revised Project would exceed the SCAQMD significance threshold under GHG-1, and since EO-S-3-05 targets were considered in developing the SCAQMD threshold, it was determined that the Revised Project would not be consistent with the State’s compliance with the GHG reduction goals established under EO B-30-15.</p>
<p><b>SB 32 (2016)</b> codified the EO B-30-15 target: 40 percent reduction below 1990 levels by 2030.</p>	<p>Established State-wide goals that are not directly binding on local agencies conducting project-level analysis.</p>	<p>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 Revised Project analysis has</p>

Plan or Policy	Plan/Policy Measure	Discussion
		<p>quantified GHG impacts for 2030 and has identified feasible mitigation measures. Similar to AB 32, SB 32 did not identify project-level measures.</p> <p>However, because the Revised 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.</p>
<p><b><i>Southern California Association of Governments (SCAG) 2012-2035 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) (2012).</i></b> Provides for development of a sustainable communities strategy in the context of the existing regional transportation planning process.</p>	<p>Not directly binding on project-level analysis, but certain elements of the Revised Project serve to forward the RTP/SCS goals.</p>	<p>SCAG developed the 2012-2035 RTP/SCS with the primary goal of increasing mobility for the region’s residents and visitors but also with an emphasis on sustainability, per SB 375.<sup>a</sup> Although SB 375 focuses on light-duty vehicle emissions, SCAG’s RTP/SCS includes additional regional strategies directed at Goods Movement.</p> <p>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.</p> <p>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</p>



Plan or Policy	Plan/Policy Measure	Discussion
		<p>reflect regional, industry-wide or port-wide strategies, but are not directly binding on 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.</p> <p>The Revised Project would comply with CAAP measures, existing regulations that are applicable to project activities, and would, by law, comply with future regulatory requirements that are suited 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.</p>
<p><b><i>The Sustainable City pLAN (2015)</i></b></p>	<p>Not directly applicable to project-level analysis, but certain elements of the Revised Project serve to forward the goals.</p>	<p>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.</p> <p>The Revised Project will continue to further these goals and aspirations but because these are future targets that are not defined clearly, it is not possible to demonstrate consistency at this time.</p>

Plan or Policy	Plan/Policy Measure	Discussion
<p><b><i>San Pedro Bay Ports 2006 Clean Air Action Plan – CAAP – (2007), CAAP Update (2010) and 2017 CAAP Update Document (2017)</i></b></p>	<p>GHG reductions are considered as co-benefits of CAAP measures.</p>	<p>Although the 2006 CAAP and 2010/2017 Updates are primarily designed to reduce criteria pollutants and air toxics, the following CAAP goals also reduce GHG emissions:</p> <p>Sustainable Freight Action Plan sets targets for the goods movement sector, 1) improving system efficiency (value of goods relative to amount of carbon) by 25 percent by 2030 2) transitioning to zero and near-zero emissions technologies by 2030</p> <p>The bulk of the CAAP 2017 Update strategies, however, are designed to significantly advance the push toward zero emissions technologies in support of the GHG reduction goals:</p> <ol style="list-style-type: none"> <li>1) Reduce GHGs from port-related sources to 40% below 1990 levels by 2030</li> <li>2) Reduce GHGs from port-related sources to 80% below 1990 levels by 2050.</li> </ol> <p>Among the strategies to achieve these goals are:</p> <ol style="list-style-type: none"> <li>a) updates to the Clean Trucks Program transitioning towards near zero and zero emissions trucks by 2035</li> <li>b) Support implementation and demonstration of zero-emissions CHE technologies.</li> </ol> <p>OGV1: Vessel Speed Reduction (VSR) Program  OGV2: Reduction of At-Berth OGV Emissions  HC1: Performance Standards for Harbor Craft.</p> <p>Of these measures, OGV1 is applicable to the Revised Project. Mitigation measure MM AQ-9 addresses CAAP measure OGV1. CAAP measure HC1 is a port-wide measure; RL1 through 3 do not apply to the Revised Project. The Revised Project is therefore</p>

Plan or Policy	Plan/Policy Measure	Discussion
<p><b>Port of Los Angeles “Actions to Reduce Greenhouse Gas Emissions by 2050” (Submitted to City of Los Angeles, 2014)</b></p>	<p>Not applicable on project-level analysis, but certain elements of the Revised Project serve to forward the goals.</p>	<p>consistent with the CAAP and CAAP Update.</p> <p>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.</p> <p>The Revised Project would continue to further these goals and aspirations, but because these are future targets that are not defined clearly, it is not possible to demonstrate consistency at this time.</p>

Notes:

- a. 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.

**Sea Level Rise**

1  
2 With respect to adaptation to climate change effects, the Rand Corporation prepared a  
3 study (Lempert, 2012) of potential SLR impacts on Port facilities that focused on four  
4 areas at different elevations and their potential exposure to SLR. The four areas studied  
5 are the low side of the container ship terminals, the upper side of the terminals,  
6 Berths 206–209, and the Alameda and Harry Bridges crossing. The study goes beyond  
7 the theoretical SLR inundation scenarios that have been generated from the upper ranges  
8 of SLR in studies conducted by the Pacific Institute and the California Sea Level Rise  
9 Task Force of the Coastal and Ocean Working Group of the California Climate Action  
10 Team (Co-CAT) in the *State of California Sea Level Rise Interim Guidance Document*  
11 (Co-CAT, 2010).

12 The Rand study takes into account the range of the SLR estimates in the Co-CAT  
13 document (up to 55 inches by 2100) and expands the range by another 12 inches to allow

1 for uncertainty related to a broad circulation shift in the Pacific Ocean resulting from  
 2 climate change later in the 21<sup>st</sup> century. The Rand study assigns probabilities to the SLR  
 3 ranges (with an approximately equal distribution of probabilities) and then determines  
 4 whether investments should or should not be made to upgrade sea armoring at the four  
 5 facility areas. Upgrades to sea armoring means the addition of physical structures  
 6 intended to protect infrastructure or shoreline against anticipated seal level rise. The  
 7 study concludes by stating that a decision to harden sea armoring at the next decision  
 8 point for upgrade (i.e., when a new project is being constructed) should be seriously  
 9 considered only for the lower lying Alameda and Harry Bridges crossing area, which is  
 10 6.13 feet above mean sea level.

11 The higher elevation areas reviewed in the study include Berths 206–209 (7.62 feet above  
 12 MSL), lower terminal (9.20 feet above MSL), and upper terminal (12.14 feet above  
 13 MSL). The Revised Project is located in the lower terminal area.

14 The Rand study also performed a detailed analysis of key variables that could affect the  
 15 decision to armor during construction. For the lower terminal area, which is where the  
 16 Project is located, the study indicates that the Port could consider upgrading costs of  
 17 approximately one percent of a project’s total when the project’s life is greater than 50  
 18 years and there is a forecast trend in increased daily storminess due to climate change (a  
 19 three percent increase in the daily sea-level anomaly). Currently, there is no scientific  
 20 consensus regarding whether daily storminess will increase or decrease in the 21<sup>st</sup> century  
 21 for the Southern California region.

22 The conclusions from the Rand study, when applied to the proposed project area,  
 23 demonstrate that additional protection from SLR are not warranted at this time given the  
 24 current state of scientific understanding of SLR and related climatic variables. As noted  
 25 above, the Rand study is consistent with state guidance because it uses the Co-CAT  
 26 document for its central range of SLR estimates.

27 **3.2.4.6 Summary of Impact Determinations**

28 Table 3.2-7 provides a summary of the impact determinations of the Revised Project  
 29 related to GHGs.

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

34 **Table 3.2-7: Summary Matrix of Impacts and Mitigation Measures for GHG**  
 35 **Associated with the Revised Project**

Environmental Impacts	Impact Determination	Mitigation Measures	Impacts after Mitigation
Impact GHG-1: The Revised Project would generate GHG emissions, either directly or indirectly that would exceed the SCAQMD 10,000 mty CO <sub>2</sub> e threshold.	Significant for all analysis years	MM GHG-1: LED Lighting	Significant and Unavoidable for all analysis years

36

1 **3.2.4.7 Mitigation Monitoring**

2 The Revised Project would result in significant GHG impacts; however, the mitigation  
 3 measures detailed below would be implemented. Lease measure LM GHG-1, although  
 4 not a mitigation measure, is included below for tracking purposes.

5

<b>IMPACT GHG-1: The Revised Project would generate GHG emissions, either directly or indirectly, that would exceed the SCAQMD 10,000 mty CO<sub>2e</sub> threshold.</b>	
<b>Mitigation Measure</b>	<b>MM GHG-1: LED Lighting.</b> All lighting within the interior of buildings on the premises and outdoor high mast terminal lighting will be replaced with LED lighting or a technology with similar energy-saving capabilities within two years after the effective date of the new lease amendment between the Tenant and the LAHD or by no later than 2023.
Timing	Tenant must complete replacement of lighting by December 31, 2023.
Methodology	LAHD shall include MM GHG-1 in the lease agreement with tenant. Tenant shall implement MM GHG-1 through its own construction contractor. LAHD shall monitor implementation of mitigation measure during operation through the tenant lease.
Responsible Parties	LAHD for lease compliance. Tenant through its own construction contractor in conjunction with LAHD.
Residual Impacts	Significant and unavoidable.
<b>Mitigation Measure</b>	<b>LM GHG-1: GHG Credit Fund.</b> 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. 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. Tenant shall have the option to either: (i) make a one-time fund contribution of \$250,000, payable upon execution of a new lease amendment, or (ii) make a payment in 2030, at the time the peak impact would occur, in an amount calculated based on the market value of carbon credits at that time, and actual GHG emissions that exceed whatever GHG threshold exists at that time as approved by the LAHD. 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.
Timing	During operations.
Methodology	LAHD shall include LM GHG-1 in the lease agreement with tenant. LAHD shall monitor implementation of lease measure during operation through the tenant lease.
Responsible Parties	LAHD, Tenant
Residual Impacts	Significant and unavoidable.

6 **3.2.5 Significant Unavoidable Impacts**

7 GHG emissions would be significant and unavoidable after mitigation for the Revised  
 8 Project for every analysis year (2012, 2014, 2023, 2030, 2036).