Section 3.6
Greenhouse Gas Emissions and Climate Change

3.6.1 Introduction

This section evaluates the greenhouse gas (GHG) emissions and climate change issues associated with the proposed Project. The GHG and climate change issues associated with the No Project and Reduced Project alternatives are presented in the Alternatives Chapter (Chapter 5). Activities from construction and operation of the proposed Project would affect emissions of greenhouse gases in the immediate Project area and the surrounding region. This section includes a description of the affected environment including a discussion of the state of climate change science and the regulatory setting, predicted impacts of the proposed Project and mitigation measures to address the impacts.

3.6.2 Environmental Setting

The site of the proposed Project is located near the Harbor District of the City of Los Angeles in the southwest coastal area of the SCAB. The SCAB consists of the nondesert portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County. The air basin covers an area of approximately 15,500 square kilometers (6,000 square miles) and is bounded on the west by the Pacific Ocean; on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains; and on the south by the San Diego County line.

3.6.2.1 Regional Climate and Meteorology

The current climate of the Project region is classified as Mediterranean, characterized by warm, rainless summers and mild, wet winters. Average annual precipitation for the Los Angeles area is highly variable and terrain-dependent, ranging from twelve inches at the ocean to about twice that in the foothills. At downtown Los Angeles, the average seasonal rainfall is 14.77 inches. The annual average high temperature for the city is 75F, while the average low is 57F (NOAA, 2011). The major influence on the regional climate is the Eastern Pacific High (a strong persistent area of high atmospheric pressure over the Pacific Ocean), topography, and the moderating effects of the Pacific Ocean. Seasonal variations in the position and strength of the High are a key factor in the weather changes in the area.

The Eastern Pacific High attains its greatest strength and most northerly position during the summer, when the High is centered west of northern California. In this location, the High effectively shelters Southern California from the effects of polar storm systems. Large-scale atmospheric subsidence associated with the High produces an elevated temperature inversion along the West Coast. The base of this subsidence inversion is

generally from 1,000 to 2,500 feet (300 to 800 meters) above mean sea level (msl) during the summer. Vertical mixing is often limited to the base of the inversion, and air pollutants are trapped in the lowest atmospheric layer (troposphere). The mountain ranges that surround the Los Angeles Basin constrain the horizontal movement of air and also inhibit the dispersion of air pollutants out of the region. These two factors, combined with the air pollution sources of over 15 million people, are responsible for the high pollutant concentrations that can occur in the SCAB. In addition, the warm temperatures and high solar radiation during the summer months promote the formation of ozone (O_3), which has its highest levels during the summer. Air pollutants include both GHGs and criteria pollutants. GHGs differ from criteria pollutants in that GHG emissions do not cause direct adverse human health effects. Rather, the direct environmental effect of GHG emissions is a result of their accumulation throughout the atmosphere (lower and upper) which results in an increase in global temperatures and storm intensity, and changing precipitation patterns. These climatic changes in turn have numerous indirect effects on the natural environment and humans.

The proximity of the Eastern Pacific High and a thermal low pressure system in the desert interior to the east produce a sea breeze regime that prevails within the Project region for most of the year, particularly during the spring and summer months. Sea breezes at the Port typically increase during the morning hours from the southerly direction and reach a peak in the afternoon as they blow from the southwest. These winds generally subside after sundown. During the warmest months of the year, however, sea breezes could persist well into the nighttime hours. Conversely, during the colder months of the year, northerly land breezes increase by sunset and into the evening hours. Sea breezes transport air pollutants away from the coast and towards the interior regions in the afternoon hours for most of the year.

During the fall and winter months, the Eastern Pacific High can combine with high pressure over the continent to produce light winds and extended inversion conditions in the region. These stagnant atmospheric conditions often result in elevated pollutant concentrations in the SCAB. Excessive buildup of high pressure in the Great Basin region can produce a “Santa Ana” condition, characterized by warm, dry, northeast winds in the basin and offshore regions. Santa Ana winds often ventilate the SCAB of air pollutants.

The Palos Verdes Hills have a major influence on wind flow in the Port. For example, during afternoon southwest sea breeze conditions, the Palos Verdes Hills often block this flow and create a zone of lighter winds in the inner Harbor area of the Port. During strong sea breezes, this flow can bend around the north side of the Hills and end up as a northwest breeze in the inner Harbor area. This topographic feature also deflects northeasterly land breezes that flow from the coastal plains to a more northerly direction through the Port.

The proposed Project site is located approximately four miles north of the ports of Los Angeles and Long Beach in the southern part of the Los Angeles Basin. The area surrounding the proposed Project site is generally flat and would not be expected to exhibit significant variations in wind patterns within relatively short distances. The dominant terrain features/water bodies that may influence wind patterns in this part of the Los Angeles Basin include the hills of the Palos Verdes Peninsula to the west and southwest, and the San Pedro Bay and shipping channels to the south of the Project site.

3.6.2.2 Greenhouse Gas Pollutants

Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs). The term GHGs includes gases that contribute to the natural greenhouse effect, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), as well as gases that are only human-made and that are emitted through the use of modern industrial products, such as hydrofluorocarbons (HFCs), chlorinated fluorocarbons (CFCs), and sulfur hexafluoride (SF6). These last three families of gases, while not naturally present in the atmosphere, have properties that also cause them to trap infrared radiation when they are present in the atmosphere. Together, these six gases comprise the major GHGs that are recognized by the Kyoto Accords (UNFCCC, 1997). There are other GHGs that are not recognized by the Kyoto Accords, due either to the smaller role that they play in climate change or the uncertainties surrounding their effects. Atmospheric water vapor is not recognized by the Kyoto Accords because there is not an obvious correlation between water vapor concentrations and specific human activities. Water vapor appears to act in a positive feedback manner; higher temperatures lead to higher water concentrations, which in turn cause more global warming (IPCC, 2001).

The effect each of these gases has on global warming is a combination of the volume of their emissions and their 100-year global warming potential (GWP). Global warming potential indicates, on a pound-for-pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of carbon dioxide. It is a unitless quantity. CH_4 and N_2O are substantially more potent than CO_2, with global warming potentials (100-year horizon) of 21 and 310, respectively. However, these natural GHGs are nowhere near as potent as sulfur hexafluoride and various HFCs and CFCs. Sulfur hexafluoride has a 100 year GWP of 23,900 and CFCs and HFCs have GWPs ranging from 140 to 11,700 (IPCC, 1995). In emissions inventories, GHG emissions are typically reported in terms of pounds (lbs) or metric tons ("tonnes," equivalent to 1000 kilograms) of carbon dioxide equivalents (CO_2e), which are calculated as the product of the mass emitted of a given GHG and its specific global warming potential. In this document, the unit tonnes is used to report GHG emissions.

The most important GHG in human-induced global warming is CO_2. While many gases have much higher global warming potentials than the naturally occurring GHGs, CO_2 is emitted in such vastly higher quantities that it accounts for 84 percent of the global warming potential of all GHGs emitted by the United States (USEPA, 2012). Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions and thus substantial increases in atmospheric CO_2 concentrations. In 2005, atmospheric CO_2 concentrations were about 379 parts per million (ppm), over 35 percent higher than the pre-industrial (defined as the year 1750) concentrations of about 280 ppm (IPCC, 2007). In addition to the sheer increase in the volume of its emissions, CO_2 is a major factor in human-induced global warming because of its lifespan in the atmosphere of 50 to 200 years.

Concentrations of the second most prominent GHG, CH_4, have also increased due to human activities such as rice production, degradation of waste in landfills, cattle farming, and natural gas mining. In 2005, atmospheric levels of CH_4 were more than double pre-industrial levels, up to 1774 parts per billion as compared to 715 parts per billion (IPCC, 2007). CH_4 has a relatively short atmospheric lifespan of only 12 years, but has a higher global warming potential than CO_2.

N_2O concentrations have increased from about 270 parts per billion in pre-industrial times to about 319 parts per billion by 2005 (IPCC, 2007). Most of this increase can be

attributed to agricultural practices (such as soil and manure management), as well as fossil-fuel combustion and the production of some acids. N_2O's 120-year atmospheric lifespan means that, in addition to its relatively large global warming potential, its influence is long-lasting, which increases its role in global warming.

Chlorinated fluorocarbons (CFCs), used often as refrigerants, their more stratospheric-ozone-friendly replacements, hydrofluorocarbons (HFCs), and fully fluorinated species, such as sulfur hexafluoride (SF_6) and tetrafluoromethane (CF_4), are present in the atmosphere in relatively small concentrations, but have extremely long life spans of 50,000 and 3,200 years each, making them potent GHGs.

GHGs differ from criteria pollutants in that GHG emissions do not cause direct adverse human health effects. Rather, the direct environmental effect of GHG emissions is the increase in global temperatures, which in turn has numerous indirect effects on the environment and humans. For example, some observed changes include shrinking glaciers, thawing permafrost, later freezing and earlier break-up of ice on rivers and lakes, a lengthened growing season, shifts in plant and animal ranges, and earlier flowering of trees (IPCC, 2001). Other, longer term environmental impacts of global warming include sea level rise, changing weather patterns with increases in the severity of storms and droughts, changes to local and regional ecosystems including the potential loss of species, and a significant reduction in winter snow pack (for example, estimates include a 30-90% reduction in snowpack in the Sierra Mountains). Current data suggests that in the next 25 years, in every season of the year, California would experience unprecedented heat, longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. More specifically, the California Climate Action Team (2010) biennial assessment on climate change impacts and adaptation options for California predicted that California could witness the following events:

- Temperature rises between 2.7-10.5F by the 2070-2100 time period;
- 11-18 inches of sea level rise by 2050 and 23 to 55 inches of rise by 2100;
- A majority of the forecasts indicate drier (by 5 percent or more) than historical average precipitation. In Southern California the amount of drying is greater, with precipitation decreases in some scenarios exceeding 15% drier;
- For agriculture, in 2050 cotton, maize, sunflower, and wheat yields decrease from 3 percent to 8 percent, while rice and tomato yields are essentially the same. By the end of the century yields of all crops except alfalfa decrease; and
- Fire risk substantially increases and estimated burned area increases of 57 percent to 169 percent by 2085;

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

A 2008 study (Geophysical Research Letters, 2008), has identified direct links between increased levels of carbon dioxide in the atmosphere and increases in human mortality. Jacobson determined the amounts of ozone and airborne particles that result from

temperature increases in carbon dioxide emissions. The effects of considering the human impact of increased carbon dioxide emissions showed two important effects:

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

Jacobson 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 the applicable regulations section of this document are directed at reducing these impacts.

The Port prepares several inventories of greenhouse gases for reporting to state and local air agencies, including The Port of Los Angeles Inventory of Air Emissions which includes a chapter on greenhouse gases, as well as annual greenhouse gas inventories to The Climate Registry (formerly the California Climate Action Registry) and the California Attorney General.

3.6.2.3 Baseline Emissions

This section discusses the baseline conditions and activities. The baseline for determining the significance of potential proposed Project impacts is 2010. The proposed Project site is generally devoted to warehousing; cargo trans-loading; container, equipment, and truck maintenance, servicing and storage; container fumigation; rail service; and access roads for the existing businesses. The proposed Project site includes the following businesses:

- ACTA Maintenance Yard
- Cal Cartage
- Fast Lane
- Flexi-Van
- L.A. Harbor Grain Terminal/Harbor Transload
- San Pedro Forklift
- Three Rivers Trucking
- Total Intermodal

Existing uses and a description of the businesses and their operations are summarized in Table 2-1. Information about on-road and off-road equipment, locomotives, facility energy consumption, and worker commute activities for each baseline facility was obtained directly from individual businesses as part of the term sheets in 2005 for the Draft EIR and verified and adjusted for 2010 as part the Recirculated Draft EIR. In addition, international cargo transported by trucks between the Port and the BNSF Hobart Yard and by rail between the BNSF Hobart Yard and the state boundary as occurring in 2010 were evaluated as part of the baseline emissions, as the majority of these truck and rail trips would be shifted to the SCIG facility under the proposed Project scenario, as described in Section 2.1. These trips were estimated based on international cargo lift counts at Hobart Yard and assumptions on the number of truck trips generated by these lifts as described in Chapter 3.10. International cargo rail trips from Hobart Yard to the state boundary were estimated by scaling the number of train trips associated with SCIG's cargo volume to the cargo volume at Hobart. Emissions within the fenceline of Hobart Yard and other BNSF facilities including the associated Sheila locomotive

maintenance yard are not included in this analysis, as described in Chapter 2. Locomotives operating between the BNSF Hobart Yard to the state boundary, drayage trucks operating at the existing businesses and between the Ports and Hobart Yard, and on-site cargo-handling equipment at the existing businesses were all major sources of baseline GHG emissions.

Baseline GHG emissions (CO_2, CH_4, and N_2O) from local sources (trucks, cargo-handling equipment and motor vehicles used for employee commutes) were based on model runs of the EMFAC2011 and OFFROAD2007 models. Additional emissions estimates were conducted for rail locomotives calling on the facilities of the existing businesses within the project site limited to the general port area only, and for specialized cargo-handling equipment, using emissions estimation guidance from the USEPA and CARB. Table 3.6-1 presents the annual baseline GHG emissions in 2010.

In addition to direct GHG emissions shown in Table 3.6-1, electricity consumption emissions were calculated for the facilities of the existing businesses and are included in Table 3.6-1. The baseline GHG emissions from electricity were based on the energy consumption of the businesses that currently occupy the proposed Project site. The businesses in some cases would be displaced and in other cases moved to alternative sites (e.g., Cal Cartage, ACTA Maintenance Yard, and Fast Lane). Some of these changes in activities and operations are part of the proposed Project.

Table 3.6-1. Baseline (2010) Annual GHG Emissions.

Source Category	Annual Emissions (metric tons/year) [a, g]			
	CO_2	CH_4	N_2O	CO_2e
Trucks On-Site [b]	2,069	0	0	2,078
Trucks Off-Site [b, c]	41,303	0	1	41,505
Employee Commute On-Site	289	0	0	291
Employee Commute Off-Site	4,962	0	0	5,000
CHE	8,634	7	0	8,777
Locomotives Off-Site [d]	37,436	3	1	37,802
Existing Business Locomotive Activities [e]	13	0	0	13
Electricity	2,383	0	0	2,394
Total – CEQA Baseline [f]	**97,089**	**11**	**2**	**97,859**

a) Emissions represent annual emissions.
b) Trucks include medium and heavy duty trucks.
c) Off-site truck emissions include trips originating from existing businesses and trips between port terminals and Hobart Yard.
d) Off-site locomotives include BNSF trains from Hobart to SCAB and SCAB to Stateline.
e) Locomotive activities from Cal Cartage and L.A. Grain Terminal; activities are local only and limited to Port boundary.
f) Emissions might not add precisely due to rounding. For more explanation, refer to the discussion in Section 3.2.4.1.
g) The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

3.6.3 Applicable Regulations

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

3.6.3.1 Federal Regulations

Federal Action on Greenhouse Gas Emissions

April 2007 Supreme Court Ruling

In *Massachusetts et al. v. Environmental Protection Agency* et al. 549 U.S. 497, 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 USEPA to regulate CO_2 emissions from new motor vehicles, should those emissions endanger the public health or welfare. The Court did not mandate that the USEPA enact regulations to reduce GHG emissions, but found that the only instances where the USEPA 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 USEPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act.

Endangerment Finding: the USEPA Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases – CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 – in the atmosphere threaten the public health and welfare of current and future generations.

Cause or Contribute Finding: the USEPA Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

The finding itself does not impose any requirements on industry or other entities. However, this action was a prerequisite to finalizing the USEPA's proposed greenhouse gas emissions standards for light-duty vehicles (USEPA, 2009).

Corporate Average Fuel Economy (CAFE) Standards

First enacted by Congress in 1975 as part of the 1975 Energy Policy Conservation Act in response to the 1973-1974 oil crises, the purpose of CAFE standards is to reduce energy consumption by increasing the fuel economy of passenger cars and light-duty trucks. The CAFE regulation requires each car manufacturer to meet a standard for the sales-weighted fuel economy for the entire fleet of vehicles sold in the U.S. in each model year. Fuel economy, expressed in miles per gallon (mpg), is defined as the average mileage traveled by an automobile per gallon of gasoline or equivalent amount of other fuel. The National Highway Traffic Safety Administration (NHTSA) of the US Department of Transportation (USDOT) administers the CAFE program, and the USEPA provides the fuel economy data. NHTSA sets fuel economy standards for passenger cars and light-duty trucks sold in the U.S. while USEPA calculates the average fuel economy for each manufacturer. In response to a *U.S. Presidential Memorandum Regarding Fuel Efficiency Standards* dated May 21, 2010, the USEPA and NHTSA are taking

coordinated steps to enable the production of a new generation of clean vehicles, through reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. In April 1, 2010, the USEPA and NHTSA issued a Final Rulemaking establishing new federal GHG and fuel economy standards for model years 2012 to 2016 passenger cars, light-duty trucks, and medium-duty passenger vehicles. These agencies are now in the process of developing a rulemaking to set standards for model years 2017 to 2025 passenger cars, light-duty trucks, and medium-duty passenger vehicles. In addition, on August 9, 2011, EPA and NHTSA finalized regulations to reduce GHG emissions and improve fuel efficiency of medium- and heavy-duty vehicles, including large pickup trucks and vans, semi-trucks, and all types and sizes of work trucks and buses. The regulations incorporate all on-road vehicles rated at a gross vehicle weight at or above 8,500 pounds, and the engines that power them. Under the regulations, fuel economy will be improved and GHG emissions will be reduced in model years 2014-2018.

In November 2011, NHTSA and EPA issued a new supplemental Notice of Intent outlining the key elements of the upcoming proposal for CAFE and GHG emission standards for model year 2017 and beyond for light duty vehicles. EPA currently intends to propose standards that would be projected to achieve a fleet-wide average CO_2 emission level of 163 grams/mile in model year 2025 (this would be equivalent, on a mpg-equivalent basis, to 54.5 mpg if all of the CO_2 emissions reductions were achieved with fuel economy technology). NHTSA currently intends to propose standards that would be projected to require, on an average industry fleet-wide basis, 40.9 mpg in model year 2021, and 49.6 mpg in model year 2025.

Energy Independence and Security Act of 2007

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

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

Additional provisions of the Energy Independence and Security Act address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

The Renewable Fuel Standard (RFS) is of some relevance to the project as the regulations require annual increases in biofuels sold – both biodiesel and bioethanol – from the years 2010-2022. By year 2022, the RFS will require at least 74 billion gallons of biofuel to be sold in the US, as compared to a current (2010) level of approximately 14.5 billion gallons. See discussion below on Renewable Fuel Standards.

Reporting Requirements

Congress passed "The Consolidated Appropriations Act of 2008" (HR 2764) in December 2007, which requires reporting of greenhouse gas (GHG) data and other relevant information from large emission sources and suppliers in the United States. The Rule is referred to as 40 CFR Part 98 - Greenhouse Gas Reporting Program (GHGRP).The stated purpose of the rule is to collect accurate and timely GHG data to inform future policy decisions. Facilities that emit 25,000 metric tons or more per year of GHGs are required to submit annual reports to USEPA. Suppliers of certain products that

result in GHG emissions if released and facilities that inject CO_2 underground for geologic sequestration are also covered.

EPA extended the deadline for reporting initial year (2010) GHG data to September 30, 2011. Second year (2011) emissions data were due on April 2, 2012, except for a number of industry sectors that were recently added to the reporting requirements. For these facilities, calendar year 2011 reports are due September 28, 2012.

Renewable Fuel Standards (RFS1 and RFS2)

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

In January 2011, the EPA established the volume requirements and associated percentage standards that will apply in calendar year 2011 for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel (RFS2). The final percentage standard sets 8 percent of renewable fuel per total volume. The rule also announced the 2011 price for cellulosic biofuel waiver credits ($1.13 per credit) and EPA's assessment of the aggregate compliance provision for domestic feedstocks. The regulation increased the volume of fuel required to be blended into transportation fuel from 12.2 billion gallons in 2009 to 74 billion gallons by 2022; this includes 16.0 billion gallons for cellulosic biofuel, at least 1 billion gallons for biomass-based diesel fuel, 21.0 billion gallons for advanced biofuel and 36.0 billion gallons for renewable fuel.

Greenhouse Gas Tailoring Rule

In January 2011, the EPA issued permitting requirements for GHG emissions subject to Prevention of Significant Deterioration (PSD) and Title V Operating Permit Programs. A determination of the Best Available Control Technology (BACT) for GHGs is a requirement established by the program in the same manner as it is done for any other PSD regulated pollutant. The Greenhouse Gas Tailoring Rule sets thresholds for GHG emissions that define when permits under the New Source Review (NSR), Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities. This rule establishes that first time new construction projects that emit GHG emissions of at least 100,000 tpy are subject to PSD, while facilities that emit at least 100,000 tpy CO2e will be subject to Title V permitting requirements. Each new source or modified emission unit subject to PSD is required to undergo a BACT review.

3.6.3.2 Regional Agreements

Western Regional Climate Action Initiative (WCI)

The Western Regional Climate Action Initiative is a partnership among seven states, including California, and four Canadian provinces that are implementing a regional, economy-wide cap-and-trade system to reduce global warming pollution. The Western Regional Climate Action Initiative intends to cap the region's electricity, industrial, and

transportation sectors with the goal of reducing the heat-trapping emissions that cause global warming to 15 percent below 2005 levels by 2020. California is working with the other states and provinces to design a regional GHG reduction program that includes a cap-and-trade approach. CARB is in the process of developing a cap-and-trade program that will eventually link California and other member states and provinces. As of June 2012, only California and Quebec are scheduled to participate in this regional initiative which will begin January 2013.

3.6.3.3 State Regulations and Agreements

California Legislation

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

Assembly Bill 32 (Statewide GHG Reductions)

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires CARB to develop and enforce regulations for the reporting and verification of statewide greenhouse gas emissions. CARB is directed to set a greenhouse gas emission limit, based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving greenhouse gas reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that statewide GHG emissions must be reduced to 1990 levels by 2020. California needs to reduce GHG emissions by approximately 16 percent below business-as-usual predictions of year 2020 GHG emissions to achieve this goal. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

On December 11, 2008, CARB adopted the AB32 Scoping Plan, which sets forth the framework for facilitating the state's goal of reducing GHG emissions to 1990 levels by 2020. On October 20, 2011, CARB adopted the final cap-and-trade regulation. As part of finalizing the regulation, CARB considered the related environmental analysis (i.e. functional equivalent document) and written responses to environmental comments. CARB also approved an adaptive management plan which will monitor progress of reductions and recommend corrective actions if progress is not as planned or there are unintended consequences in other environmental areas – e.g. concentration of local criteria pollutants.

The Scoping Plan adopted in December 2008 contained goods movement control measures relevant to the proposed project. In August 2011 the Scoping Plan was re-approved by CARB and includes the Final Supplement to the Scoping Plan Functional Equivalent Document (FED). While the final scoping plan did not include goods movement control measures, a measure for ship electrification was included.

Executive Order S-3-05 (Statewide GHG Targets)

California Executive Order S-03-05 (June 1, 2005) mandates a reduction of GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Although the 2020 target is the core of AB 32, and has been incorporated into AB 32, the 2050 target remains the goal of the Executive Order.

Low Carbon Fuel Standard (LCFS)

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, the California Air Resources Board (ARB or Board) approved for adoption the Low Carbon Fuel Standard (LCFS) regulation, which became fully effective in April 2010 and is codified at title 17, California Code of Regulations, sections 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 (CI) is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel. On December 29, 2011, the U.S. District Court for the Eastern District of California issued several rulings in the federal lawsuits challenging the LCFS.

On December 29, 2011, the U.S. District Court for the Eastern District of California issued several rulings in the federal lawsuits challenging the Low Carbon Fuel Standard (LCFS). One of the district court's rulings preliminarily enjoined the Air Resources Board (ARB) from enforcing the regulation. In January 2012, ARB appealed that decision to the Ninth Circuit Court of Appeals (Ninth Circuit), and then moved to stay the injunction pending resolution of the appeal. On April 23, 2012, the Ninth Circuit granted the ARB's motion for a stay of the injunction while it continues to consider ARB's appeal of the lower court's decision.

Senate Bill 1368 (GHG Emissions Standard for Baseload Generation)

Senate Bill SB1368 prohibits any retail seller of electricity in California from entering into a long-term financial commitment for baseload generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant. This performance standard applies to electricity generated out-of-state as well as in-state, and to publicly owned as well as investor-owned electric utilities.

The Energy Commission has designed regulations that:

- Establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs. CO_2 per megawatt-hour (MWh). This will encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of greenhouse gases;
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the Energy Commission website. This will facilitate public awareness of utility efforts to meet customer needs for energy over the long-term while meeting the State's standards for environmental impact, and;
- Establish a public process for determining the compliance of proposed investments with the EPS. This process includes the following components:
- A utility may request that the Commission determine whether or not an investment under consideration is subject to or complies with the EPS (Request for Evaluation of a Proposed Procurement)
- A utility may request that an investment be exempted from the requirement that it meet the EPS if the investment is necessary to ensure reliable service to utility customers or to avoid a threat of significant financial harm (Request for Reliability or Financial Exemption), or, if the utility is under a legal obligation to contribute a share

of a larger investment (Request for Exemption Due to Pre-existing Multi-Party Commitment).

- A utility must submit a compliance filing upon committing to an investment that is required to meet the EPS (Compliance Filing)
- Any party may request that the Energy Commission conduct a complaint or investigation proceeding to determine a utility's compliance with the regulations (Request for Compliance Investigation)

Assembly Bill 1493 (Mobile Source Reductions)

Assembly Bill (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 greenhouse gas 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 greenhouse gas emissions prior to the date of enforcement of regulations, using model year 2000 as the baseline for reduction.

In 2004, CARB applied to the USEPA for a waiver under the federal Clean Air Act to authorize implementation of these regulations. The waiver request was formally denied by the USEPA in December 2007 after California filed suit to prompt federal action. In January 2008, the State Attorney General filed a new lawsuit against the USEPA 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 USEPA to reconsider California's request for a waiver. On June 30, 2009, the USEPA granted the waiver to California for its greenhouse gas emission standards for motor vehicles. As part of this waiver, USEPA 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 greenhouse gas 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 Bills 1078 and 107 (Renewables Portfolio Standard)

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

Senate Bill 2 (Renewables Portfolio Standard)

On April 12, 2011, Governor Brown signed SB 2 which requires one-third of the state's electricity to come from renewable sources. The legislation increases California's current 20 percent renewable portfolio standard target in 2010 to a 33 percent renewable portfolio standard by December 31, 2020. Resolution 10-23 adopted by the CARB found that the proposed regulation to adopt the 33 percent renewable standard was expected to reduce GHG emissions from California's utility sector by 12 to 13 MMTCO2e per year by 2020.

Senate Bill 375 (Land Use Planning)

Senate Bill (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 proposed Project area (including the Southern California Association of Governments[1], to incorporate a "sustainable communities strategy" (SCS) in their regional transportation plans that will achieve GHG emission reduction targets set by CARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit oriented development. SB 375 will be implemented over the next several years.

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

On April 4, 2012, the Regional Council of the Southern California Association of Governments (SCAG) adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future. The RTP/SCS is the culmination of a multi-year effort involving stakeholders from across the SCAG Region. (SCAG, 2012). The 2012–2035 RTP/SCS contains a regional commitment for the broad deployment of zero- and near-zero emission transportation technologies in the 2023–2035 time frame and clear steps to move toward this objective. The report indicates that the RTP is critical for the goods movement system in the South Coast Air Basin.

Energy Conservation Building Standards

Energy Conservation Standards for new residential and commercial buildings were originally adopted by the California Energy Resources Conservation and Development Commission in June 1977 and most recently revised in 2008 (Title 24, Part 6 of the California Code of Regulations [CCR, 2008]). In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608), dated December 2006, were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally-regulated appliances and non-federally regulated appliances. While these regulations are now often seen as “business as usual,” they do exceed the standards imposed by any other state and reduce GHG emissions by reducing energy demand.

On July 17, 2008, the California Building Standards Commission adopted the nation’s first green building standards. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations) (California Building Standards Commission, 2009). Part 11 establishes voluntary standards on planning and design for sustainable site

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

development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. Some of these standards have become mandatory in the 2010 edition of the Part 11 Code.

The California Energy Commission has opened a public process and rulemaking proceeding to adopt changes to the 2013 Building Energy Efficiency Standards contained in the California Code of Regulations (CCR), Title 24, Part 6 (also known as the California Energy Code), and associated administrative regulations in Part 1 (collectively referred to here as the Standards). The proposed amended standards will be adopted in 2014. The 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent better for nonresidential construction. The Standards, which take effect on January 1, 2014, will offer builders better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses.

Senate Bill 97 (CEQA Guidelines)

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

With respect to the significance assessment, newly added CEQA Guidelines section 15064.4, subdivision (b), indicates:

- A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:
- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas 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. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The Guidelines (SB 97, 2009) also apply retroactively to any incomplete environmental impact report, negative declaration, mitigated negative declaration, or other related documents. The amendments also provide that lead agencies should consider all feasible means of mitigating greenhouse gas emissions that substantially reduce energy consumption or GHG emissions. These potential mitigation measures may include carbon sequestration. If off-site or carbon offset mitigation measure are proposed they must be part of reasonable plan of mitigation that the agency itself is committed to implementing. No threshold of significance or any specific mitigation measures are indicated.

Among other things, CNRA noted in its Public Notice for these changes that impacts of GHG emissions should be considered in the context of a cumulative impact, rather than a project impact. The Public Notice states:

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

CEQA Guidelines §15126.2(a)

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

Executive Order S-13-08

On November 14, 2008, Governor Arnold Schwarzenegger signed EO S-13-08 which called on state agencies to develop a strategy for identification and preparation for expected climate change impacts in California. The resulting *2009 California Climate Adaptation Strategy (CAS)* report was developed by the California Natural Resources Agency (CNRA) in coordination with the Climate Action Team (CAT). The report presents best available science relevant to climate impacts in California and proposes a set of recommendations for California decision makers to assess vulnerability and promote resiliency in order to reduce California's vulnerability to climate change. In addition to requiring the CAT to create a Climate Adaptation Strategy, EO-S13-08 ordered the creation of a comprehensive Sea Level Rise Assessment Report which is proposed for completion by the National Academy of Science (NAS) in 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 (OPC) 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 NAS efforts, the OPC 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 sea-level rise. The draft resolution and interim guidance document is consistent with the Ocean Protection Act (Division 26.5, Public Resource Code Section 35615(a)(1)) which specifically directs the OPC to coordinate activities of state agencies to improve the effectiveness of state efforts to protect ocean resources.

Assembly Bill 1613 (Waste Heat and Carbon Emissions Reduction Act)

AB 1613 directed the California Energy Commission, the Public Utilities Commission (CPUC), and the Air Resources Board (ARB) to implement the Waste Heat and Carbon Emissions Reduction Act. The Act is designed to encourage the development of new combined heat and power (CHP) systems in California with a generating capacity of not more than 20 megawatts. Energy Commission to adopt by January 1, 2010, guidelines establishing technical criteria for eligibility of CHP systems for programs to be developed by the CPUC and publicly owned utilities. The CPUC is also directed to establish (1) a

standard tariff for the sale of electricity to electricity corporations for delivery to the electrical grid and (2) a "pay as you save" pilot program requiring electricity corporations to finance the installation of qualifying CHP systems by nonprofit and government entities.

Section 2843 of the Act provides that the Energy Commission's guidelines require that CHP systems:

- Be designed to reduce waste energy.
- Have a minimum efficiency of 60 percent.
- Have NO_x emissions of no more than 0.07 pounds per megawatt-hour.
- Be sized to meet the eligible customer generation thermal load.
- Operate continuously in a manner that meets the expected thermal load and optimizes the efficient use of waste heat
- Be cost effective, technologically feasible, and environmentally beneficial.

Senate Bill X7 7 (Water Conservation Act of 2009)

The legislation sets an overall goal of reducing per capita urban water use by 20% by December 31, 2020. The state is required to make incremental progress towards this goal by reducing per capita water use by at least 10% by December 31, 2015. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convene, treat, and distribute the water; it also reduces emissions from wastewater treatment.

The Department of Water Resources adopted a regulation on February 16, 2011 which sets forth criteria and methods for exclusion of industrial process water from the calculation of gross water use for purposes of urban water management planning. The regulation would apply to all urban retail water suppliers required to submit an Urban Water Management Plan, as set forth in the Water Code, Division 6, Part 2.6, Sections 10617 and 10620.

Assembly Bill 1470 (Solar Hot Water and Efficiency Act of 2007)

Directed the California Energy Commission to establish a 10-year, statewide incentive program to encourage the installation of 500,000 solar water heating systems to offset natural gas usage for water and space heating. The incentives would be funded by establishing a surcharge on certain natural gas customers.

Cap and Trade Program

On October 20, 2011, the CARB adopted the final cap-and-trade regulation. The program started on January 1, 2012, with an enforceable compliance obligation beginning with the 2013 GHG emissions. The regulation includes an enforceable GHG cap that will decline over time. CARB will distribute allowances, which are tradable permits, equal to the emission allowed under the cap. On May 24, 2012 CARB considered proposed amendments to California greenhouse gas emissions cap-and-trade program and market-based compliance mechanisms to add security to the market system and help staff implement the cap-and-trade program.

3.6.3.4 Local Regulations and Agreements

Local Air Quality Management District (SCAQMD) Policies

On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for proposed Projects where the SCAQMD is the lead agency. Currently, the Board has only adopted a threshold of 10,000 tonnes CO2e emissions per year to industrial (stationary source) projects. (SCAQMD, 2011). To achieve a policy objective of capturing 90 percent of GHG emissions from new residential/commercial development projects and implement a "fair share" approach to reducing emission increases from each sector, SCAQMD staff proposed in September 2010 combining performance standards and screening thresholds. The performance standards suggested have primarily focused on energy efficiency measures beyond Title 24 Part 6, California's building energy efficiency standards, and a screening level of 3,000 tonnes CO_2e per year based on direct operational emissions. Above this screening level, project design features designed to reduce GHGs must be implemented to reduce the impact to below a level of significance. The SCAQMD staff is in an ongoing effort to develop GHG CEQA significance thresholds. The CEQA Significance Thresholds Working Group, which includes government agencies implementing CEQA and representatives from various stakeholder groups, are providing input for this effort, although have not met since September 2010. Information on the current developments of the CEQA Significance Thresholds Working Group can be found on the SCAQMD website (SCAQMD, 2010).

Memorandum of Understanding Regarding Greenhouse Gases

On December 7, 2007, the Port, the Mayor of the City of Los Angeles and the California Attorney General entered into a Memorandum of Understanding Creating a Partnership to Reduce Greenhouse Gases and Support the Port of Los Angeles Clean Air Action Plan (GHG MOU). Pursuant to the GHG MOU, the Port has committed to install a 10 Mega Watt photovoltaic solar electric system in the Port, to prepare a Greenhouse Gas inventory and to include a discussion of the effects of global warming on California and adopt feasible mitigation to reduce project GHG emissions in its EIRs.

City of Los Angeles Policies

Green LA

The City of Los Angeles released its climate action plan, "Green LA: An Action Plan to Lead the Nation in Fighting Global Warming", in May 2007 (City of Los Angeles, 2007). The Green LA plan is a voluntary program that sets a goal of reducing the City's greenhouse gas emissions to 35 percent below 1990 level by 2030. ClimateLA is the implementation framework that contains the details of the more than fifty 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;
- "greening" the Port of Los Angeles and the four airports operated by the City (including Los Angeles International Airport and LA/Ontario International Airport); and
- promoting expansion of the "green economy" throughout the City.

The LA Green Plan calls for the following Port-specific actions:

- Heavy-duty vehicles: By the end of 2011, all trucks calling at the ports will meet or exceed the U.S. Environmental Protection Agency's (USEPA) 2007 heavy-duty vehicle on-road emissions standards for \particulate matter
- Cargo-handling equipment: All yard tractors will meet at a minimum the US EPA 2007 on-road or Tier IV engine emission standards
- Railroad locomotives: For Pacific Harbor Line switch engines, use of Tier II engines and emulsified or other equivalently clean alternative diesel fuels available. Diesel-powered Class 1 locomotives entering port facilities will be 90% controlled for particulate matter and NOx.
- Complete a strategic plan for the Port of Los Angeles, including sustainable and green growth options
- Complete an economic development plan for the port, identifying opportunities to link the port's investment in green growth to new economic opportunities in the green sector.

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

Executive Directive No. 10

In July, 2007, Mayor Villaraigosa directed the Environmental Affairs Department, City Planning Department, Department of Building and Safety, General Services Department and Bureau of Engineering, in cooperation with the Housing Department, Fire Department, Department of Recreation and Parks, Department of Water and Power, Port of Los Angeles, Los Angeles World Airports (LAWA), and the Community Redevelopment Agency of Los Angeles (CRA/LA) to create and adopt a Statement of Sustainable Building Policies to guide the private sector's decision making process for planning, construction and renovation of buildings in the City. The principles were to cover the areas of sustainable design, energy and atmosphere, materials and resources, water efficiency, landscaping and transportation resources and be consistent with current tenets in local and national building codes.

Port of Los Angeles Green Building Policy

In 2007, the LAHD adopted a Green Building Policy that would require certain development projects to meet criteria established by the US Green Building Council for Leadership in Energy and Environmental Design (LEED). The policy stipulated the following for all buildings of new construction 7,500 square feet or greater:

- Buildings meeting the intention set forth by LEED New Construction (LEED NC) (i.e., office buildings) will be designed to a minimum standard of LEED NC Gold (U.S. Green Building Council 2009).
- Buildings of the typology that was not the primary focus for LEED NC (i.e., marine utilitarian buildings) will be designed to a minimum standard of LEED NC Silver (U.S. Green Building Council 2009).

All LAHD-owned existing buildings 7,500 square feet or greater will be inventoried and evaluated for their applicability to LEED Existing Building (LEED EB) standards. The operation and maintenance procedures of the building will then be used to determine the priority for certification to LEED EB standards (U.S. Green Building Council 2008). All other buildings not encompassed in the above criteria will be designed and constructed to comply or be consistent with the highest practical and applicable LEED standards or their equivalent to the extent feasible for the building's purpose. In addition to meeting LEED standards, all new Port buildings will incorporate solar power to the maximum feasible extent as well as incorporate the best available technology for energy and water efficiency.

As a project design feature, the SCIG facility is committed to achieving LEED NC Silver certification.

Port Climate Action Plan

The Green LA Plan led to the Port's development of an individual Climate Action Plan, consistent with the goals of Green LA, to examine opportunities to reduce GHG emissions from Port operations.

In accordance with this directive, the Port's Climate Action Plan developed in December 2007, covers GHG emissions related to the Port's municipal activities (such as Port buildings, and Port workforce operations). The Climate Action Plan outlines specific steps that the Port of Los Angeles Harbor Department has taken and will take on global climate change. These steps include specific actions that will be taken for energy audits, green building policies, on-site PV solar energy, green energy procurement, tree planting, water conservation, alternative fuel vehicles, increased recycling, and green procurement. The Climate Action Plan also outlines CAAP measures that have significant GHG reduction co-benefits, such as Vessel Speed Reduction (VSR) and Alternative Maritime Power (AMP).

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

OGV's, trucks and locomotives. These EI's and expanded inventories can be found on the Port's web site.[2]

In its 2011 Sustainability Report (POLA, 2011), the Port highlighted major sustainability initiatives undertaken since 2008. Port is leading the industry in many aspects of sustainability, particularly in addressing material issues of most importance to stakeholders: Health Risk Reduction, Air Quality, Climate Change, Water Quality, Habitat Protection, and Open Space and Urban Greening. In general, the Port has made significant progress in developing sustainability related programs and policies that contribute to green growth. Progress and initiatives include the accelerated replacement of older, high polluting trucks with newer cleaner trucks, accelerating cargo vessels operator's use of cleaner burning fuel when arriving and departing San Pedro Bay, provided dockage credit incentives to vessels to slow to 12 knots within 20 nautical miles of the Port, allowed ships to use shore power while at birth, approved grant funding to replace or repower 334 vehicle engines, and upgraded 16 locomotives to Tier 2 engine standards.

3.6.4 Impacts and Mitigation Measures

This section presents a discussion of the potential GHG emission impacts associated with the construction and operation of the proposed Project. Mitigation measures are also discussed in this section. Greenhouse gas emissions associated with the proposed Project were calculated according to methodologies provided in The Climate Registry General Reporting Protocol (GPR), Version 3.1 (TCR, 2008).

3.6.4.1 Methodology

GHG emissions of CO_2, CH_4, and N_2O were estimated for construction and operation of the proposed Project. In addition, the indirect emissions of GHGs were estimated from electricity use for both construction and operation of the proposed Project.

Methodologies for estimating GHG emissions are provided in The Climate Registry General Reporting Protocol. The activity data used as the inputs for the GHG emission calculations are the same activity data used in the air quality section for estimating construction emissions and operational emissions. These activity data determine the levels of air quality and GHG construction emissions from the various construction elements. The construction emissions sources include:

- off-road construction equipment,
- on-road trucks,
- general cargo ships for delivery of cranes,
- rail delivery,
- worker commute trips, and
- construction of alternate sites for some businesses (Cal Cartage, Fast Lane, and ACTA Maintenance Yard).

The activity data for operational emissions include;

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

- SCIG drayage trucks,
- railyard equipment,
- other vehicles, including refueling trucks, employee commuter vehicles and on-site service trucks,
- locomotives,
- operational emissions from businesses at alternate sites (Cal Cartage, Fast Lane, and ACTA Maintenance Yard); and
- operational emissions from displaced businesses with no relocation sites identified (see Chapter 2 for description).

The activities of these sources are discussed in more detail in the Air Quality Section 3.2. An additional emission category included in the GHG section is the indirect emissions from electricity consumption, which were calculated specifically for the proposed Project. Indirect emissions represent future operations of the proposed Project (SCIG facility) and of the businesses operating at their alternate sites. For the SCIG facility, expected electricity consumption for the facility at full build-out was provided by BNSF. For electricity consumption in the years before the full build-out, GHG emissions were scaled down by the ratio of the throughput of the facility in that year to the full build-out year. For the businesses operating at their alternate sites, electricity consumption was either identical to the baseline if the business moved to a similarly sized site or was scaled down by the ratio of the acreage of the alternate site to the acreage of the original site identified in the baseline.

The Project location was also considered in the context of projected increases in sea-level rise resulting from climate change. Currently available documentation for the Los Angeles coastline was reviewed (Pacific Institute, 2009; Co-CAT, 2010; and Lempert, 2012). The Rand work (Lempert, 2012) was performed specifically for the Port and considers a broader range of potential sea level rise scenarios (up to 30 cm higher) than the two previous studies.

3.6.4.2 Scope of Analysis and Geographic Boundaries

Under the CCAR General Reporting Protocol (version 3.1, January 2009), emissions associated with Project construction and operations would be divided into three categories:

- Scope 1: Direct emissions from sources owned or operated by the Port
- Scope 2: Indirect emissions from purchased and consumed electricity
- Scope 3: Indirect emissions from sources not owned or operated by the Port

Examples of Scope 1 sources would be those sources owned and operated by the Port such as Port vehicles and marine vessels. There are not anticipated to be any Scope 1 sources associated with this Project. CCAR does not require Scope 3 emissions to be reported because they are considered to belong to another reporting entity (i.e., whoever owns, leases, or operates the sources), and that entity would report these emissions as Scope 1 emissions in its own inventory. Virtually all SCIG trucks, line-haul locomotives, railyard equipment, and construction equipment falls under this category. As a result, when used for CEQA purposes, the CCAR definition of operational boundaries would omit a large portion of the GHG emission sources associated with the proposed Project. Therefore, the operational and geographical boundaries were determined differently from

the General Reporting Protocol to make the GHG analysis more consistent with CEQA and to avoid the omission of a significant number of mobile sources.

For the purposes of this EIR, GHG emissions were calculated for all Project-related sources (Scopes 1, 2, and 3). Because CCAR does not require reporting of Scope 3 emissions, CCAR has not developed a method for determining the operational or geographical boundaries for some Scope 3 emissions sources, such as trucks, line-haul locomotives and ships. Therefore, for those sources that travel out of California, the geographical boundaries used for the emission calculations were based on the routes as described in the Methodology Section of the Air Quality Impact Section 3.2 and were tracked to the state line as listed below.

- The average one-way truck trip distances from the SCIG facility were assumed to be as follows:
  - To West Basin – approximately 5 miles
  - To Terminal Island – approximately 4 miles
  - To Pier F, J – approximately 3 miles
- For trains, the average travel distance between the SCIG facility and the eastern border of California was estimated to be 338 miles (Los Angeles Harbor to Needles, California).
- In the case of electricity consumption, all GHG emissions were included regardless of whether they are generated by in-state or out-of-state power plants.

This approach is consistent with the CCAR goal of reporting all GHG emissions within the State of California (CCAR, 2009). This document acknowledges that GHG emissions extend beyond state borders. However, origin and destination data for out-of-state emissions over the life of the project do not exist and would be speculative on a project-specific level.

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

3.6.4.3 Impact Determination

Section 15125 of the CEQA Guidelines requires EIRs to include a description of the physical environmental conditions in the vicinity of the project that exists at the time of the NOP. These environmental conditions would normally constitute the baseline physical conditions by which the CEQA lead agency determines whether an impact is significant. For purposes of this Recirculated Draft EIR, the CEQA baseline for determining the significance of the proposed Project is 2010.

The CEQA baseline represents the setting at a fixed point in time (2010) and differs from the No Project Alternative (Alternative 1—discussed in Section 5.4) in that the No Project Alternative addresses what is likely to happen at the site over time, starting from the existing conditions. The No Project Alternative allows for growth at the proposed project site that would occur without additional approvals.

3.6.4.4 Significance Thresholds

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

- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

The Guidelines do not specify significance thresholds and left this to lead agencies to decide. CARB developed initial guidance for air districts to consider for CEQA significance thresholds in October 2008. At that time, CARB proposed a threshold of 7,000 tons per year for industrial projects, and did not provide a numerical threshold for commercial and residential projects stating it would be developed in the future.

In the SCAB, currently, the SCAQMD Board has only adopted thresholds relevant to industrial (stationary source) projects for which it is the lead agency (SCAQMD, 2011). This threshold is generally set at 10,000 metric tons CO_2eper year of GHG emissions from the proposed project. To achieve a policy objective of capturing 90 percent of GHG emissions from new residential/commercial development projects and implement a "fair share" approach to reducing emission increases from each sector, SCAQMD staff has proposed combining performance standards and screening thresholds. The performance standards suggested have primarily focused on energy efficiency measures beyond Title 24 Part 6, California's building energy efficiency standards, and a screening level of 3,000 tonnes CO_2e per year based on direct operational emissions. Above this screening level, project design features designed to reduce GHGs must be implemented to reduce the impact to below a level of significance. However, these SCAQMD thresholds apply to stationary sources (adopted) and residential and commercial developments (proposed) and not transportation sources which are the primary sources of potential impact for the proposed Project.

The *L.A. CEQA Thresholds Guid*e (City of Los Angeles, 2006) does not include recent and up to date thresholds on greenhouse gas emissions. Therefore, reliance on the Office of Planning and Research (OPR)'s revised Environmental Checklist (Appendix G) determination of significance is based on whether the project would:

GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment

GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs

The City of Los Angeles has not established such a threshold. Therefore, the Port of Los Angeles, for purposes of this proposed Project only, is utilizing the following as its CEQA threshold of significance**:**

- The proposed Project would result in a significant impact if CO_2e emissions exceed CEQA baseline emissions.

Under CEQA, baseline conditions normally include environmental conditions in the vicinity of the proposed project site, or the area affected by the proposed project, during the baseline period or in this case without the proposed project. However, to ensure a conservative description of baseline conditions and to avoid understating project impacts, this document describes baseline conditions as including only activities that occurred on the site prior to the proposed project. The impacts are therefore based on the future

operations emissions compared to the baseline scenario. In addition, the total emissions from construction represent impacts from the proposed project. In absence of further guidance, this threshold is thought to be the most conservative because any increase over baseline is designated as significant.

CEQA Guideline §15126.2(a) identifies the need to evaluate potential impacts of locating development in areas vulnerable to climate change effects: *The EIR "should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g. floodplains, coastlines, wildfire risk areas)".*

3.6.4.5 Impacts and Mitigation

Impact GHG-1: The proposed Project would result in an increase in construction-related and operation-related GHG emissions.

Table 3.6-2 presents the annual GHG emissions associated with construction of the proposed Project, and Table 3.6-3 presents the annual construction GHG emissions of the proposed Project with the overlap of business operations at the alternate sites. This table contains annual construction emissions for each project year. Emissions for each construction element were determined by totaling the daily emissions from the individual construction activities and alternate business location operational activities that overlap in the proposed construction schedule.

Table 3.6-2. Summary of Annual Construction Emissions during Construction Period-Proposed Project.

Source Category	Annual Emissions (metric tons/year) [c]			
	CO_2	CH_4	N_2O	CO_2e
Construction Year 2013				
SCIG and Alternate Business Sites Construction - on-site	11982	1	0	12109
SCIG and Alternate Business Sites Construction - off-site	6441	0	0	6537
2013 Total Annual [b]	**18423**	**1**	**1**	**18646**
Thresholds				
Significant? [a]				**Yes**
Construction Year 2014				
SCIG Site Construction - on-site	3980	0	0	4022
SCIG Site Construction - off-site	3453	0	0	3486
2014 Total Annual [b]	**7433**	**0**	**0**	**7508**
Thresholds				
Significant? [a]				**Yes**
Construction Year 2015				
SCIG Site Construction - on-site	2670	0	0	2676
SCIG Site Construction - off-site	362	0	0	365
2015 Total Annual [b]	**3032**	**0**	**0**	**3041**
Thresholds				
Significant? [a]				**Yes**

a) CEQA significance is determined by comparing the peak daily construction emissions directly to the thresholds.
b) Emissions might not add precisely due to rounding. For more explanation, refer to the discussion in Section 3.2.4.1.
c) The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Table 3.6-3. Summary of Annual Construction Emissions including Business Operations at Alternate Sites during Construction Period-Proposed Project.

Source Category	Annual Emissions (metric tons/year) [e]			
	CO_2	CH_4	N_2O	CO_2e
Construction Year 2013				
SCIG and Alternate Business Sites Construction - on-site	11982	1	0	12109
SCIG and Alternate Business Sites Construction - off-site	6441	0	0	6537
Business Operations at Existing Sites - on-site [a]	11884	5	0	12000
Business Operations at Existing Sites - off-site [a]	11438	0	0	11546
2013 Total Annual [c]	**41745**	**6**	**1**	**42193**
Thresholds				
Significant? [d]				**Yes**
Construction Year 2014				
SCIG Site Construction - on-site	3980	0	0	4022
SCIG Site Construction - off-site	3453	0	0	3486
Business Operations at Alternate Sites - on-site [b]	5092	1	0	5127
Business Operations at Alternate Sites - off-site [b]	5654	0	0	5707
2014 Total Annual [c]	**18179**	**2**	**0**	**18341**
Thresholds				
Significant? [d]				**Yes**
Construction Year 2015				
SCIG Site Construction - on-site	2670	0	0	2676
SCIG Site Construction - off-site	362	0	0	365
Business Operations at Alternate Sites - on-site [b]	5091	1	0	5124
Business Operations at Alternate Sites - off-site [b]	5646	0	0	5697
2015 Total Annual [c]	**13768**	**2**	**0**	**13862**
Thresholds				
Significant? [d]				**Yes**

a) Emissions from businesses operating at their existing sites; only businesses moving to known alternate sites are included.
b) Emissions from businesses operating at their new, alternate sites.
c) Emissions might not add precisely due to rounding. For more explanation, refer to the discussion in Section 3.2.4.1.
d) CEQA significance is determined by comparing the peak daily construction emissions directly to the thresholds.
e) The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Table 3.6-4 represents annual GHG emissions associated with operation of the proposed Project. Baseline annual emissions are compared to future annual operational emissions to determine CEQA significance for the proposed Project.

Table 3.6-4. Summary of Annual Operational Emissions - Proposed Project.

Source Category	Annual Emissions (metric tons/year) [a, f]				
	CO_2	CH_4	N_2O	HFC	CO_2e
Project Year 2016					
Locomotives On-Site	439	0	0	0	444
Locomotives Off-Site [b]	28,545	2	1	0	28,823
Trucks On-Site	2,763	0	0	0	2,780
Trucks Off-Site [b]	4,190	0	0	0	4,233
Railyard Equipment	219	0	0	0	224
TRU	5	0	0	0	16
Employee Commute On-Site	24	0	0	0	24
Employee Commute Off-Site [b]	303	0	0	0	304
Refueling Trucks On-Site	6	0	0	0	6
Refueling Trucks Off-Site [b]	27	0	0	0	27
Electricity	588	0	0	0	590
Alternate Business Location Sources					
Trucks On-Site	1,119	0	0	0	1,123
Trucks Off-Site [b]	4,579	0	0	0	4,626
CHE	3,233	1	0	0	3,258
Employee Commute On-Site	83	0	0	0	84
Employee Commute Off-Site [b]	1,019	0	0	0	1,023
Alternate Business Location Locomotive Activities	2	0	0	0	2
Electricity	653	0	0	0	656
Displaced Businesses [c]	20,310	4	0	0	20,484
Total - Project Year 2016 [d]	**68,107**	**8**	**1**	**0**	**68,727**
CEQA Impacts					
CEQA Baseline Emissions	97,089	11	2	0	97,859
Proposed Project minus CEQA Baseline	-28,982	-3	0	0	-29,132
Thresholds					**0**
Significant?					**No**
Project Year 2023					
Locomotives On-Site	601	0	0	0	607
Locomotives Off-Site [b]	42,817	3	1	0	43,235
Trucks On-Site	3,832	0	0	0	3,855
Trucks Off-Site [b]	5,560	0	0	0	5,616
Railyard Equipment	220	0	0	0	226

Source Category	Annual Emissions (metric tons/year) [a, f]				
	CO_2	CH_4	N_2O	HFC	CO_2e
TRU	7	0	0	0	22
Employee Commute On-Site	34	0	0	0	34
Employee Commute Off-Site [b]	422	0	0	0	423
Refueling Trucks On-Site	9	0	0	0	9
Refueling Trucks Off-Site [b]	40	0	0	0	40
Electricity	832	0	0	0	835
Alternate Business Location Sources					
Trucks On-Site	1,107	0	0	0	1,110
Trucks Off-Site [b]	4,492	0	0	0	4,538
CHE	3,233	1	0	0	3,256
Employee Commute On-Site	84	0	0	0	84
Employee Commute Off-Site [b]	1,002	0	0	0	1,004
Alternate Business Location Locomotive Activities	2	0	0	0	2
Electricity	653	0	0	0	656
Displaced Businesses [c]	20,262	4	0	0	20,426
Total - Project Year 2023 [d]	**85,207**	**9**	**2**	**0**	**85,979**
CEQA Impacts					
CEQA Baseline Emissions	97,089	11	2	0	97,859
Proposed Project minus CEQA Baseline	-11,882	-2	0	0	-11,880
Thresholds					**0**
Significant?					**No**
Project Year 2035					
Locomotives On-Site	1,392	0	0	0	1,406
Locomotives Off-Site [b]	114,178	9	3	0	115,294
Trucks On-Site	13,159	0	0	0	13,237
Trucks Off-Site [b]	18,597	0	1	0	18,785
Railyard Equipment	228	0	0	0	247
TRU	7	0	0	0	22
Employee Commute On-Site	115	0	0	0	115
Employee Commute Off-Site [b]	1,476	0	0	0	1,479
Refueling Trucks On-Site	25	0	0	0	25
Refueling Trucks Off-Site [b]	107	0	0	0	108
Electricity	2,858	0	0	0	2,870
Alternate Business Location Sources					
Trucks On-Site	1,107	0	0	0	1,111
Trucks Off-Site [b]	4,540	0	0	0	4,586
CHE	3,233	1	0	0	3,256

Source Category	Annual Emissions (metric tons/year) [a, f]				
	CO_2	CH_4	N_2O	HFC	CO_2e
Employee Commute On-Site	84	0	0	0	84
Employee Commute Off-Site [b]	1,027	0	0	0	1,029
Alternate Business Location Locomotive Activities	2	0	0	0	2
Electricity	653	0	0	0	656
Displaced Businesses [c]	20,120	4	0	0	20,282
Total - Project Year 2035 [d]	**182,907**	**15**	**4**	**0**	**184,595**
CEQA Impacts					
CEQA Baseline Emissions	97,089	11	2	0	97,859
Proposed Project minus CEQA Baseline	85,819	4	3	0	86,735
Thresholds					**0**
Significant?					**Yes**
Project Year 2046					
Locomotives On-Site	1,393	0	0	0	1,407
Locomotives Off-Site [b]	114,178	9	3	0	115,294
Trucks On-Site	13,176	0	0	0	13,255
Trucks Off-Site [b]	18,555	0	1	0	18,743
Railyard Equipment	228	0	0	0	247
TRU	7	0	0	0	22
Employee Commute On-Site	115	0	0	0	115
Employee Commute Off-Site [b]	1,459	0	0	0	1,462
Refueling Trucks On-Site	25	0	0	0	25
Refueling Trucks Off-Site [b]	106	0	0	0	107
Electricity	2,858	0	0	0	2,870
Alternate Business Location Sources					
Trucks On-Site	1,107	0	0	0	1,111
Trucks Off-Site [b]	4,516	0	0	0	4,562
CHE	3,233	1	0	0	3,256
Employee Commute On-Site	84	0	0	0	84
Employee Commute Off-Site [b]	1,022	0	0	0	1,024
Alternate Business Location Locomotive Activities	2	0	0	0	2
Electricity	653	0	0	0	656
Displaced Businesses [c]	20,227	4	0	0	20,389
Total - Project Year 2046 [d]	**182,944**	**15**	**4**	**0**	**184,632**
CEQA Impacts					
CEQA Baseline Emissions	97,089	11	2	0	97,859
Proposed Project minus CEQA Baseline	85,855	4	3	0	86,773

Source Category	Annual Emissions (metric tons/year) [a, f]				
	CO_2	CH_4	N_2O	HFC	CO_2e
Thresholds					**0**
Significant?					**Yes**
Project Year 2066 [e]					
Locomotives On-Site	1,393	0	0	0	1,407
Locomotives Off-Site [b]	114,178	9	3	0	115,294
Trucks On-Site	13,176	0	0	0	13,255
Trucks Off-Site [b]	18,555	0	1	0	18,743
Railyard Equipment	228	0	0	0	247
TRU	7	0	0	0	22
Employee Commute On-Site	115	0	0	0	115
Employee Commute Off-Site [b]	1,459	0	0	0	1,462
Refueling Trucks On-Site	25	0	0	0	25
Refueling Trucks Off-Site [b]	106	0	0	0	107
Electricity	2,858	0	0	0	2,870
Alternate Business Location Sources	0	0	0	0	0
Trucks On-Site	1,107	0	0	0	1,111
Trucks Off-Site [b]	4,516	0	0	0	4,562
CHE	3,233	1	0	0	3,256
Employee Commute On-Site	84	0	0	0	84
Employee Commute Off-Site [b]	1,022	0	0	0	1,024
Alternate Business Location Locomotive Activities	2	0	0	0	2
Electricity	653	0	0	0	656
Displaced Businesses [c]	20,227	4	0	0	20,389
Total - Project Year 2066 [d]	**182,944**	**15**	**4**	**0**	**184,632**
CEQA Impacts	0	0	0	0	0
CEQA Baseline Emissions	97,089	11	2	0	97,859
Proposed Project minus CEQA Baseline	85,855	4	3	0	86,773
Thresholds	**0**	**0**	**0**	0	**0**
Significant?	**0**	**0**	**0**	**0**	**Yes**

a) Emissions represent annual emissions.
b) Truck, train, and worker commute emissions include transport within the Stateline.
c) On-site emissions from businesses displaced by the Project with no known relocation sites.
d) Emissions might not precisely add due to rounding. For further explanation, refer to the discussion in Section 3.2.4.1.
e) 2066 emissions are assumed to be identical to those modeled for 2046 because the emission models used for this analysis do not model far enough for 2066.
f) The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Impact Determination – Project Emissions

The data in Tables 3.6-2 and 3.6-3 show the construction GHG emissions and the net change in annual operational GHG emissions between the Project and CEQA Baseline emissions respectively. Where there are no established significance thresholds, the Port has conservatively established that any increase is potentially significant and is treated accordingly. Therefore, significant impacts would occur for the Proposed Project construction and operation activities.

The proposed project would produce GHG operational emissions that would exceed the CEQA baseline levels when the project reaches its full capacity in 2035 and beyond. However, operational emissions would be less than the baseline GHG emissions through 2023 before the SCIG facility throughput reaches its maximum capacity. Therefore, significant impacts under CEQA would occur for the proposed Project.

Mitigation Measures - Project Emissions

The mitigation measures applied to the air quality impacts in Section 3.2 as **MM AQ-1** through **MM AQ-7** would have either negligible effects on reducing GHG emissions or could not be reasonably quantified. For example, **MM AQ-1**, Fleet Modernization of Construction Equipment could not be reasonably quantified because idling restrictions are limited to a maximum of 5 minutes when not in use but the equipment can start and stop throughout a day and the amount of total time the equipment would be running cannot be determined. **MM AQ-2,** Fleet Modernization of On-Road Trucks is designed to reduce PM_{10} and NOx emissions, but would not have a substantial impact on GHG emissions. Likewise, **MM AQ-3**, Additional Fugitive Dust Controls addresses only PM emissions and would not have an impact on GHG emissions. Finally, **MM AQ-4**,**-5**, and **-6** are directed to DPM and/or are also not quantifiable. A number of project features reduce GHG emissions, including the use of wide-span electric RMG cranes, idle reduction devices for locomotives, the SCIG administration building which will be LEED certified, and LEED certified replacement buildings constructed at the alternate sites for businesses that are greater than 7,500 square feet in size. The elements of the project were considered in the analysis above.

The following mitigation measures for the SCIG facility would reduce GHG emissions from electricity generation or fossil fuel combustion. These mitigation measures would also apply to certain businesses moving to alternative sites on property owned by POLA, both during construction and operations. Because the effectiveness of these measures cannot be established and the difficulty in determining quantitative future year GHG emissions reductions, these mitigation measures were not quantified. For the purposes of this analysis, it assumed that the businesses include California Cartage on the 10-acre site, ACTA Maintenance Yard, and Fast Lane. The measures do not apply to other displaced businesses because their activity level, timing of operation and future locations are unknown and furthermore, could occur on property beyond the City of Los Angeles or Port boundary that is under the jurisdiction of another entity. Any future relocation plans identified for displaced businesses would be subject to separate environmental review by the appropriate lead agency in accordance with CEQA.

MM GHG-1: Idling Restriction and Electrification for Construction Equipment. Construction equipment idling will be restricted to a maximum of 5 minutes when not in use. Prior to construction and at the time of contract bid specification, the availability and use of electrified construction equipment shall be considered and implemented where feasible.

MM GHG-2: Solar Panels. The Port shall require installation of solar panels on all buildings constructed on POLA property where feasible. The Port, in consultation with the Tenant, will undertake a feasibility review and will make a determination as part of the Tenant(s) final design on the solar panel requirement.

MM GHG-3: Recycling. The Tenant shall ensure a minimum of 40 percent of all waste generated during project construction is recycled and that 70 percent of all waste generated in all Tenant buildings is recycled at the start of operations and 100 percent is recycled by 2025. The goals for operational recycling are consistent with, but more ambitious, than the City of Los Angeles Bureau of Sanitation's Solid Resources Citywide Recycling Division's goal of 70 percent waste diversion by 2020 (Bureau of Sanitation, 2000) and RENEW LA's goal of 90 percent by 2025 (RENEW LA, 2005). Recycled materials shall include: (a) white and colored paper; (b) post-it notes; (c) magazines; (d) newspaper; (e) file folders; (f) all envelopes including those with plastic windows; (g) all cardboard boxes and cartons; (h) all metal and aluminum cans; (i) glass bottles and jars; and; (j) all plastic bottles.

MM GHG-4: Tree Planting. Once construction is completed at the SCIG facility, the Tenant shall plant shade trees around the main administration building and maintain all trees through the life of the lease.

MM GHG-5: Water Conservation. As part of the SCIG facility construction, the Tenant shall install a water recirculation system at potential wash racks, install low-flow devices in new buildings and low irrigation landscaping, and maintain these through the life of the lease.

MM GHG-6: Energy Efficient Light Bulbs. In addition to the SCIG facility main administration building, which would be LEED certified, all other interior buildings shall exclusively use energy efficient light bulbs (compact fluorescent (CFL), LED, or other equally efficient) for ambient lighting. The businesses on their alternate locations on Port-owned property shall also maintain and replace any Port-supplied energy efficient light bulbs. CFL and LED bulbs produce less waste heat and use substantially less electricity than incandescent light bulbs.

MM GHG-7: Energy Audit. The Tenant shall conduct a third party energy audit every 5 years and install innovative power saving technology where feasible, such as power factor correction systems and lighting power regulators. Such systems help to maximize usable electric current and eliminate wasted electricity, thereby lowering overall electricity use.

MM GHG-8: Solar Canopy on Parking Area. The Tenant shall construct a canopy or canopies over the employee parking area at the SCIG facility that shall be equipped with photovoltaic (PV) solar panels for generating on-site electrical power.

MM GHG-9: Alternative Fuel Service Trucks. The Tenant shall utilize only alternative-fuel (for example compressed natural gas (CNG), ethanol flex fuel (E85), and hydrogen fuel, as outlined CARB's Advanced Clean Cars program (CARB, 2012)) service trucks within the SCIG facility.

Residual Impacts

GHG mitigation measures GHG-1 through GHG-9 were not quantified because of the difficulty in determining quantitative future year GHG emissions reductions from these measures. Therefore, the GHG emissions of construction and operation are significant and unavoidable.

Impact GHG-2: The proposed Project would not conflict with State and local plans and policies adopted for the purpose of reducing GHG emissions.

The proposed project would result in more efficient use of fossil fuels to move goods as a result of increased use of rail versus trucking between the Ports and the SCIG facility. The project is consistent with key legislation, regulations, plans and policies described in Section 3.6.3, Applicable Regulations**.**

The ratio of locomotive fuel efficiency to truck fuel efficiency on a per-ton-mile basis ranges from 1.9 to 5.5 (Federal Railroad Administration, 2009). Increased fuel efficiency reduces GHG emissions on a per-ton-mile basis. The Project, by shifting the drayage truck trips from Hobart Yard to the SCIG facility, would increase the fuel efficiency of regional cargo movement and decrease GHG emissions. This fundamental feature of the Project is consistent with the California Air Resources Board's Scoping Plan for reducing GHG emissions from the Goods Movement sector which calls for efficiency-based GHG reductions in activities such as Port-related trucks, cargo handling equipment, and freight transport.

Regarding adaptation to climate change effects, the Rand Corporation recently completed a study (Lempert, 2012) of potential sea level rise (SLR) impacts to the Port's facilities, focusing on four areas at different elevations and their potential exposure to SLR. The four areas studied are: The low side of the container ship terminals; the upper side (includes SCIG) of the terminals; Berths 206-209; and the Alameda and Harry Bridges Crossing. The study goes beyond theoretical SLR inundation scenarios, which have been generated (and are available online[3]) from the upper ranges of SLR from the studies conducted by the Pacific Institute and in the State of California Sea Level Rise Interim Guidance Document by the Sea Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (Co-CAT).

The Rand study takes into account the ranges of the SLR estimates in the Co-CAT document (up to 55 inches by 2100) and expands the range by another 12 inches (30 cm) to allow for uncertainty in a broad circulation shift in the Pacific Ocean resulting from climate change later in the 21st century. The Rand study assigns probabilities to the SLR ranges (approximately equal distribution of probabilities) and then determines whether investments should or should not be made to upgrade sea armoring at the four facility areas. The study concludes that a decision to harden sea armoring at the next decision point for upgrade (i.e. when a new project is being constructed) should be seriously considered only for the lower lying Alameda and Harry Bridges Crossing area, which is 6.13 feet above mean sea level (MSL).

The higher elevation areas reviewed in the study include Berths 206-209 (7.62' above MSL), lower terminal (9.20' above MSL), and upper terminal (12.14' above MSL). The SCIG project is located in the upper terminal area. The Rand study also performs a detailed analysis of the key variables which will affect a decision to armor when a project is being constructed. For the upper terminal area in which the SCIG project is located, the study indicates that the Port could consider minor upgrading costs (0.1% of project total) when a project life is greater than 75 years and when there is a forecasted trend in increased daily storminess due to climate change (a 5% increase in the daily sea level

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

anomaly). At the present time, there is no scientific consensus if daily storminess will increase or decrease in the 21st century for the Southern California region.

The conclusions from the Rand study, when applied to the SCIG project area and the alternate business locations, demonstrate that additional protections for SLR are not warranted at this time, given the current state of scientific understanding of SLR and related climatic variables. As noted above, the Rand study is consistent with State guidance as it uses the Co-CAT document for its central range of SLR estimates.

Impact Determination

The proposed Project is consistent with State and local policies and plans for GHG emissions and climate change. Accordingly, there are no significant impacts resulting from inconsistencies with existing plans and policies.

3.6.4.6 Summary of Impact Determinations

Table 3.6-5 provides a summary of the impact determinations of the proposed Project related to GHG and Climate Change, as described in the detailed discussion in Sections 3.6.4.3. This table allows easy comparison of the potential impacts of the proposed Project with respect to land use resources.

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

Table 3.6-5. Summary Matrix of Impacts and Mitigation Measures for GHG Associated with the Proposed Project.

Environmental Impacts	Impact Determination	Mitigation Measures	Impacts after Mitigation
GHG-1: The proposed Project would result in an increase in construction-related and operation-related GHG emissions.	**Significant impact.**	**MM GHG-1:** Idling Restriction and Electrification for Construction Equipment. **MM GHG-2:** Solar Panels. **MM GHG-3**: Recycling. **MM GHG-4:** Tree Planting. **MM GHG-5:** Water Conservation. **MM GHG-6**: Energy Efficient Light Bulbs. **MM GHG-7**: Energy Audit. **MM GHG-8:** Solar Canopy on Parking Area. **MM GHG-9:** Alternative Fuel Service Trucks	**Significant and unavoidable.**
GHG-2: The proposed Project would not conflict with State and local plans and policies adopted for the purpose of reducing GHG emissions.	Less than significant impact.	Not applicable	Less than significant impact

3.6.4.7 Mitigation Monitoring

Table 3.6-6 presents the mitigation monitoring for GHG impacts.

Table 3.6-6. Mitigation Monitoring for GHG.

GHG-1: The proposed Project would result in an increase in construction-related and operation-related GHG emissions.	
Mitigation Measure	**MM GHG-1**: Idling Restriction and Electrification for Construction Equipment. Construction equipment idling will be restricted to a maximum of 5 minutes when not in use and when feasible, and the use of electrified construction equipment where feasible. **MM GHG-2:** Solar Panels. The Port shall require installation of solar panels on all buildings constructed on POLA property where feasible. The Port, in consultation with the Tenant, will undertake a feasibility review and will make a determination as part of the Tenants final design on the solar panel requirement. **MM GHG-3:** Recycling. The tenant shall ensure a minimum of 40 percent of all waste generated during project construction is recycled and 60 percent of all waste generated in all buildings is recycled by the facility opening year of 2016. Recycled materials shall include: (a) white and colored paper; (b) post-it notes; (c) magazines; (d) newspaper; (e) file folders; (f) all envelopes including those with plastic windows; (g) all cardboard boxes and cartons; (h) all metal and aluminum cans; (i) glass bottles and jars; and; (j) all plastic bottles. **MM GHG-4:** Tree Planting. The applicant shall plant shade trees around the main administration building and the tenant shall maintain all trees through the life of the lease. **MM GHG-5:** Water Conservation. As part of the facility construction, the applicant shall install a water recirculation system at potential wash racks, install low-flow devices in new buildings and low irrigation landscaping, and maintain these through the life of the lease. **MM GHG-6:** Energy Efficient Light Bulbs. In addition to the SCIG facility main administration building, which would be LEED certified, all other interior buildings shall exclusively use energy efficient light bulbs (compact florescent, LED, or other equally efficient) for ambient lighting. The businesses on their alternate locations on Port-owned property shall also maintain and replace any Port-supplied energy efficient light bulbs. CFL and LED bulbs produce less waste heat and use substantially less electricity than incandescent light bulbs. **MM GHG-7:** Energy Audit. The applicant shall conduct a third party energy audit every 5 years and install innovative power saving technology where feasible, such as power factor correction systems and lighting power regulators. Such systems help to maximize usable electric current and eliminate wasted electricity, thereby lowering overall electricity use. **MM GHG-8**: Solar Canopy on Parking Area. The Tenant shall construct a canopy or canopies over the employee parking area at the SCIG facility that shall be equipped with photovoltaic (PV) solar panels for generating on-site electrical power. **MM GHG-9**: Alternative Fuel Service Trucks. The Tenant shall utilize only alternative-fuel service trucks within the SCIG facility.
Timing	Prior to and during construction and throughout operation.
Methodology	The Tenant and/or its contractor(s) will be required to include **MM GHG-1** through **GHG-9** in the contract specifications for construction. LAHD will require **MM GHG-3** through **GHG-9** in the Tenant lease during operation. LAHD will monitor implementation of mitigation measures during construction and operation.
Responsible Parties	Tenant and/or its contractor(s) and LAHD.
Residual Impacts	Significant and unavoidable after mitigation for construction and operational GHG emissions.

3.6.5 Significant Unavoidable Impacts

Construction and operational GHG emissions under Impact GHG-1 would be significant and unavoidable after mitigation.