# 4.6 Greenhouse Gas Emissions

## 4.6.1 Introduction

This section analyzes the Project's potential contributions to global climate change. This section includes a description of the existing regulatory framework at the federal, state, regional and local level; an analysis of existing air quality conditions at the regional and local level; and a summary of the existing Project Site emissions. The analysis also includes an evaluation of emissions occurring from Project construction and operations.

The emissions of greenhouse gases from a single project into the atmosphere will likely not itself lead to an adverse environmental effect; rather it is the cumulative emissions of greenhouse gases from many sources and projects to the atmosphere that may result in global climate change. Nevertheless, this analysis will evaluate the Project's emissions relative to the draft significance thresholds published by the South Coast Air Quality Management District. This Section is based on information provided in a technical report prepared by ENVIRON International Corporation, November 2013 which can be found in Appendix C to this Draft Environmental Impact Report (EIR).

### 4.6.1.1 Global Climate Change

Briefly stated, global climate change (GCC) is a change in the average climatic conditions of earth, as characterized by changes in wind patterns, storms, precipitation, and temperature. The baseline by which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. Many of the recent concerns over GCC use this data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate change in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emissions projections of GHGs needed to stabilize global temperatures and climate change impacts. The IPCC predicted that the range of global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.4 to 6.4 degrees Celsius (°C).[1] Regardless of analytical methodology, global average temperature and mean sea level are expected to rise under all scenarios.

Climate models applied to California's conditions project that under different scenarios, temperatures in California are expected to increase by 3 to 10.5 degrees Fahrenheit (°F).[2] Almost all climate scenarios include a continuing trend of warming through the end of the century given the substantial amounts of greenhouse gases already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. According to the 2006 California Climate Action Team Report, the following climate change effects are predicted in California over the course of the next century.[3]

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1 Intergovernmental Panel on Climate Change, Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007.

2 California Climate Change Center, Our Changing Climate: Assessing the Risks to California, 2006.

3 California Environmental Protection Agency, Climate Action Team, Report to Governor Schwarzenegger and the California Legislature, March 2006.

- A diminishing Sierra snowpack declining by 70 to 90 percent, threatening the State's water supply.
- Increasing temperatures, as noted above, of up to approximately 10°F under the higher emission scenarios, leading to a 25 to 35 percent increase in the number of days ozone pollution level are exceeded in most urban areas.
- Coastal erosion along the length of California and seawater intrusion into the Delta from a 4- to 33-inch rise in sea level. This would exacerbate flooding in already vulnerable regions.
- Increased vulnerability of forests due to pest infestation and increased temperatures.
- Increased challenges for the State's important agriculture industry from water shortages, increasing temperatures, and saltwater intrusion into the Delta.
- Increased electricity demand, particularly in the hot summer months.

As such, temperature increases would lead to adverse environmental impacts in a wide variety of areas, including: sea level rise, reduced snowpack resulting in changes to existing water resources, increased risk of wildfires, and public health hazards associated with higher peak temperatures, heat waves, and decreased air quality.

### 4.6.1.2 Greenhouse Gases

Parts of the earth's atmosphere act as an insulating blanket, trapping sufficient solar energy to keep the global average temperature in a suitable range. The blanket is a collection of atmospheric gases called GHGs. These gases – water vapor, carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), ozone, chlorofluorocarbons (CFCs). hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride ($SF_6$) – all act as effective global insulators, reflecting back to earth visible light and infrared radiation. Human activities, such as producing electricity and driving vehicles have elevated the concentration of these gases in the atmosphere. Many scientists believe that these elevated levels, in turn, are causing the earth's temperature to rise. A warmer earth may lead to changes in rainfall patterns, much smaller polar ice caps, a rise in sea level, and a wide range of impacts on plants, wildlife, and humans.

Climate change is driven by "forcings" and "feedbacks." A feedback is "an internal climate process that amplifies or dampens the climate response to a specific forcing."[4] Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas."[5] Individual GHG species have varying GWP and atmospheric lifetimes. The carbon dioxide equivalent ($CO_2e$) – the mass emissions of an individual GHG multiplied by its GWP – is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent metric. The reference gas for GWP is carbon dioxide; carbon dioxide has a GWP of one. Compared to methane's GWP of 21,[6] methane has a greater global warming effect than carbon

[4] National Research Council of the National Academies, Radiative Forcing of Climate Change: Expanding the Concept and Addressing Uncertainties, 2005.

[5] U.S. Environmental Protection Agency, Glossary of Climate Terms, online at http://www.epa.gov/climatechange/glossary.html, accessed July 2013.

[6] Intergovernmental Panel on Climate Change (IPCC), Climate Change 1995: The Science of Climate Change. Contribution of Working Group I to the Second Assessment Report (SAR) of the Intergovernmental Panel on Climate Change, 1996.

dioxide on a molecule-per-molecule basis. **Table 4.6-1** identifies the GWP of several select GHGs.

**Table 4.6-1**

**Global Warming Potentials and Atmospheric Lifetimes of Select Greenhouse Gases**

| Gas | Atmospheric Lifetime (Years) | Global Warming Potential (100 Year Time Horizon) |
|---|---|---|
| Carbon Dioxide | 50 – 200 | 1 |
| Methane | 12 ± 3 | 21 |
| Nitrous Oxide | 120 | 310 |
| HFC-23 | 264 | 11,700 |
| HFC-134a | 14.6 | 1,300 |
| HFC-152a | 1.5 | 140 |
| PFC: Perfluromethane ($CF_4$) | 50,000 | 6,500 |
| PFC: Perfluoroethane ($C_2F_6$) | 10,000 | 9,200 |
| Sulfur Hexafluoride ($SF_6$) | 3,200 | 23,900 |

Source: Intergovernmental Panel on Climate Change, Climate Change 1995: The Science of Climate Change. Contribution of Working Group I to the Second Assessment Report (SAR) of the Intergovernmental Panel on Climate Change, 1996. [7,8]

According to a white paper on GHG emissions and GCC prepared by the Association of Environmental Professionals (AEP), total worldwide GHG emissions in 2004 were estimated to be 20,135 Tg[9] $CO_2e$, excluding emissions/removals from land use, land use change, and forestry. In 2004, GHG emissions in the U.S. were 7,074.4 Tg $CO_2e$. California is a substantial contributor of GHG, as it is the second largest contributor in the U.S. and the sixteenth largest in the world (as compared to other nations). In 2004, California produced 494 Tg $CO_2e$, which is approximately seven percent of U.S. emissions. The major source of GHG in California is transportation, contributing 41 percent of the State's total GHG emissions. Electricity generation is the second largest source, contributing 22 percent of the State's GHG emissions.

[7] GWP values have been updated in IPCC's subsequent assessment reports (e.g., Third Assessment Report [TAR], etc.). However, in accordance with international and U.S. convention to maintain the value of the carbon dioxide "currency," GHG emission inventories are calculated using the GWPs from the IPCC SAR.

[8] CARB has proposed the use of the GWPs in IPCC 2007 Fourth Assessment review for the new AB23 Scoping Plan. It has also proposed the use of 20-year horizon GWPs for short lived climate pollutants that have lifetimes ranging from a few days to a few decades. 20-year horizon GWPs are typically greater than 100 year horizon GWPs. Refer to Climate Change Scoping Plan First Update, October 2013 for further details, online at http://www.arb.ca.gov/cc/scopingplan/2013_update/discussion_draft.pdf, accessed October 2013.

[9] One Tg is equal to one million metric tonnes or approximately 2,204,600,000 pounds (lbs).

# 4.6.2 Environmental Setting

## 4.6.2.1 Regulatory Framework

The climate change regulatory setting – federal, state and local – is complex and rapidly evolving. This section identifies key legislation, executive orders, and seminal court cases related to climate change.

### 4.6.2.1.1 International and Federal Regulations and Directives

### International Governmental Panel on Climate Change

In 1988, The United Nations and the World Meteorological Organization established the IPCC to assess "the scientific, technical and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation."

### United Nations Framework Convention on Climate Change

On March 21, 1994, the U.S. joined other countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

### Kyoto Protocol

The Kyoto Protocol is a treaty made under the UNFCCC. Countries can sign the treaty to demonstrate their commitment to reduce their GHGs or engage in emissions trading. More than 160 countries, accounting for 55 percent of global emissions, are under the protocol. The U.S. symbolically signed the Protocol in 1998. However, in order for the Protocol to be formally ratified, it must be adopted by the U.S. Senate, which has not been done to date. The original GHG reduction commitments made under the Kyoto Protocol expired at the end of 2012. A second commitment period was agreed to at the Doha, Qatar, meeting held December 8, 2012, which extended the commitment period to December 31, 2020.

### Federal Action on Greenhouse Gas Emissions

In 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tonnes of GHG emissions per million dollars of gross domestic product) of the US economy by 18 percent by 2012. No binding reductions were associated with the goal. Rather, the USEPA administers a variety of voluntary programs and partnerships with GHG emitters in which the USEPA partners with industries producing and utilizing synthetic GHGs to reduce emissions of these particularly potent GHGs.

## Massachusetts et al. v. United States Environmental Protection Agency, et al.

*Massachusetts et. al. v. Environmental Protection Agency et. al.* (549 U.S. 497 [2007]) was argued before the U.S. Supreme Court on November 29, 2006, in which it was petitioned that USEPA regulate four GHGs, including $CO_2$, under Section 202(a)(1) of the Clean Air Act (CAA). The Court issued an opinion on April 2, 2007, in which it held that petitioners have standing to challenge the USEPA and that the USEPA has statutory authority to regulate emissions of GHGs from motor vehicles.

## Endangerment Finding

The USEPA subsequently published its endangerment finding for GHGs in the Federal Register,[10] which responds to this court case. The USEPA Administrator determined that six GHGs, taken in combination, endanger both the public health and welfare of current and future generations. Although the endangerment finding discusses the effects of six GHGs, it acknowledges that transportation sources only emit four of the key GHGs: $CO_2$, $CH_4$, $N_2O$, and HFCs. Further, the USEPA Administrator found that the combined emissions of these GHGs from new motor vehicles contribute to air pollution that endangers the public health and welfare under the CAA, Section 202(a).

## GHG and Fuel Efficiency Standards for Passenger Cars and Light-Duty Trucks

In April 2010, the USEPA and National Highway Traffic Safety Administration (NHTSA) finalized GHG standards for new (model year 2012 through 2016) passenger cars, light-duty trucks, and medium-duty passenger vehicles. Under these standards, $CO_2$ emission limits would decrease from 295 grams per mile (g/mi) in 2012 to 250 g/mi in 2016 for a combined fleet of cars and light trucks. If all of the necessary emission reductions were made from fuel economy improvements, then the standards would correspond to a combined fuel economy of 30.1 miles per gallon (mpg) in 2012 and 35.5 mpg in 2016. The agencies issued a joint Final Rule for a coordinated National Program for model years 2017 to 2025 light-duty vehicles on August 28, 2012, that would correspond to a combined fuel economy of 36.6 mpg in 2017 and 54.5 mpg in 2025.

## GHG and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

In October 2010, the USEPA and NHTSA announced a program to reduce GHG emissions and to improve fuel efficiency for medium- and heavy-duty vehicles (model years 2014 through 2018). These standards were signed into law on August 9, 2011. The two agencies' complementary standards form a new Heavy-Duty National Program that has the potential to reduce GHG emissions by 270 million metric tonnes and to reduce oil consumption by 530 million barrels over the life of the affected vehicles.

[10] U.S. Environmental Protection Agency, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the CAA, Federal Register 74 (15 December 2009): 66496-66546.

## Energy Independence and Security Act of 2007

In addition to setting increased fuel efficiency standards for motor vehicles, the Energy Independence and Security Act of 2007 includes other provisions:

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

## Reporting Requirements

Congress passed "The Consolidated Appropriations Act of 2008" (HR 2764) in December 2007, which requires reporting of GHG data and other relevant information from large emission sources and suppliers in the United States. The Rule is referred to as 40 Code of Federal Regulations (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 tonnes (MT) or more per year of GHGs are required to submit annual reports to USEPA.

## 4.6.2.1.2 Regional Agreements

The Western Regional Climate Action Initiative was a partnership among seven states, including California, and four Canadian provinces interested in implementing a regional, economy-wide cap and trade system to reduce global warming pollution. The Western Regional Climate Action Initiative's intent was to cap the region's electricity, industrial, and transportation sectors with the goal of reducing the heat-trapping emissions that cause global warming 15 percent below 2005 levels by 2020. However, by late 2011 all of the states had withdrawn from the WCI leaving California and four Canadian provinces. California is working with the remaining provinces to design a regional GHG reduction program that includes a cap-and-trade approach. CARB has developed a cap-and-trade program that could eventually link California and other states and provinces.

## 4.6.2.1.3 State Regulations and Directives

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.

## Title 24 Energy Standards

Although not originally intended to reduce GHG emissions, California's Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and

possible incorporation of new energy efficient technologies and methods. The latest amendments were made in April 2008 and went into effect on January 1, 2010. The premise for the standards is that energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. Therefore, increased energy efficiency in buildings results in fewer GHG emissions on a building-by-building basis.

The California Energy Commission has opened a public process and rulemaking proceeding to adopt changes to the 2013 Building Energy Efficiency Standards contained in Title 24 CCR Part 6, and associated administrative regulations in Part 1. The proposed amendments will be adopted in 2014. The 2013 Building Energy Efficiency Standards are estimated to be 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 include better windows, insulation, lighting, ventilation systems and other features that reduce energy consumption in homes and businesses.

## California Assembly Bill 1493 (AB 1493) – Pavley (and Advanced Clean Cars)

Enacted on July 22, 2002, this bill required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Regulations adopted by CARB apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce GHG emissions from the light-duty and passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030, compared to recent years. In 2011, the U.S. Department of Transportation, USEPA, and California announced a single timeframe for proposing fuel and economy standards, thereby aligning the Pavley standards with the federal standards for passenger cars and light-duty trucks.

In January 2012, ARB approved the Advanced Clean Cars Program, a new emissions-control program for model year 2017 through 2025. The program combines the control of smog, soot and GHGs with requirements for greater numbers of zero-emission vehicles. By 2025, when the rules will be fully implemented, the new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.[11]

## Executive Order S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets for all of California: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

## California Assembly Bill 32 (AB 32)

AB 32, titled The California Global Warming Solutions Act of 2006 and signed by Governor Schwarzenegger in September 2006, requires CARB to adopt regulations to require the reporting and verification of Statewide GHG emissions and to monitor and enforce compliance with the program. In general, the bill requires CARB to reduce Statewide GHG emissions to the

[11] California Air Resources Board, California Advanced Clean Cars Program, online at http://www.arb.ca.gov/msprog/consumer_info/advanced_clean_cars/consumer_acc.htm, accessed October, 2013.

equivalent of those in 1990 by 2020. CARB adopted regulations in December 2007 for mandatory GHG emissions reporting. On August 24, 2011, CARB adopted the scoping plan indicating how emission reductions will be achieved. Part of the scoping plan includes an economy-wide cap-and-trade program. The final cap-and-trade plan was approved on October 21, 2011 and went into effect on January 1, 2013. CARB is in the process of updating the scoping plan and released a draft for discussion on October 1, 2013.[12]

## California Senate Bill 375 (SB 375)

SB 375 requires CARB to set regional targets for 2020 and 2035 to reduce GHG emissions from passenger vehicles. A regional target will be developed for each of the 18 metropolitan planning organizations (MPOs) in the State; the Southern California Association of Governments (SCAG) is the MPO that has jurisdiction over the Project area. A Regional Targets Advisory Committee (RTAC) was appointed by CARB to provide recommendations to be considered and methodologies to be used in CARB's target setting process. The final RTAC report was released on January 23, 2009.

Each MPO is required to develop Sustainable Community Strategies through integrated land use and transportation planning and to demonstrate an ability to attain the proposed reduction targets by 2020 and 2035. CARB issued an eight percent per capita reduction target to the SCAG region for 2020 and a target of 13 percent by 2035. SCAG adopted the Regional Transportation Plan/Sustainable Community Strategies for the six-county Southern California region on April 4, 2012.

## Executive Order S-01-07 and the Low Carbon Fuel Standard (LCFS)

California Executive Order S-01-07 established a Statewide goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020 from 2005. The Executive Order also mandated the creation of an LCFS for transportation fuels. The LCFS requires that the life-cycle GHG emissions for the mix of fuels sold in California decline on average. Each fuel provider may meet the standard by selling fuel with lower carbon content, using previously banked credits from selling fuel that exceeded the LCFS, or purchasing credit from other fuel providers who have earned credits.[13] On December 29, 2011, U.S. District Judge Lawrence O'Neill granted an injunction to prevent CARB from implementing the LCFS because it violates a federal law on interstate commerce. CARB's motion to stay the decision was also subsequently denied on January 24, 2012 (Rocky Mountain Farmers Union v. Goldstene, E.D. Cal., No. 09-cv-02234).

## Senate Bill 97 (SB 97)

SB 97 requires the Office of Planning and Research (OPR) to prepare guidelines to submit to the California Natural Resources Agency (CNRA) regarding feasible mitigation of GHG emissions or the effects of GHG emissions as required by CEQA. The CNRA adopted amendments to the *State CEQA Guidelines* for GHG emissions on December 30, 2009. The amendments became effective on March 18, 2010. The guidelines apply retroactively to any

[12] California Air Resources Board, California Advanced Clean Cars Program, online at http://www.arb.ca.gov/msprog/consumer_info/advanced_clean_cars/consumer_acc.htm, accessed October, 2013.

[13] California Code of Regulations, Section 95480 et seq., Low Carbon Fuel Standard.

incomplete EIR, negative declaration, mitigated negative declaration, or other related document, and are reflected in this EIR.[14]

## Renewable Portfolio Standard

Senate Bill 1078 (SB 1078) (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, the Governor signed Executive Order S-14-08, which expands the State's Renewable Energy Standard (RPS) to 33 percent renewable power by 2020. On September 15, 2009, the Governor issued Executive Order S-21-0911 requiring CARB, under its AB 32 authority, to adopt regulations to meet a 33 percent RPS target by 2020. The CARB regulations would use a phased-in or tiered requirement to increase the amount of electricity from eligible renewable sources over an eight-year period beginning in 2012. CARB adopted the regulations in September 2010. In March 2011, the Legislature passed SB X1-2, which was signed into law by the Governor the following month. SB X1-2 requires utilities to procure renewable energy products equal to 33 percent of retail sales by December 31, 2020 and also establishes interim targets: 20 percent by December 31, 2013 and 25 percent by December 31, 2016. SB X1-2 also applies to publicly-owned utilities in California. According to the most recent data available from the Los Angeles Department of Water and Power (LADWP), the utility provider for the City of Los Angeles, approximately 19 percent of its electricity purchases in 2011 were from eligible renewable sources.[15]

## Office of Planning and Research Advisory on CEQA and Climate Change

In June 2008, the Office of Planning and Research published a Technical Advisory entitled CEQA and Climate Change: Addressing Climate Change Through CEQA (OPR Advisory). This guidance, which is purely advisory, proposes a three-step analysis of GHG emissions:

- Mandatory Quantification of GHG Proposed Project Emissions. The environmental impact analysis must include quantitative estimates of a proposed Project's GHG emissions from different types of air emission sources. These estimates should include both construction-phase emissions, as well as completed operational emissions, using one of a variety of available modeling tools.
- Continued Uncertainty Regarding "Significance" of Proposed Project-Specific GHG Emissions. Each EIR document should assess the significance of the proposed Project's impacts on climate change. The Office of Planning and Research Advisory recognizes uncertainty regarding what GHG impacts should be determined to be significant and encourages agencies to rely on the evolving guidance being developed in this area. According to the Office of Planning and Research Advisory, the environmental analysis should describe a "baseline" of existing (pre-proposed Project) environmental conditions, and then add proposed Project GHG emissions on to this baseline to evaluate whether impacts are significant.

[14] Senate Bill 97, August 24, 2007.
[15] Los Angeles Department of Water and Power, Power Content Label, online at https://www.ladwp.com, accessed August 2013.

- Mitigation Measures. According to the Office of Planning and Research Advisory, "all feasible" mitigation measures or proposed Project alternatives should be adopted if an impact is significant, defining feasibility in relation to scientific, technical, and economic factors. If mitigation measures cannot sufficiently reduce proposed Project impacts, the agency should adopt whatever measures are feasible and include a fact-based statement of overriding considerations explaining why additional mitigation is not feasible. The Office of Planning and Research also identifies a menu of GHG emissions mitigation measures, ranging from balanced "mixed use" master-planned project designs to construction equipment and material selection criteria and practices.

In addition to this three-step process, the Office of Planning and Research Advisory contains more general policy-level guidance. It encourages agencies to develop standard GHG emissions reduction and mitigation measures. The Office of Planning and Research Advisory directs CARB to recommend a method for setting the GHG emissions threshold of significance, including both qualitative and quantitative options.

## CAPCOA White Paper on CEQA and Climate Change

Due to increasing pressure from non-governmental organizations and the California Attorney General's office to address climate change in CEQA documents, the California Air Pollution Control Officers Association (CAPCOA) has released a white paper entitled "CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to The California Environmental Quality Act".[16] The purpose of the paper is to review various policy choices (i.e., determining significance criteria) and analytical tools for evaluating climate change impacts and to explore potential mitigation strategies for reducing GHG emissions.

### 4.6.2.1.4 Local Regulations and Directives

## South Coast Air Quality Management District (SCAQMD)

On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for projects where the SCAQMD is the lead agency. The Board has not, to date, adopted any significance thresholds for new residential/commercial development projects, but has over the last few years proposed several draft thresholds. To assist interested parties in assessing the significance of GHG emissions from new residential/commercial development projects under CEQA, SCAQMD staff has been working on developing thresholds together with the SCAQMD's GHG CEQA Significance Thresholds Working Group. To achieve its policy objective of capturing 90% of GHG emissions from new residential/commercial development projects and implementing a "fair share" approach to reducing emission increases from each new residential/commercial development sector, SCAQMD staff has proposed combining performance standards and screening thresholds.

## Green LA

In May 2007, the City of Los Angeles introduced *Green LA – An Action Plan to Lead the Nation in Fighting Global Warming*.[17] Green LA presents a framework targeted to reduce the City's

[16] California Air Pollution Control Officers Association, CEQA and Climate Change, online at http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf, accessed October 2013.

[17] City of Los Angeles, Green LA – An Action Plan to Lead the Nation in Fighting Global Warming, 2007.

GHG emissions by 35 percent below 1990 levels by 2030. The plan calls for an increase in the City's use of transportation system, reducing waste generation, greening the ports and airports, creating more parks and open spaces, and greening the economic sector. Green LA identifies objectives and actions in various focus areas, including airports and commercial development. Green LA identifies the following goals that may be relevant to the Project: 1) fully implement the Sustainability Performance Improvement Management System (SPIMS) (discussed below); 2) develop and implement policies to meet the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED®) green building rating standards in future construction; 3) improve recycling, increase use of alternative fuel sources, increase use of recycled water, increase water conservation, reduce energy needs, and reduce GHG emissions; and 4) green the city by addition of new parks and trees.

## Climate LA

In 2008, the City of Los Angeles followed up *Green LA* with an implementation plan called *Climate LA – Municipal Program Implementing the Green LA Climate Action Plan*.[18] A Departmental Action Plan for LAWA is included in Climate LA, which identifies goals to reduce $CO_2$ emissions 35 percent below 1990 levels by 2030 at LAX and the other three LAWA airports, implement sustainability practices, and develop programs to reduce the generation of waste and pollutants. Actions are specified in the areas of electrical consumption, building, and other actions.

## City of Los Angeles Green Building Code

In December 2010, the Los Angeles City Council approved Ordinance No. 181,48, which amended Chapter IX of the Los Angeles Municipal Code by adding a new Article 9 to incorporate various provisions of the 2010 CALGreen Code. The requirements of the adopted City of Los Angeles Green Building Code apply to new building construction, building renovations, and building additions within the City of Los Angeles. Specific mandatory requirements and elective measures are provided for three categories: (1) low-rise residential buildings; (2) nonresidential and high-rise buildings; and (3) additions and alterations to nonresidential and high-rise residential buildings. Many of the measures included in the Green Building Code are similar to those of the LAWA Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects, which is further described below. Key measures in the Green Building Code that apply to nonresidential buildings include, but are not limited to, the following:

- Construction—A Storm Water Pollution Prevention Plan (SWPPP) conforming to the State Storm Water NPDES Construction Permit or local ordinance, whichever is stricter, is required for project regardless of acreage disturbed;
- Construction—Construction waste reduction of at least 50 percent of construction debris;
- Construction—100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled;
- Transportation Demand—Designated parking for any combination of low emitting, fuel-efficient, and carpool/vanpool vehicles shall be provided;

[18] City of Los Angeles, Climate LA – Municipal Program Implementing the Green LA Climate Action Plan, 2008.

- Energy Conservation—Electric vehicle supply wiring for a minimum of 5 percent of the total number of parking spaces shall be provided;
- Energy Conservation—Energy conservation for new buildings must exceed California Energy Commission (CEC) requirements, based on the 2008 Energy Efficiency Standards, by 15 percent using an Alternative Calculation Method approved by the CEC;
- Energy Conservation—Each appliance provided and installed shall meet Energy Star requirements, if an Energy Star designation is applicable for that appliance;
- Renewable Energy—Future access, off-grid prewiring, and space for electrical solar system shall be provided;
- Water—A schedule of plumbing fixtures and fixture fittings shall be provided that will reduce the overall use of potable water within the building by at least 20 percent based on the maximum allowable water use per plumbing fixture and fittings as required by the California Building Standards Code.
- Wastewater—Each building shall reduce wastewater by 20 percent based on the maximum allowable water use per plumbing fixture and fittings as required by the California Building Standards Code.

## Los Angeles World Airports Sustainability Plan

LAWA defines sustainability (and measures our sustainable performance) as the Triple Bottom Line, consistent with the Global Reporting Initiative (GRI) and CEQA, which are the social, economic, and environmental impacts of our organization. All projects are subject to various sustainable requirements in the City of Los Angeles and at LAWA, including, but not limited to:

- LAGBC (Ordinance 181479);
- Low Impact Development (Ordinance 181899);
- Standard Urban Stormwater Mitigation Plan (Ordinance 173494);
- Demolition Debris Recycling Program (Ordinance 181519);
- LAX Construction & Maintenance Services – Recycling Program; and
- LAX Master Plan – Mitigation Monitoring and Reporting Program (MMRP). Highlights of the LAX Master Plan MMRP include, but are not limited to the following measures:
    - C-1: Work with LAWA to approve and coordinate staging areas, haul routes, etc.;
    - MM-AQ-2: Utilize on-site rock-crushing facility, when feasible, during construction to reuse rock/concrete and minimize off-site truck-haul trips; and
    - W-1: Maximize use of Reclaimed Water.

All building projects in the City of Los Angeles are subject to the LAGBC, which is based on CALGreen with some modifications unique to the City of Los Angeles. The LAGBC is a code-requirement that is part of Title 24, and is enforced by the Los Angeles Department of Building & Safety (LADBS).

Given that the LAGBC has replaced LEED in the LAMC, LAWA has based its new sustainable construction standards on the mandatory and voluntary tiers defined in the LAGBC. All building projects with an LADBS permit-valuation over $200,000 shall achieve LAGBC Tier 1 conformance, to be certified by LADBS during final plan check (on the issued building permit)

and validated by the LADBS inspector during final inspection (on the Certificate of Occupancy). Should a project pose unique issues/circumstances based on the scope and/or location of work, LAWA may require more prescriptive approaches to resolving issues such as energy performance, site drainage, etc.

For tenant projects, the permittee shall submit copies of all LADBS Green Building Forms to the LAWA Project Manager prior to issuance of a Notice-To-Proceed. This information may be published in our Annual Sustainability Reports in accordance with the GRI Sustainability Reporting Guidelines and Airport Operators Sector Supplement.

The proposed Project would comply with the mandatory requirements for nonresidential buildings including the mandatory requirements for Tier 1 conformance, which are provided in **Table 4.6-2**. Not all measures apply to the proposed Project, as some measures provide requirements for residential buildings or facilities not present at the proposed Project. The specific measures that are applicable to the proposed Project and would be included as parts of the design of the proposed Project are indicated in the right-hand column in **Table 4.6-2**.

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | **Mandatory** | **CALGreen Tier 1** | **Applicable to Proposed Project** |
| ***Requirements*** | | | |
| Project meets all of the requirements of Divisions 5.1 through 5.5. | **X** | | **X** (Not including measures for residential buildings or uses not associated with the Project; See below)[1] |
| ***Planning and Design*** | | | |
| **A5.106.4 Bicycle parking and changing rooms**. Comply with Sections 5.106.4.1 through 5.106.4.2; or meet local ordinance, whichever is stricter. | **X** | | **X** See A5.106.4.1 and A5.106.4.2 |
| **A5.106.4.1 Short –term bicycle parking.** If the project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack. | **X** | | **X** Applicable only if there would be visitor traffic |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | **Mandatory** | **CALGreen Tier 1** | **Applicable to Proposed Project** |
| **A5.106.4.2 Long-term bicycle parking.** For buildings with over ten tenant-occupants, provide secure bicycle parking for 5% of motorized vehicle parking capacity, with a minimum of one space. | **X** | | **X** Applicable only if there would be buildings with over ten tenant-occupants |
| **A5.106.5.1 Designated parking.** Provide designated parking, by means of permanent marking or a sign, for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as shown in Table A5.106.5.1.1 for Tier 1 at ten percent of total spaces. | | **X** | **X** |
| **A5.106.5.3.2 Electric vehicle supply wiring.** Provide a minimum number of 208/240 V 40 amp, grounded AC outlet(s), that is equal to 5% of the total number of parking spaces. | **X** | | **X** |
| **A5.106.8 Light pollution reduction.** Comply with lighting power requirements in the California Energy Code and design interior and exterior lighting such that zero direct-beam illumination leaves the building site. Meet or exceed exterior light levels and uniformity ratios for lighting zones 1-4 as defined in Chapter 10 of the following strategies: | **X** | | **X** |
| 1. Shield all exterior luminaires or use cutoff luminaries. | **X** | | **X** |
| 2. Contain interior lighting within each source. | **X** | | **X** |
| 3. Allow no more than 0.01 horizontal foot candle 15 ft beyond the site. | **X** | | **X** |
| 4. Contain all exterior lighting within property boundaries. | **X** | | **X** |
| **A5.106.10 Grading and paving.** The site shall be planned and developed to keep surface water away from buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows. | **X** | | **X** |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | **Mandatory** | **CALGreen Tier 1** | **Applicable to Proposed Project** |
| ***Energy Efficiency*** | | | |
| **A5.203.1 Energy performance.** Using an Alternative Calculation Method approved by the California Energy Commission, calculate each nonresidential building's TDV energy and $CO_2$ emissions, and compare it to the standard or "budget" building. | | | |
| **A5.203.1.1 Tier 1.** Exceed California Energy Code requirements, based on the 2008 Energy Efficiency Standards, by 15 percent | | **X** | **X** |
| **A5.203.1.3 Energy Efficiency.** Exceed California Energy Code requirements, based on the 2008 Energy Efficiency Standards, by 15 percent. | **X (6/01/11)** | | Measure included in A5.203.1.1 |
| ***Energy Systems*** | | | |
| **A.5.210.1 ENERGY STAR equipment and appliances.** All residential grade equipment and appliances provided and installed shall be ENERGY STAR labeled if ENERGY STAR is applicable to that equipment or appliance. | **X** | | **X** |
| ***Renewable Energy*** | | | |
| **A5.211.4 Prewiring for future solar.** Install conduit from the building roof or eave to a location within the building identified as suitable for future installation of a charge controller (regulator) and inverter. | **X** | | **X** |
| **A5.211.4.1 Off grid prewiring for future solar.** If battery storage is anticipated, conduit shall run to a location within the building that is stable, weather-proof, insulated against very hot and very cold weather, and isolated from occupied spaces. | **X** | | Not Applicable: Project does not include battery storage for off-grid energy |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | **Mandatory** | **CALGreen Tier 1** | **Applicable to Proposed Project** |
| ***Water Efficiency and Conservation*** | | | |
| **Indoor Water Use** | | | |
| **A5.303.1.1 Buildings in excess of 50,000 square feet.** Separate submeters shall be installed as follows: | | | |
| 1. For each individual leased, rented, or other tenant space within the building project to consume more than 100 gal/day. | **X** | | **X** |
| 2. For spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory or beauty salon or barber shop projected to consume more than 100 gal/day. | **X** | | **X** |
| **A5.303.1.2 Excess consumption.** Any building within a project or space within a building that is projected to consume more than 1,000 gal/day. | **X** | | **X** |
| **A5.303.2. 20 Percent Savings.** A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided. (Calculate savings by Water Use Worksheets.) | **X** | | **X** |
| **A5.303.2.1 Multiple showerheads serving one shower.** When single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the 20 percent reduction column contained in Table 5.303.2.3 or the shower shall be designed to only allow one showerhead to be in operation at a time. | **X** | | **X** |
| **A5.303.2.3.1 Tier 1 – 30 percent savings.** A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 30 percent shall be provided. | | **X** | **X** |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | **Mandatory** | **CALGreen Tier 1** | **Applicable to Proposed Project** |
| **A5.303.4 Wastewater reduction.** Each building shall reduce the generation of wastewater by one of the following methods: | | | |
| 1. The installation of water-conserving fixtures or | **X** | | **X** |
| 2. Utilizing non-potable water systems | **X** | | **X** |
| **A5.303.6 Plumbing fixtures and fittings.** Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the requirements listed for each type in Items listed in Table 5.303.6. | | | |
| 1. Water closets (toilets) – flushometer type | **X** | | **X** |
| 2. Water closets (toilets) – tank type | **X** | | **X** |
| 3. Urinals | **X** | | **X** |
| 4. Public lavatory faucets | **X** | | **X** |
| 5. Public metering self-closing faucets | **X** | | **X** |
| 6. Residential bathroom lavatory sink faucets | **X** | | Not Applicable: Project does not include residential faucets |
| 7. Residential kitchen faucets | **X** | | Not Applicable: Project does not include residential faucets |
| 8. Residential shower heads | **X** | | Not Applicable: Project does not include residential showers |
| 9. Single shower fixtures served by more than one showerhead | **X** | | **X** |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | **Mandatory** | **CALGreen Tier 1** | **Applicable to Proposed Project** |
| **Outdoor Water Use** | | | |
| **A5.304.1 Water budget.** A water budget shall be developed for landscape irrigation use.[1] | **X** | | **X** |
| **A5.304.2 Outdoor potable water use.** Building on sites with 1,000 square feet or more of cumulative landscaped area shall have separate meters or submeters for indoor and outdoor potable water use. | **X** | | **X** |
| **A5.304.3 Irrigation design.** Buildings on site with 1,000 square feet or more of cumulative irrigated landscaped area shall have irrigation controllers and sensors which include the following criteria, and meet manufacturer's recommendations. | | | |
| **A5.304.3.1 Irrigation controllers.** Automatic irrigation system controllers installed at the time of final inspection shall comply with the following: | | | |
| 1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change. | **X** | | **X** |
| 2. Weather –based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controllers(s). Soil moisture-based controllers are not required to have rain sensor input. | **X** | | **X** |
| **A5.304.4 Potable water reduction.** Provide water efficient landscape irrigation design that reduces by use of potable water. | | | |
| **A5.304.4.1 Tier 1** – Reduce the use of potable water to a quantity that does not exceed 60 percent of ETo times the landscape area. | | **X** | **X** |
| **A5.304.4.3 Verification of compliance.** A calculation demonstrating the applicable potable water use reduction required by this section shall be provided. | | **X** | **X** |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | Mandatory | CALGreen Tier 1 | Applicable to Proposed Project |
| ***Material Sources*** | | | |
| **A5.405.4 Recycled content, Tier 1.** Use materials, equivalent in performance to virgin materials, with post-consumer or pre-consumer recycled content value (RCV). | | X | X |
| ***Weather Resistance and Moisture Management*** | | | |
| **A5.407.1 Weather protection.** Provide a weather-resistant exterior wall and foundation envelope as required by Los Angeles Building Code Section 1403.2 and California Energy Code Section 150, manufacturer's installation instructions, or local ordinance, whichever is more stringent.[1] | X | | X |
| **A5.407.2 Moisture control.** Employ moisture control measures by the following methods: | | | |
| **A5.407.2.1 Sprinklers.** Prevent irrigation spray on structures. | X | | X |
| **A5.407.2.2 Entries and openings.** Design exterior entries and openings to prevent water intrusion into buildings. | X | | X |
| ***Construction Waste Reduction, Disposal and Recycling*** | | | |
| **A5.408.1 Construction waste diversion**. Comply with Section 66.32 of the LAMC. | X | | X |
| **A5.408.3.1** Enhanced construction waste reduction. Divert to recycle or salvage non-hazardous construction and demolition debris generated at the site in compliance with Tier 1 – at least 65 percent reduction. | | X | X |
| **A5.408.4 Excavated soil and land clearing debris.** 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. | X | | X |
| ***Building Maintenance and Operation*** | | | |
| **A5.410.1 Recycling by occupants**. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling.[1] | X | | X |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | Mandatory | CALGreen Tier 1 | Applicable to Proposed Project |
| **A5.410.2 Commissioning.** For new buildings 10,000 square feet and over, building commissioning for all building systems covered by T24, Part 6, process systems, and renewable energy systems shall be included in the design and construction processes of the building project. Commissioning requirements shall include as a minimum items listed in 5.410.2. | X | | X |
| **A5.410.2.1 Owner's Project Requirements (OPR).** Documented before the design phase of the project begins the OPR shall include items listed in 5.410.4. | X | | X |
| **A5.410.2.2 Basis of Design (BOD).** A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project and shall include as a minimum items listed in 5.410.2.3. | X | | X |
| **A5.410.2.3 Commissioning plan.** A commissioning plan describing how the project will be commissioned shall be started during the design phase of the building project and shall include as a minimum items listed in 5.410.2.3. | X | | X |
| **A5.410.2.4 Functional performance testing** shall demonstrate the correct installation and operation of each component system, and system-to-system interface in accordance with the approved plans and specifications. | X | | X |
| **A5.410.2.5 Post construction documentation and training.** A systems manual and systems operations training are required. | X | | X |
| **A5.410.2.5.1 Systems manual.** The systems manual shall be delivered to the building owner and facilities operator and shall include the items listed in 5.410.2.5.1 | X | | X |
| **A5.410.2.5.2 Systems operations training.** The training of the appropriate maintenance staff for each equipment type and/or system shall include the items listed in 5.410.2.5.1. | X | | X |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | **Mandatory** | **CALGreen Tier 1** | **Applicable to Proposed Project** |
| **A5.410.2.6 Commissioning report.** A complete report of commissioning process activities undertaken through the design, construction and post-construction phases of the building project shall be completed and provided to the owner or representative. | **X** | | **X** |
| **A5.410.4 Testing, adjusting and balancing.** Testing and adjusting of systems shall be required for buildings less than 10,000 square feet. | | | |
| **A5.410.4.2 Systems.** Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include at a minimum, as applicable to the project, the systems listed in 5.410.3.2. | **X** | | **X** |
| **A5.410.4.3 Procedures.** Perform testing and adjusting in accordance with industry best practices and applicable national standards on each system. | **X** | | **X** |
| **A5.410.4.3.1 HVAC balancing.** Before a new space-conditioning system serving a building or space is operated for normal use, the system should be balanced in accordance with the procedures defined by national standards listed in 5.410.3.3.1. | **X** | | **X** |
| **A5.410.4.4 Reporting.** After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services. | **X** | | **X** |
| **A5.410.4.5 Operation and maintenance manual.** Provide the building owner with detailed operating and maintenance instructions and copies of guaranties/warranties for each system prior to final inspection. | **X** | | **X** |
| **A5.410.4.5.1 Inspections and reports.** Include a copy of all inspection verifications and reports required by the Department. | **X** | | **X** |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | Mandatory | CALGreen Tier 1 | Applicable to Proposed Project |
| ***Fireplaces*** | | | |
| **A5.503.1 Fireplaces.** Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150. | **X** | | **X** |
| **A5.503.1.1 Woodstoves**. Woodstove shall comply with US EPA Phase II emission limits. | **X** | | Not Applicable: Project does not include woodstoves |
| ***Pollutant Control*** | | | |
| **A5.504.3 Covering of duct openings and protection of mechanical equipment during construction.** At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the Department to reduce the amount of dust or debris which may collect in the system. | **X** | | **X** |
| **A5.504.4 Finish material pollutant control.** Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.4. | | | |
| **A5.504.4.1 Adhesives, sealants, caulks.** Adhesives and sealants used on the project shall meet the requirements of the following standards. | | | |
| 1. Adhesives, adhesive bonding primers, adhesive primers sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. | **X** | | **X** |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | Mandatory | CALGreen Tier 1 | Applicable to Proposed Project |
| 2. Aerosol adhesives, and smaller unit sizes of adhesive and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with Statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, or California Code of Regulations, Title 17, commencing with Section 94507. | X | | X |
| **A5.504.4.3 Paints and coatings.** Architectural paints and coatings shall comply with Table 5.504.4.3 unless more stringent local limits apply. | X | | X |
| **A5.504.4.3.1 Aerosol Paints and Coatings.** Aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC in section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances (CCR, Title 24, Section 94520 *et seq*). | X | | X |
| **A5.504.4.3.2 Verification.** Verification of compliance with this section shall be provided at the request of the Department. | X | | X |
| **A5.504.4.4 Carpet systems.** All carpet installed in the building interior shall meet the testing and product requirements of one of the standards listed in 5.504.4.4. | X | | X |
| **A5.504.4.4.1 Carpet cushion.** All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program. | X | | X |
| **A5.504.4.4.2 Carpet adhesive.** All carpet adhesive shall meet the requirements of Table 804.4.1. | X | | X |
| **A5.504.4.5 Composite wood products**. Hardwood plywood, particleboard, and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 5.504.4. | X | | X |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | **Mandatory** | **CALGreen Tier 1** | **Applicable to Proposed Project** |
| **A5.504.4.5.2 Documentation.** Verification of compliance with this section shall be provided as requested by the Department. Documentation shall include at least one of the following. | **X** | | **X** |
| 1. Product certification and specifications | **X** | | **X** |
| 2. Chain of custody certifications | **X** | | **X** |
| 3. Other methods acceptable to the Department | **X** | | **X** |
| **A5.504.4.6 Resilient flooring systems.** Comply with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its Low-emitting Materials List (or Product Registry) or certified under the FloorScore program of the Resilient Floor Covering Institute. | **X** | | **X** |
| **A5.504.4.6.1 Verification of compliance**. Documentation shall be provided verifying that resilient flooring materials meet pollutant emission limits. | **X** | | **X** |
| **A5.504.4.7 Resilient flooring systems Tier 1.** For 80 percent of floor area receiving resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its Low-emitting Materials List or certified under the FloorScore program of the Resilient Floor Covering Institute. | | **X** | **X** |
| **A5.504.4.4.7.2 Verification of compliance.** Documentation shall be provided verifying that resilient flooring materials meet pollutant emission limits. | | **X** | **X** |
| **A5.504.4.8 Thermal Insulation, Tier 1.** Comply with Chapter 12-13 in Title 24, Part 12 and with the VOC-emission limits defined in 2009 CHPS criteria listed on its Low-emitting Materials List. | | **X** | **X** |
| **A5.504.4.8.2 Verification of compliance.** Documentation shall be provided verifying that thermal insulation materials meet pollutant emission limits. | | **X** | **X** |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | Mandatory | CALGreen Tier 1 | Applicable to Proposed Project |
| **A5.504.5 Hazardous particulates and chemical pollutants.** Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas. | | | |
| **A5.504.5.3 Filters.** In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a MERV of 8. | X | | X |
| ***Indoor Moisture and Radon Control*** | | | |
| **A5.505.1 Indoor moisture control.** Buildings shall meet or exceed the provisions of Los Angeles Building Code, Sections 1203 and Chapter 14.[2] | X | | X |
| ***Air Quality and Exhaust*** | | | |
| **A5.506.1 Outside air delivery.** For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 of the California Energy Code, CCR, Title 24, Pat 6 and Chapter 4 of CCR, Title 8, or the applicable local code, and Division 1, whichever is more stringent.[2] | X | | X |
| **A5.506.2 Carbon dioxide ($CO_2$) monitoring.** For buildings equipped with demand control ventilation, $CO_2$ sensors and ventilation controls shall be specified and installed in accordance with the requirements of the latest edition of the California Energy Code, CCR, Title 24, Part 6, Section 121(c).[2] | X | | X |
| ***Outdoor Air Quality*** | | | |
| **A5.508.1 Ozone depletion and global warming reductions.** Installations of HVAC, refrigeration, and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2. | | | |
| **A5.508.1.1 CFCs.** Install HVAC/refrigeration equipment that does not contain CFCs.[2] | X | | X |

**Table 4.6-2**

**City of Los Angeles Green Building Code Tier 1 Requirements for Newly-Constructed Nonresidential Buildings**

| Checklist for the City of Los Angeles | Measures | | |
|---|---|---|---|
| | **Mandatory** | **CALGreen Tier 1** | **Applicable to Proposed Project** |
| **A5.508.1.2 Halons.** Install fire suppression equipment that does not contain Halons.[2] | **X** | | **X** |

Note:

[1] Not all measures are applicable to the proposed Project, as some measures provide requirements for residential buildings or facilities not present at the proposed Project.

[2] These measures are currently required by statute or in regulation.

Source: City of Los Angeles, Los Angeles Green Building Code, Article 9 of Chapter IX of the LAMC, online at http://ladbs.org/LADBSWeb/LADBS_Forms/Publications/LAGreenBuildingCodeOrdinance.pdf, 2010.

## 4.6.2.2 Existing Greenhouse Gas Setting

The Project site is composed of 13 Areas totaling approximately 340 acres of land. In general, the site contains no major structures, except for the existing animal quarantine facility, airport support uses, fire station, golf course, and child development center. In many areas, access is restricted by a chain-link fence. Street pavement from former streets remains, and the site contains some vegetation, including shrubs, trees, and grasses. Westchester Parkway runs from east to west through several Areas. The Project Areas are grouped below into the LAX Northside Campus District, located west of Lincoln Boulevard, the LAX Northside Center District, located east of Lincoln Boulevard, and the LAX Northside Airport Support District, located south of Westchester Parkway. An estimate of air emissions from existing operations is shown in **Table 4.6-3**.

**Table 4.6-3**

**Exiting Conditions Emissions Summary**

| Category[1] | $CO_2e$ Emissions[2] MT/yr |
|---|---|
| Area | 0 |
| Energy Use | 493 |
| Water Use | 731 |
| Waste Disposed | 65 |
| Mobile Sources | 1,651 |
| **Total** | **2,941** |

Notes:
1 As estimated using CalEEMod™
2 Emissions estimated using CalEEMod™ or methodologies described in the text. CO2e included $CO_2$, $CH_4$ and $N_2O$ emissions, weighted by their respective global warming potentials.

# 4.6.3 Impact Analysis

## 4.6.3.1 Methodology

Guidance documents, such as The Climate Registry *General Reporting Protocol* (version 2.0, March 2013), the joint California Air Resources Board (CARB), California Climate Action Registry (CCAR), and International Council for Local Environmental Initiatives (ICLEI) Local Government Operations Protocol (LGOP) (version 1.1, May 2010), and the Association of Environmental Professionals (AEP) Community-wide GHG Emissions Protocol, propose generally consistent methodologies for preparing GHG inventories. However, these methodologies have been developed for varying purposes and not specifically for CEQA. Similar to these guidance documents, this analysis addresses both direct and indirect GHG emissions, which are defined as follows:

- Direct Emissions: Direct sources of GHG emissions from the proposed Project include the consumption of natural gas for operations, including heating/cooling; worker, and vendor car/truck trips; construction and operation equipment; and landscape activities.
- Indirect Emissions: Indirect sources of GHG emissions related to the proposed Project include the consumption of purchased electricity, natural gas, and water usage and the generation of solid waste and wastewater.

CARB believes that consideration of so-called indirect emissions provides a more complete picture of the GHG footprint of a facility: “As facilities consider changes that would affect their emissions – addition of a cogeneration unit to boost overall efficiency even as it increases direct emissions, for example – the relative impact on total (direct plus indirect) emissions by the facility should be monitored. Annually reported indirect energy usage also aids the conservation awareness of the facility and provides information” to CARB to be considered for future

strategies by the industrial sector.[19] For these reasons, CARB has proposed requiring the calculation of direct and indirect GHG emissions as part of the AB 32 reporting requirements. Additionally, the California Office of Planning and Research (OPR) directs lead agencies to "make a good-faith effort, based on available information, to calculate, model, or estimate…GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities."[20] Therefore, direct and indirect emissions have been calculated for the proposed Project.

In estimating the GHG emissions of an individual business or facility, the GHG Protocol Corporate Accounting and Reporting Standard, developed by the World Business Council for Sustainable Development and World Resources Institute,[21] (GHG Protocol) provides standards and guidance for companies and other organizations preparing a GHG emissions inventory. The GHG Protocol provides the accounting framework for nearly every GHG standard and program in the world from the International Standards Organization to the EU Emissions Trading Scheme to the CCAR, as well as hundreds of GHG inventories prepared by individual companies.

The GHG Protocol divides GHG emissions into three source types or "scopes," ranging from GHGs produced directly by the business to more indirect sources of GHG emissions, such as employee travel and commuting. Direct and indirect emissions can be generally separated into three broad scopes as follows:

- Scope 1. All direct GHG emissions.
- Scope 2. Indirect GHG emissions from consumption of purchased electricity, heat, or steam (i.e., GHG emissions generated at the power plant that provides electricity at the demand of the site/facility).
- Scope 3. Other indirect (optional) GHG emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g., transmission and distribution losses) not covered in Scope 2, outsourced activities, waste disposal, and construction.

As relates to the proposed Project, direct or Scope 1, GHG emissions would include those from building maintenance operations like landscaping equipment. Scope 2 emissions would include those from the use of electricity and natural gas. Scope 3 emissions would include emissions from employee commutes, the disposal and decomposition of waste generated by the operation and construction of the proposed Project, construction activities, water consumption and wastewater treatment.

GHG emissions associated with the proposed Project were calculated using the California Emission Estimator Model version 2011.1.1 (CalEEMod).[22,23] CalEEMod is a statewide program

[19] California Air Resources Board (ARB), 2007a. Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (Assembly Bill 32), Planning and Technical Support Division Emission Inventory Branch, October 19, 2007.

[20] Office of Planning and Research (OPR), Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review, June 2008, p. 5, online at http://opr.ca.gov/docs/june08-ceqa.pdf, accessed April 2013.

[21] World Business Council for Sustainable Development and World Resources Institute, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition, April 2004, online at http://www.ghgprotocol.org/files/ghgp/public/ghg-protocol-revised.pdf.

[22] South Coast Air Quality Management District, California Emissions Estimator Model. Online at http://www.caleemod.com/, accessed December 2011.

designed to calculate both criteria and GHG emissions from development projects in California. This model was developed under the auspices of the SCAQMD and received input from other California air districts, and is currently supported by several lead agencies for use in quantifying the emissions associated with development projects undergoing environmental review. CalEEMod utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. These models and default estimates use sources such as the United States Environmental Protection Agency (USEPA) AP-42 emission factors[24], California Air Resources Board's (CARB's) on-road and off-road equipment emission models such as the EMission FACtor model (EMFAC2007) and the off-road Emissions Inventory Program model (OFFROAD2007), and studies commissioned by California agencies such as the California Energy Commission (CEC) and CalRecycle.

#### 4.6.3.1.1 Construction

Construction is expected to occur over a six and a half year period from January 1, 2015 to July 1, 2022. This construction period was split into several phases based on building type and construction activity type. Project construction assumptions include equipment mix and on-road trip data for each construction phase (see Appendix C for details).[25] The primary sources of construction emissions for which GHG emissions were estimated include:

- Off-road construction equipment
- On-road trucks (vendor and hauling trips)
- Construction worker commute vehicles

Construction emission estimates were developed using CalEEMod™ and post-processing calculations. Equipment mixes and on-road trip assumptions were used as inputs to CalEEMod™ to obtain construction phase and/or equipment emission specific estimates. Emission estimates conservatively assume activity on January 1, 2015. This is a conservative assumption since much of the construction is expected to occur well after this date, when various emissions sources are likely to have lower emission factors than that assumed in this analysis. The CalEEMod output is post-processed to evaluate the total emissions that may occur during the construction phases. The total emission estimates are based on the estimated total equipment used (see Appendix C for details). The analysis assumes that all off-road diesel-power construction equipment greater than 50 horsepower meet USEPA Tier 4 off-road emissions standards.

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[23] An updated version of this model CalEEMod 2013.2.2 was released in October 2013. Available: http://www.caleemod.com/, accessed October 2013

[24] The USEPA maintains a compilation of Air pollutant Emission Factors and process information for several air pollution source categories. The data is based on source test data, material balance studies, and engineering estimates. Available at: http://epa.gov/ttnchie1/ap42/, accessed December 2011.

[25] Project construction assumptions also include a detailed equipment mix/on-road trip data for Westchester Stormwater Best Management Practices (BMP) Project that is primarily located in Area 1. Westchester Stormwater BMP is a related project that will be analyzed and approved separate from the proposed Project; however, it is included for purposes of the greenhouse gas analyses to provide a more conservative estimate of potential impacts

In accordance with SCAQMD guidance[26], GHG emissions from construction have been amortized over the 30-year lifetime of the proposed Project (i.e., total construction GHG emissions were divided by 30 to determine an annual construction emissions estimate comparable to operational emissions).

### 4.6.3.1.2 Vegetation

Permanent vegetation changes that occur as a result of project development constitute a one-time change in the carbon sequestration capacity of a project site. In this case, the current site conditions include large areas of dry vegetation. This analysis conservatively assumes this existing vegetation consists of "grassland," and also accounts for trees that will be removed for the development of the proposed Project, and that some paved or dirt ground will be converted to landscaped areas with trees. This will result in an overall net sequestration of carbon once the vegetation reaches a steady state (i.e., new vegetation replaces dying vegetation)[27].

Sequestration quantities were calculated assuming that 3,394 net new trees[28] would be planted within the Project site. Since the exact species of trees to be planted is not known at this time, the miscellaneous tree type was selected which represents an average of several tree species. GHG sequestration associated with vegetation were also amortized over the 30-year lifetime of the proposed Project.

### 4.6.3.1.3 Operations

Emissions from mobile and area sources and indirect emissions from energy and water use, wastewater, as well as waste management, would occur every year after build out (2022). The annual operational emission estimates were determined for the year 2020 so that these could be compared to SCAQMD's Tier 4 draft efficiency target threshold for 2020 of 4.8 MT of $CO_2e$ per Service Population (SP) per year. Operational emissions are estimated using CalEEMod$^{TM}$. A brief description of the operational sources is provided in this section.

## Area Sources

In a typical development, area source GHG emissions could result from landscaping-related fuel combustion sources, such as lawn mowers, and from natural gas fireplaces[29]. There are no substantial direct GHG emissions associated with the area source categories such as, consumer products and architectural coating. GHG emissions due to natural gas combustion in buildings from sources besides fireplaces are excluded from this section since they are included in the emissions associated with energy use.[30]

[26] South Coast Air Quality Management District, Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group Meeting #15, September 28, 2010, online at http://www.aqmd.gov/ceqa/handbook/GHG/2010/sept28mtg/ghgmtg15-web.pdf, accessed February 2014.

[27] CalEEMod User's Guide Appendix A pages 42-43.

[28] Rios Clementi Hale Studios, LAX Northside Design Guidelines and Standards, May 2014.

[29] Wood-burning fireplaces and stoves are banned in the portions of the South Coast Air District (except those 3,000 or more feet above mean sea level) as of March 9, 2009. Rule 445**.**

[30] The proposed Project does not have any residential units and the CalEEMOd model does not include any natural gas fireplaces for the land uses that are included in the proposed Project.

## Building Energy Use

GHGs are emitted from buildings as a result of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits $CO_2$ and other GHGs directly into the atmosphere; these emissions are considered direct emissions associated with a building. GHGs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions. The Los Angeles Department of Water and Power emission factor for electricity used in this analysis accounts for the state requirement that retail sellers of electricity are required to reach 33% renewable content in electricity by 2020 (see Table 13 in Appendix C for details). CalEEMod default parameters and site-specific information were used as noted (e.g., for the airport support uses energy usage data was provided by LAWA). The proposed Project's GHG emissions also reflect the proposed Project's commitment to construct buildings that are 15% more energy efficient than the 2008 Title 24 part 6 building code in order to meet Tier 1 of the California Green Buildings Standard.

## Water Supply, Treatment and Distribution

Indirect GHG emissions result from the production of electricity used to convey, treat, and distribute water and wastewater. The amount of electricity required to convey, treat, and distribute water depends on the volume of water as well as the sources of the water. CalEEMod defaults for indoor and outdoor water consumption were used for all land uses, except for airport support where water information was provided by the LAWA Facilities Management Division. A 30% reduction of potable indoor water use was applied to reflect the proposed Project's commitment to meet Tier 1 of the California Green Buildings Standard.[31]

## Waste Generation

The proposed Project will result in the generation and disposal of solid waste. A large percentage of this waste will be diverted from landfills by a variety of means, such as reducing the amount of waste generated, recycling, and/or composting. The remainder of the waste not diverted will be disposed of at a landfill. GHG emissions from landfills are associated with the anaerobic breakdown of material. CalEEMod's solid waste module determines the GHG emissions associated with the disposal of solid waste into landfills, in quantities that are based upon land use type according to waste disposal studies conducted by CalRecycle.

For the proposed Project, ENVIRON used site-specific information for the airport support uses and CalEEMod default waste generation rates for all other land uses. GHG emissions associated with non-landfill diverted waste streams are not considered, because it is generally assumed that these diversions do not result in any appreciable amounts of GHG emissions when operated effectively.[32] These waste diversion alternatives may result in differences in life-cycle emissions of GHGs, but it is not appropriate to combine life-cycle emissions for only one category of emissions[33]. Further, biogenic $CO_2$ emissions were not included when CARB analyzed the GHG emissions inventory under AB 32. Therefore, they are not included in the proposed Project emissions inventory.

[31] California Building Standards Commission, California 2010 Green Building Standards, CALGreen, California Code of Regulations Title 24, Part 11, June 2010

[32] California Air Resources Board, Local Government Operation Protocol, Chapter 9.4, 2010.

[33] This inventory represents scope 1 and 2 emission categories. A life-cycle analysis of waste diversion would be a scope 3 inventory. CARB's Local Government Operations Protocol Version 1.1 (May 2010) clearly states that scope 3 emissions should not be combined with scope 1 and 2 emissions.

## Mobile Sources

The mobile source emissions will result from the typical daily operation of motor vehicles by employees and visitors to the Project site. Traffic emissions were estimated using the trip rates specified in Appendix E and Project specific trip lengths. The analysis assumes CalEEMod™ default LADOT approved inputs for trip purpose and trip type. Project specific trip lengths were estimated for the community, civic, and retail uses based on the fact that these land uses would be local community serving areas. The emission estimates from mobile sources also reflect the implementation of a transportation demand management (TDM) program for the Project Site to promote non-auto travel. This measure is incorporated into the analyses by applying a 5% trip reduction to office and research & development land uses on the Project site (See Appendix E for details).

## 4.6.3.2 Significance Thresholds

The *L.A. CEQA Thresholds Guide* does not contain significance thresholds or criteria for use in evaluating environmental impacts related to GHG emissions. Appendix G of the State *CEQA Guidelines* provides sample checklist questions for use in an Initial Study to determine a project's potential for environmental impacts. The most recent amendments relating to climate change and GHG emissions encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments augmented Appendix G of the *CEQA Guidelines*, the sample environmental checklist form, to include a section on GHG emissions. The amendments to the *CEQA Guidelines* suggested the following questions:

Would the project:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Section 15064.7 of the State *CEQA Guidelines* defines a threshold of significance as an identifiable quantitative, qualitative or performance level of a particular environmental effect, compliance with which determines the level of impact significance. CEQA gives wide latitude to lead agencies in determining what impacts are significant and does not prescribe thresholds of significance, analytical methodologies, or specific mitigation measures. CEQA leaves the determination of significance to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects. However, neither the SCAQMD nor the City of Los Angeles has yet established specific quantitative significance thresholds for GHG emissions for residential or commercial projects. In the latest CEQA Guidelines amendments, which went into effect on March 18, 2010, OPR encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. However, the City of Los Angeles has not yet developed a Greenhouse Reduction Plan meeting the requirements set forth in the latest OPR guidelines.

As noted above, there are currently no widely-established or readily accepted thresholds of significance for GHG. SCAQMD released a draft guidance document regarding interim CEQA GHG significance thresholds in October 2008 and adopted this proposal in December 2008.

SCAQMD proposed a tiered approach, whereby the level of detail and refinement needed to determine significance increases with a project's total GHG emissions. The tiers are as follows:

- **Tier 1:** Determine if CEQA categorical exemptions are applicable. If not move to Tier 2;
- **Tier 2:** Consider whether or not the proposed Project is consistent with a locally adopted GHG reduction plan (often called a Climate Action Plan) that has gone through public hearings and CEQA review, that has an approved inventory, includes monitoring, etc. If not move to Tier 3;
- **Tier 3:** For residential and commercial projects, if projects are less than 3,000 metric tonnes/year of $CO_2e$, the project is presumed to be less than significant for GHGs. If the project exceeds 3,000 metric tonnes of $CO_2$ equivalent ($MTCO_2e/yr$), the analysis moves to Tier 4. More specific screening thresholds were also provided, which include 1,400 metric tonnes/year of $CO_2e$ for purely commercial projects if used consistently. These thresholds were based on a review of the Office of Planning and Research database which included 711 CEQA projects using a 90% capture approach[34].
- **Tier 4:** The proposed performance standards include three options:
    - Option 1: Percent Emission Reduction Target (no further recommendation)
    - Option 2: Early Implementation of Applicable AB32 Scoping Plan Measures (incorporated into option 3)
    - Option 3: SCAQMD Efficiency Target
        - For option 3, there are targets for 2020 and 2035. The target for 2020 is proposed to be:
            - 4.8 MT/year $CO_2e$ per service population for project level threshold (land use employment only)
            - 6.6 MT/year CO2e per service population for plan level threshold
        - The target for 2035 is proposed to be:
            - 3.0 MT/year $CO_2e$ per service population for project level threshold
            - 4.1 MT/year $CO_2e$ per service population for plan level threshold
            - Incorporate SB 375 regional targets.
- **Tier 5:** Off-site mitigation for life of project (30 years), if this threshold is to be used, GHG emissions must be mitigated to less than the Tier 3 screening significance threshold. SCAQMD clarified that offsets should have a 30 year project life, should be Real, Quantifiable, Verifiable, and Surplus and will be considered in the following prioritized manner:
    - Project design feature/onsite reduction measures
    - Offsite within neighborhood
    - Offsite within district

[34] SCAQMD adopted a threshold of 10,000 MT/year of $CO_2e$ for industrial projects where SCAQMD is the lead agency. This threshold was largely based on facilities with natural gas combustion sources and that were regulated by SCAQMD. While this proposed Project includes some land uses that might be considered industrial, these land uses (e.g., Airport Support and Westchester Stormwater BMP Project) are not characteristic of the facilities related to the SCAQMD industrial threshold.

- Offsite within-state
- Offsite out-of-state
- Substitution allowed via enforceable commitment (e.g. when an offset project ends prematurely).

Los Angeles World Airports (LAWA) is a complex facility where a variety of industrial, commercial and/or mixed-use type projects may occur. Given the proposed thresholds by SCAQMD, there are different thresholds that may be applicable for different projects. As an example, for industrial projects where SCAQMD is the lead agency, SCAQMD has adopted a threshold of 10,000 metric tonnes of $CO_{2e}$ per year. The development of this threshold was largely based on the GHG emissions associated with natural gas combustion. While some LAWA project's may fit this characteristic, the proposed Project is not an industrial project.

For terminal/airport related projects, the dominant source of GHG emissions are related to aircraft and passenger vehicle travel. These sources of emissions are typically proportional to the annual passenger levels rather than the number of airport employees. In this context, the SCAQMD proposed and adopted thresholds do not apply very well. The development of a $MTCO_{2e}$ per passenger per year metric could be used as a significance threshold for such LAWA projects. The proposed Project is a mixed-use development project with commercial and recreational uses. As discussed above, for this type of project there are multiple threshold options that could be applied. This analysis uses the proposed Tier 4 screening thresholds, the 2020 SCAQMD efficiency target of 4.8 MT $CO_2$e per year per service population.

## 4.6.3.3 LAX Master Plan Commitments and Project Design Features

### 4.6.3.3.1 LAX Master Plan EIS/EIR Commitments

As part of the LAX Master Plan, LAWA adopted commitments and control measures pertaining to air quality to avoid or reduce environmental impacts. Since the Project site is located within the LAX Master Plan boundaries, LAWA will also fulfill the commitments it has made in the LAX Master Plan for the proposed Project. In addition, the air quality control measures that would be applicable to the proposed Project and that would provide co-benefits of reducing GHG emissions. The following commitments and measures are applicable to the proposed Project and were considered in the air quality analysis herein.

- **MM-Air Quality (AQ)-1: LAX Master Plan – Mitigation Plan for Air Quality.** LAWA shall expand and revise the existing air quality mitigation programs at LAX through the development of an LAX Master Plan Mitigation Plan for Air Quality (LAX MP-MPAQ). The LAX MP-MPAQ shall be developed in consultation with the FAA, the U.S. Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the South Coast Air Quality Management District (SCAQMD), as appropriate, and shall include all feasible methods to reduce air pollutant emissions from aircraft, Ground Support Equipment (GSE), traffic, and construction equipment both on and off the airport. The goal of the LAX MP-MPAQ shall be to reduce potential air pollutant emissions associated with implementation of the LAX Master Plan to levels equal to, or less than, the thresholds of significance identified in the Final EIS/EIR for the project. At a minimum, air pollutant emissions associated with implementation of the LAX Master Plan will be reduced (to levels equal to those identified in Table AD5-8 of the Master Plan, Total Operational and

Construction Emission – Mitigated). The LAX MP-MPAQ shall include feasible mitigation measures that are grouped into the following three (3) categories:

1. Construction-Related Measure;
2. Transportation-Related Measure; and
3. Operations-Related Measure.

The LAX MP-MPAQ will, initially, present the basic framework of the overall air quality mitigation program (basic LAX MP-MPAQ), and will, ultimately, define the specific measures to be implemented within the context of three (3) individual components specific to the categories of emissions indicated above (full LAX MP-MPAQ). Implementation of Mitigation Measure MM-AQ-2, Construction-Related Mitigation Measure, will define the specific measures to be included in the construction-related component; Mitigation Measure MM-AQ-3, Transportation-Related Mitigation Measure, will define the specific measures to be included in the surface transportation-related component; and Mitigation Measure MM-AQ-4, Operations-Related Mitigation Measure, will define the specific measures to be included in the operations-related component. The basic framework of the LAX MP-MPAQ and the Construction-Related component will be developed prior to initiation of construction activities for the first project to be developed under the LAX Master Plan, and the development of the other two components will occur in conjunction with implementation of the Master Plan components that materially affect surface transportation emissions and operations emissions

- **MM-AQ 2: Construction Related Measure.** The required components of the construction-related air quality mitigation measure are itemized below. These components include numerous specific actions to reduce emissions of fugitive dust and of exhaust emissions from on-road and nonroad mobile sources and stationary engines. All of these components must be in place prior to commencement of the first Master Plan construction project and must remain in place through build out of the Master Plan. An implementation plan will be developed which provides available details as to how each of the elements of this construction-related mitigation measure will be implemented and monitored. Each construction subcontractor will be responsible to implement all measures that apply to the equipment and activities under his/her control, an obligation which will be formalized in the contractual documents, with financial penalties for noncompliance. LAWA will assign one or more environmental coordinators whose responsibility it will be to ensure compliance with the construction-related measure by use of direct inspections, records reviews, and investigation of complaints with reporting to LAWA management for follow-up action. The estimated ranges of emissions reductions quantified for this mitigation measure for Alternative D are shown in Table F5-8, Estimated Ranges of Emission Reductions for Construction-Related Air Quality Mitigation Measures. Reliable emissions reductions were not able to be quantified for all of these components.

**Table F5-8**

**Estimated Ranges of Emissions Reductions for Construction-Related Air Quality Mitigation Measures**

| Pollutant | Alternatives A, B, C, and D[1] (tons) |
|---|---|
| ROG | 1 - 10 |
| $NO_X$ | 300 - 1,100 |
| CO | 10 - 30 |
| $PM_{10}$ | 140 - 400 |
| $SO_X$ | 1 - 10 |

[1] In the year of peak construction emissions.

Source: Camp Dresser & McKee Inc., 2004.

The specific components of this construction-related air quality mitigation measures include:

1. Fugitive Dust Source Controls:
    - Apply non-toxic soil stabilizer to all inactive construction areas (i.e., areas with disturbed soil).
    - Following the addition of materials to, or removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing non-toxic soil stabilizer.
    - Post a publicly visible sign with the telephone number and person to contact regarding dust complaints; this person shall respond and take corrective action within 24 hours.
    - Prior to final occupancy, the applicant demonstrates that all ground surfaces are covered or treated sufficiently to minimize fugitive dust emissions.
    - All roadways, driveways, sidewalks, etc. being installed as part of project should be completed as soon as possible; in addition, building pads should be laid as soon as possible after grading.
    - Pave all construction access roads at least 100 feet on to the site from the main road.
2. On-Road Mobile Source Controls:
    - To the extent feasible, have construction employees work/commute during off-peak hours.
    - Make available on-site lunch trucks during construction to minimize off-site worker vehicle trips.
3. Nonroad Mobile Source Controls:

- Prohibit staging or parking of construction vehicles (including workers' vehicles) on streets adjacent to sensitive receptors such as schools, daycare centers, and hospitals.
- Prohibit construction vehicle idling in excess of ten minutes.
- Utilize on-site rock crushing facility, when feasible, during construction to reuse rock/concrete and minimize off-site truck haul trips.

4. Stationary Point Source Controls:
   - Specify combination of electricity from power poles and portable diesel- or gasoline-fueled generators using "cleaner burning diesel" fuel and exhaust emission controls.
5. Mobile and Stationary Source Controls:
   - Specify combination of construction equipment using "cleaner burning diesel" fuel and exhaust emission controls.
   - Suspend use of all construction equipment during a second-stage smog alert in the immediate vicinity of LAX.
   - Utilize construction equipment having the minimum practical engine size (i.e., lowest appropriate horsepower rating for intended job).
   - Require that all construction equipment working on site is properly maintained (including engine tuning) at all times in accordance with manufacturers' specifications and schedules.
   - Prohibit tampering with construction equipment to increase horsepower or to defeat emission control devices.
6. Administrative Controls
   - The contractor or builder shall designate a person or persons to ensure the implementation of all components of the construction-related measure through direct inspections, records reviews, and investigations of complaints.

- **MM-AQ-3: Transportation-Related Measure.** The primary feature of the transportation-related air quality mitigation measure is the development and construction of at least eight (8) additional sites with FlyAway service similar to the service provided by the Van Nuys FlyAway currently operated by LAWA. The intent of these FlyAway sites is to reduce the quantity of traffic going to and from LAX by providing regional locations where LAX employees and passengers can pick up an LAX-dedicated, clean-fueled bus that will transport them from a FlyAway closer to their home or office into LAX and back. The reduction in vehicle miles traveled (VMT) translates directly into reduced air emissions, as well as a reduction in traffic congestion in the vicinity of the airport. An implementation plan will be developed which provides available details as to how each of the elements of this transportation-related mitigation measure will be implemented and monitored. The estimated emissions reductions associated with this component of the transportation-related air quality mitigation measure are shown in Table F5-9.

**Table F5-9**

**Estimated Emissions Reductions (Tons) for Eight (8) New FlyAway Terminals - 2015**

| Pollutant[1] | Alternative D |
|---|---|
| ROG | 56.0 |
| NOX | 82.9 |
| CO | 1064.5 |
| PM10 | 152.6 |
| SOX | 1.7 |

Note: Reductions are the combined totals from all new FlyAway capacity, and may include expansion of the existing FlyAway.

[1] Based on EMFAC2002 Emission Factors for Calendar Year 2015.

Source: Camp Dresser & McKee Inc., 2004.

The required two (2) elements of this transportation-related air quality mitigation measure include:

1. Development of New FlyAway Capacity:

Additional service capacity from at least eight (8) FlyAway service terminals are required under this measure, and all eight must be operational by 2015. LAWA has already begun analyzing potential FlyAway locations. Selection of the eight general locations should be made and included in the overarching air quality mitigation program plan discussed in Mitigation Measure MM-AQ-1, LAX Master Plan Mitigation Plan for Air Quality, as well as in the implementation plan for the transportation-related measures noted above. Final selection of the sites must be completed on a schedule that allows for property acquisition or leasing, terminal design, construction, and implementation of all sites by 2015.

The sites may include, but are not limited to the following:

- West San Fernando Valley/Eastern Ventura County
- Santa Monica/Pacific Palisades
- Central Los Angeles
- Long Beach/South Bay/San Pedro
- East San Fernando Valley
- San Gabriel Valley
- Southeast Los Angeles County
- North Los Angeles County

2. Public Outreach Program for FlyAway Service:

This measure also requires a public outreach program to inform potential users of the terminals about their existence and their locations. The outreach program would be geared towards encouraging the use of the FlyAways with convenience and low cost being the primary selling points.

Other feasible mitigation elements may be developed to ensure that the emission reductions for this transportation-related measure are achieved. These may include, for example:

- Transit Ridership measures such as:
  - Constructing on-site or off-site bus turnouts, passenger benches, or shelters to encourage transit system use.
  - Constructing on-site or off-site pedestrian improvements/including showers for pedestrian employees to encourage walking/bicycling to work by LAX employees.
- Highway and Roadway Improvements measures such as:
  - Linking ITS (Intelligent Transportation System) with off-airport parking facilities with ability to divert/direct trips to these facilities to reduce traffic/parking congestion and associated air emissions in the immediate vicinity of the airport.
  - Expanding ITS/ATCS systems, concentrating on I-405 and I-105 corridors, extending into South Bay and Westside surface street corridors to reduce traffic/parking congestion and associated air emissions in the immediate vicinity of the airport.
  - Linking LAX traffic management system with airport cargo facilities, with ability to reroute cargo trips to/from these facilities to reduce traffic/parking congestion and associate air emissions in the immediate vicinity of the airport.
  - Developing a program to minimize the use of conventional-fueled fleet vehicles during smog alerts to reduce air emissions from vehicles at the airport.
- Parking measures such as:
  - Providing free parking and preferential parking locations for ULEV/SULEV/ZEV in all (including employee) LAX lots; providing free charging stations for ZEV; including public outreach to reduce air emissions from automobiles accessing airport parking.
  - Measures to reduce air emissions of vehicles in line to exit parking lots such as pay-on-foot (before getting into car) to minimize idle time at parking check out, including public outreach.
  - Implementing on-site circulation plan in parking lots to reduce time and associated air emissions from vehicles circulating through lots looking for parking.

        - Encouraging video conferencing and providing video conferencing capabilities at various locations on the airport to reduce VMT and associated air emissions in the vicinity of the airport.
    - Additional Ridesharing measures such as:
        - Expanding the airport's ridesharing program to include all airport tenants.
    - Clean Vehicle Fleets measures such as:
        - Promoting commercial vehicles/trucks/vans using terminal areas (LAX and regional intermodal) to install SULEV/ZEV engines to reduce vehicle air emissions.
        - Promoting "best-engine" technology (SULEV/ZEV) for rental cars using on-airport RAC facilities to reduce vehicle air emissions.
        - Consolidating nonrental car shuttles using SULEV/ZEV engines to reduce vehicle air emissions.
    - Energy Conservation measures such as:
        - Covering, if feasible, any parking structures that receive direct sunlight, to reduce volatile emissions from vehicle gasoline tanks; and installing solar panels on these roofs where feasible to supply electricity or hot water to reduce power production demand and associated air emissions at utility plants.

  These other components may require the approval of other federal, state, regional, and/or local government agencies. It should be noted that no air quality benefit (i.e., pollutant reduction) was estimated in the Final EIS/EIR for these additional components; hence, implementation of any of these other components would, in conjunction with the FlyAways described above, provide for additional air quality benefits over and above the amount of transportation-related pollutant reductions accounted for in the Final EIS/EIR

- **MM-AQ-4: Operations-Related Mitigation Measure.** The primary component of the operations-related air quality mitigation measure consists of one airside item, the conversion of ground support equipment (GSE) to extremely low emission technology (such as electric power, fuel cells, or other future technological developments). Due to the magnitude of the effort to convert GSE, it must be a phased program and must be completed by the time passenger activity level reaches 78.9 million annual passengers and complete build out of the LAX Master Plan. An implementation plan will be developed which provides available details as to how each of the elements of this operations-related mitigation measure will be implemented and monitored. Because this effort will apply to all GSE in use at LAX, both LAWA-owned equipment and tenant-owned equipment, the effort must begin upon City approval of the LAX Plan with a detailed inventory of the number, types, sizes, and usage history of all GSE at LAX. Because some of the tenant organizations (mainly the major domestic commercial airlines) have signed a memorandum of understanding (MOU) with the California Air Resources Board (CARB) that requires the signatories to replace a proportion of their GSE fleet with clean-fuel alternatives (including zero-emission equipment), it will be necessary for LAWA to evaluate the level of its commitment within the framework of the MOU. Because LAWA anticipates facilitating this component by providing incentives or tenant lease requirements, early negotiations with tenant organizations may allow LAWA to accommodate cost-sharing agreements to implement the GSE conversions in a timely

manner, to make LAWA's financial commitment as cost effective as possible. LAWA will assign a GSE coordinator whose responsibility it will be to ensure the successful conversion of GSE in a timely manner. This coordinator must have adequate authority to negotiate on behalf of the City and have sufficient technical support to evaluate technical issues that arise during implementation of this measure. The estimated ranges of emissions reductions quantified for this component of the operations-related measure for Alternative D are shown in Table F5-10.

**Table F5-10**

**Estimated Ranges of Emission Reductions for GSE Conversion**

| Pollutant[1] | Alternative D[1] (tons) |
|---|---|
| ROG | 10 - 100 |
| $NO_X$ | 300 - 400 |
| CO | 500 - 1000 |
| PM10 | 1 - 10 |
| $SO_X$ | 1 - 5 |

[1] In the build-out year projected by the LAX Master Plan.

Source: Camp Dresser & McKee Inc., 2004.

The successful conversion of all GSE at LAX to extremely low or zero emission equipment by the LAX Master Plan build out is the required element of this mitigation measure.

Consideration of other operations-related measures may include components such as contracting with commercial landscapers who operate lowest emitting equipment. Reliable emissions reductions have not been quantified for these other components.

## 4.6.3.3.2 Project Design Features

The following Project Design Features (PDFs) associated with the proposed Project that would provide benefits of reducing GHG emissions are summarized below:

- **PDF Greenhouse Gas (GHG)-1:** Implementation of a Transportation Demand Management (TDM) program for the Project site to promote non-auto travel (See Appendix E for further details). This measure is incorporated into the analyses by applying a 5% trip reduction to office and research & development land uses on Project site.
- **PDF GHG-2:** Capping the maximum number of trips generated by the LAX Northside at 23,635 total daily vehicle trips.
- **PDF GHG-3:** Compliance with Los Angeles Green Building Code (LAGBC) Tier 1 requirements including but not limited to:
    - Section A5.203.1.1 Energy Efficiency: Exceed the 2008 energy efficiency standards defined in the California Energy CodeTitle-24 Part 6 by 15%.

- Section A5.303.2.3.1 Indoor Water Use: Reduce the overall use of portable water within the building by 30% from the maximum allowable water use per plumbing fixture and fittings as required by the California Building Standards Code.

## 4.6.3.4 Project Impacts

### 4.6.3.4.1 Construction

Annual construction GHG emissions for the proposed Project before mitigation are presented in **Table 4.6-8**. To be consistent with guidance from the SCAQMD for calculating criteria pollutants from construction activities, GHG emissions from on-site construction activities and off-site hauling, vendor deliveries, and construction worker commuting are considered as generated by the proposed Project. The SCAQMD recommends that amortized GHG construction emissions (i.e., total construction emissions divided by the lifetime of the Project, assumed to be 30 years) be added to operational emissions to evaluate significance.[35] Construction of the proposed Project is estimated to emit a total of 32,483 metric tonnes of $CO_2e$ during construction. When amortized over 30 years, construction results in approximately 1,083 metric tonnes per year of $CO_2e$. Construction-related significance is not determined on an individual basis for GHG emissions; rather, Section 4.6.3.4.3 below evaluates the significance of the combined GHG emissions for the proposed Project.

[35] South Coast Air Quality Management District, Draft Guidance Document - Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008.

**Table 4.6-8**

**Construction Greenhouse Gas Emissions**

| Emission Source | $CO_2e$ (Metric Tonnes) |
|---|---|
| On-Site Emissions | 20,380 |
| Worker Trip Emissions | 7,645 |
| Vendor Trip Emissions | 1,392 |
| Hauling Trip Emissions | 2,026 |
| Westchester Stormwater BMP Construction[1] Emissions | 1,040 |
| **Total Construction Emissions** | **32,483** |
| **Total Construction Emissions (Amortized – 30 years)** | **1,083** |

Notes:

1 Westchester Stormwater BMP is a related project that will be analyzed and approved separate from the proposed Project; however, it is included for purposes of the air quality analysis to provide a more conservative estimate of potential impacts.

Source: Appendix C

## 4.6.3.4.2 Vegetation

Greenhouse gas sequestration quantities associated with permanent vegetation changes that occur as a result of the proposed Project development are presented in **Table 4.6-9**. Sequestration quantities were calculated assuming changes in scrub and grassland areas on the project site as well as addition of 3,394 net new trees[36]. The total quantity of $CO_2e$ sequestered as a result of vegetative changes is estimated to be 1,882 metric tonnes. When amortized over 30-years this quantity amounts to 63 metric tonnes per year of $CO_2e$.

**Table 4.6-9**

**Greenhouse Gas Sequestration Associated with Vegetation**

| Type of Land Use Change | $CO_2e$ Sequestered[1] (Metric Tonnes) |
|---|---|
| Grassland | -597 |
| Scrub | 76 |
| New Miscellaneous Trees | 2,403 |
| **Total $CO_2e$ Sequestered** | **1,882** |
| **Total $CO_2e$ Sequestered (Amortized – 30 years)** | **63** |

Notes:

[36] Rios Clementi Hale Studios, LAX Northside Design Guidelines and Standards, May 2014.

**Table 4.6-9**

**Greenhouse Gas Sequestration Associated with Vegetation**

| Type of Land Use Change | $CO_2e$ Sequestered[1] (Metric Tonnes) |
|---|---|

[1] Total CO2e sequestered over the life of the new trees assuming 20 years of life and CO2e from the one time land use change. A negative value indicated a loss of sequestration.
Source: Appendix C

## 4.6.3.4.3 Operations

Operational GHG emissions for the proposed Project are presented in **Table 4.6-10**. Future operational GHG emissions are 30,950 metric tonnes $CO_2e$ per year, which when combined with the amortized construction and vegetation emissions indicated above, would contribute to a total of 31,970 metric tonnes $CO_2e$ per year.

Although no numeric threshold for determining the significance of construction or operational GHG emissions from a commercial/airport development project has been adopted by the lead agency or by the SCAQMD, the Project's emissions will be compared to the SCAQMD's Tier 4 draft efficiency target threshold for 2020 of 4.8 MT of $CO_{2e}$ per Service Population (SP) per year.[37] This efficiency target is derived from average reductions needed to be consistent with AB 32.[38]

**Table 4.6-10** reports the Project's annualized GHG emissions (operation, construction and vegetation) as 4.50 metric tonnes per service population per year. This is below the SCAQMD's draft significance threshold. Under this analysis, the Project would have less than significant GHG emission impacts.

**Table 4.6-10**

**Annual Greenhouse Gas Emissions**

| Emission Source | $CO_2e$ Emissions (Metric Tonnes/year)[1] |
|---|---|
| Area[2] | 0 |
| Energy Use | 12,959 |
| Water Use | 2,887 |
| Waste Disposed | 858 |
| Mobile Sources | 14,139 |

[36] Since the definition of service population in SCAQMD's draft threshold is not yet well defined, this analysis includes commuting adult students to higher education land uses in a development service population since they behave similar to employees at a commercial land use.

[38] South Coast Air Quality Management District, GHG CEQA Significance Threshold Working Group Meeting #13, August 26, 2009, online at http://www.aqmd.gov/ceqa/handbook/GHG/2009/aug26mtg/wkgp13minutes.pdf, accessed April 2013.

**Table 4.6-10**

**Annual Greenhouse Gas Emissions**

| Emission Source | $CO_2e$ Emissions (Metric Tonnes/year)[1] |
|---|---|
| Westchester Stormwater BMP Project[3] | 108 |
| **Total Operational GHG Emissions** | **30,950** |
| Construction (Amortized)[4,5] | 1,083 |
| Vegetation (Amortized)[5] | -63 |
| **Total GHG Emissions** | **31,970** |
| Service Population[6] | 7,111 |
| **Total GHG Emissions per Service Population** | **4.50** |
| GHG Threshold Emissions per Service Population | 4.80 |
| **Above the Threshold?** | **No** |

Note:

1 Numbers may not add up exactly due to rounding.

2 Emissions from area sources (e.g., landscaping-related fuel combustion) are estimated to be less than the significant digits shown.

3 Westchester Stormwater BMP is a related project that will be analyzed and approved separate from the LAX Northside Plan Update Project; however, it is included for purposes of the air quality analysis to provide a more conservative estimate of potential impacts.

4 One-time emissions were amortized over a 30 year period.

5 A net increase sequestration of carbon results in a decrease (or negative) $CO_2e$.

6 Service population includes employees and adult students. Since the definition of service population in SCAQMD's draft threshold is not yet well defined, this analysis includes commuting adult students to higher education land uses in a development service population since they behave similar to employees at a commercial land use.

Source: Appendix C

## 4.6.3.4.4 Consistency with Greenhouse Gas Reduction Plans

As discussed previously, the proposed Project would comply with the LAGBC Tier 1 requirements. LAWA has based its new sustainable construction standards on the mandatory and voluntary tiers defined in the LAGBC. All building projects with an LADBS permit-valuation over $200,000 shall achieve LAGBC Tier 1 conformance, to be certified by LADBS during final plan check (on the issued building permit) and validated by the LADBS inspector during final inspection (on the Certificate of Occupancy).

As discussed previously, the requirements of the adopted LAGBC apply to new building construction, building renovations, and building additions within the City of Los Angeles. Specific mandatory requirements and elective measures are provided for three categories: (1) low-rise residential buildings; (2) nonresidential and high-rise residential buildings; and (3) additions and alterations to nonresidential and high-rise residential buildings. The proposed Project would

comply with the mandatory requirements for nonresidential buildings including the mandatory requirements for Tier 1 conformance. Specific measures that would be included as part of the Project design are listed in **Table 4.6-2**. Certain measures of note include but are not limited to compliance with enhanced construction waste reduction goals, exceeding the California Energy Code requirements (based on the 2008 Energy Efficiency Standards) by 15 percent, use of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 30 percent, providing readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling, and use of low-emitting adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, caulks, and other materials. As a result, the proposed Project would be consistent with LAGBC to reduce GHG emissions.

#### 4.6.3.4.5 Summary of Impacts

The proposed Project allows 2,320,000 square feet of a mixed use development consisting of recreational uses, office space, research and development uses, retail and airport support. The primary sources of GHG emissions of this development are employee/customer commutes, consumption of electricity, natural gas, and water, and the generation of solid waste and wastewater. The proposed Project includes several design features that reduce GHG emissions associated with construction and operation. Some of the design features that result in emission reductions compared with past practices include compliance with LAGBC Tier 1 requirements and implementation of a TDM program to promote non-auto travel. The GHG emissions (operational plus amortized construction and vegetation) associated with the proposed Project would not exceed the threshold of significance described in Section 4.6.3.2; therefore, implementation of the proposed Project would not result in significant GHG impacts.

### 4.6.3.5 Transfer Program

The proposed Project would include flexibility to allow for transfers of floor area within Districts on a per square foot basis. While transfers of floor area across Districts would be permitted, the maximum proposed Project total of 2,320,000 square feet may not be exceeded. As seen in Table 4.6-10 the primary sources of GHG emissions include mobile sources and utilities like energy, water use and waste generation. The effect of floor area transfers on these sources is discussed in Chapters 4.14, *Traffic and Transportation* and 4.15, *Utilities and Services* of this EIR.

As described in Section 4.14.3.4.8 of the *Traffic and Transportation* chapter of this EIR, the floor area transfers will be based on a Land Use Equivalency Program that utilizes conversion factors that are based on trip generation characteristics of the permitted uses. This approach ensures that the maximum number of trips generated by the proposed Project will not exceed the 23,636 total daily vehicle trip maximum. Since the GHG emissions from mobile sources are proportional to the number of trips, the floor area transfers are not expected to change the GHG emissions from the mobile sources.

As described in Section 4.15.3.4.6 of the *Utilities and Services* chapter of this EIR, the transfer program is not expected to result in any substantial change in wastewater generation, water use, solid waste generation and energy use of the proposed Project. As a result, the GHG emissions associated with these source types are also expected to remain similar to the Project should floor area be transferred.

The transfer program would not result in a substantial change in GHG emission sources nor the service population, thus floor area transfers would not alter the conclusions with regard to GHG emissions. Should the floor area be transferred across Districts, the resulting impacts would be similar to those evaluated for proposed Project given that the GHG emission sources and the service population are not expected to substantially change.

## 4.6.4 Cumulative Impacts

As discussed previously in Section 4.6.3.2 (Thresholds of Significance), the *CEQA Guidelines* do not include or recommend any particular threshold of significance; instead, they leave that decision to the discretion of the lead agency (§15064.4).[39] The California Natural Resources Agency (CNRA) noted in its Public Notice for the added sections on GHG, that the impacts of GHG emissions should be considered in the context of a cumulative impact, rather than a project impact. The Public Notice states:[40]

> 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.

The emissions of greenhouse gases from a single project into the atmosphere will likely not itself lead to an adverse environmental effect; rather it is the cumulative emissions of greenhouse gases from many sources and projects to the atmosphere that may result in global climate change. Global climate change can lead to adverse environmental effects. A Project's greenhouse gas emissions typically would be very small in comparison to local, state, national or global greenhouse gas emissions and thus, the Project's emissions in isolation would have no significant impact on climate change. Due to the complex physical, chemical and atmospheric mechanisms involved in global climate change, it is speculative to identify the specific impact, if any, to global climate change from the Project's incremental contribution to global greenhouse gas emissions. As such, the Project GHG emissions and the resulting significance determination are more appropriately used to represent the potential cumulative impact of the Project.

The State has mandated a goal of reducing statewide emissions to 1990 levels by 2020. The California Air Resources Board is in the process of establishing and implementing regulations to reduce statewide greenhouse gas emissions. However, there are currently no adopted significance thresholds or approved policy or guidance to assist in determining significance at the project or cumulative level for this proposed Project.

The analysis presented in this Chapter concludes that the proposed Project is less than significant. The analysis illustrates that the Project would be consistent with the State's goals of

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[39] California Natural Resources Agency, Guidelines for Implementation of the California Environmental Quality Act, online at http://ceres.ca.gov/ceqa/docs/FINAL_Text_of_Proposed_Amendemts.pdf, accessed March, 2013.

[40] California Natural Resources Agency, Notice of Public Hearings and Notice of Proposed Amendment of Regulations Implementing the California Environmental Quality Act, online at http://ceres.ca.gov/ceqa/docs/Notice_of_Proposed_Action.pdf, accessed March, 2013.

reducing statewide emissions to 1990 levels. The methods used to evaluate the Project are consistent with the approach used by the California Air Resources Board for the implementation of Assembly Bill 32. In particular, the proposed Project achieves greater energy efficiency and emphasizes smart growth to minimize mobile source related emissions. The Project is also consistent with the Tier 1 requirements of LAGBC. Given the Project's consistency with State and City greenhouse gas emission reduction goals and objectives, and that the Project's greenhouse gas emissions are less than significant, the Project would not be considered to be cumulatively considerable.

## 4.6.5 Mitigation Measures

The proposed Project will be developed in compliance with all statutory requirements to preclude significant impacts on greenhouse gas emissions. In addition, implementation of LAX Master Plan Commitments LAX-AQ-1, LAX-AQ-2, LAX-AQ-3 and LAX-AQ-4 and the Project Design Features (Section 4.6.3.3.2) would ensure that impacts relative to GHG emissions associated with the proposed Project would be less than significant. Therefore, no mitigation measures specific to the proposed Project are required.

## 4.6.6 Level of Significance After Mitigation

Impacts related to GHG emissions would be less than significant without mitigation in excess of what the LAX Master Plan EIR/EIS requires of LAWA projects (Section 4.6.3.4.5), the impacts would remain less than significant.