

4.2 Greenhouse Gas Emissions

4.2.1 Introduction

This greenhouse gas (GHG) analysis examines GHG and global climate change (GCC) impacts that would result from construction activities and operational energy changes associated with the proposed project. This section describes applicable Federal, State, and local regulations that address GHG emissions and GCC in California and the City of Los Angeles; existing climate conditions and influences on GCC are also described. The analysis accounts for energy¹²³ and resource conservation measures that have been incorporated into the proposed project, as well as pertinent State mandated GHG emission reduction measures. The analysis also assesses cumulative and project-related contributions to GCC that would result from the proposed project. Air quality effects associated with criteria pollutant (ambient air pollutant) emissions are discussed in Chapter 4.1, *Air Quality and Human Health Risk*, of this EIR. GHG emission calculations prepared for the proposed project are provided in Appendix B of this Draft EIR.

4.2.1.1 Global Climate Change (GCC)

Briefly stated, GCC is a change in the average climatic conditions of the 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 these 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 changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) developed several emission projections of GHGs needed to stabilize global temperatures and climate change impacts. The IPCC predicted that the global mean temperature change from 2005 to 2100, given six ambient CO₂ scenarios, could range from 1.5 to 4.8 degrees Celsius (C). Regardless of analytical methodology, global average temperature and mean sea level are expected to rise under all scenarios.¹²⁴

Climate models applied to California's conditions project that, under different scenarios, temperatures in California are expected to increase by 2.1 to 8.6 degrees Fahrenheit (F). Almost all climate scenarios include a continuing trend of warming through the end of the century given the substantial amounts of GHGs already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. According to the 2012 Report from the California Climate Change Center, the following climate change effects are predicted in California over the course of the next century.¹²⁵

- ◆ A diminishing Sierra snowpack threatens the State's water supply, reduces generation of hydroelectric power, and increases the probability of wildfires along electrical transmission line corridors.
- ◆ Increasing temperatures, as noted above, of up to approximately 9 degrees F under the higher emission scenarios, leading to increases in the number of days when ozone pollution levels are exceeded in most urban areas.
- ◆ Coastal erosion along the length of California and sea water intrusion into the Sacramento-San Joaquin River Delta from 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 agricultural industry from water shortages, increasing temperatures, and saltwater intrusion into the Sacramento-San Joaquin River Delta.

¹²³ See Section 6.5 Energy Impacts and Conservation in Chapter 6, *Other Environmental Considerations*, of this EIR for discussion of energy efficiency measures.

¹²⁴ Intergovernmental Panel on Climate Change, Available: https://www.ipcc.ch/publications_and_data/publications_and_data.shtml, accessed November 18, 2015.

¹²⁵ California Climate Change Center, Available: <http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf>, accessed January 20, 2017.

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- ◆ 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.

4.2.1.2 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 – primarily water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone, chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) – 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 concentrations 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.” Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. A feedback is “an internal climate process that amplifies or dampens the climate response to a specific forcing.”¹²⁶ The global warming potential (GWP) is “a measure of the total energy that a gas absorbs over a particular period of time (usually 100 years), compared to carbon dioxide”¹²⁷ Individual GHG species have varying GWP and atmospheric lifetimes. The carbon dioxide equivalent (CO₂e) – the mass emissions of an individual GHG multiplied by its GWP – is a consistent methodology for comparing GHG emissions because it normalizes various GHG emissions to a consistent metric. The reference gas for GWP is CO₂, which has a GWP of 1. Compared to CH₄'s GWP of 25, CH₄ has a greater global warming effect than CO₂ on a molecule-per-molecule basis. Table 4.2-1 identifies the GWP of several select GHGs.

**Table 4.2-1
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	15	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Perfluoromethane (CF ₄)	50,000	7,390
PFC: Perfluoroethane (C ₂ F ₆)	10,000	12,200
Sulfur Hexafluoride (SF ₆)	3,200	22,800

Source: Forster, P., V. Ramaswamy, P. Artaxo, T. Bernsten, R. Betts, D.W. Fahey, J. Haywood, J. Lean, D.C. Lowe, G. Myhre, J. Nganga, R. Prinn, G. Raga, M. Schulz and R. Van Dorland, 2007: *Changes in Atmospheric Constituents and in Radiative Forcing*. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.¹²⁸

Prepared By: CDM Smith, May 2016

¹²⁶ National Research Council of the National Academies, *Radiative Forcing of Climate Change: Expanding the Concept and Addressing Uncertainties*, 2005.

¹²⁷ U.S. Environmental Protection Agency, *Glossary of Climate Change Terms*, Available: www.epa.gov/climatechange/glossary.html, accessed August 31, 2016.

¹²⁸ GWP values have been updated in IPCC's subsequent assessment report, the Fifth Assessment Report. 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 Fourth Assessment Report.

In estimating the GHG emissions, the *GHG Protocol Corporate Accounting and Reporting Standard* (GHG Protocol), developed by the World Business Council for Sustainable Development and World Resources Institute,¹²⁹ provides standards and guidance for preparing a GHG emissions inventory. The standard is written primarily from the perspective of a business developing a GHG 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 European Union Emissions Trading Scheme to The Climate Registry (Registry), as well as hundreds of GHG inventories prepared by individual companies.

The GHG Protocol divides GHG emissions into three source types of “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.

The Airport Council International (ACI) has an Airport Carbon Accreditation (ACA) program that evaluated an airport’s GHG emissions according to similar principles.

4.2.2 **Methodology**

The assumptions used to estimate GHG emissions from construction sources are the same as those discussed in Section 4.1, *Air Quality and Human Health Risk*, Section 4.1.1.3, Methodology. The discussion below provides a description of methodology elements that are specific to analyzing GHG emissions.

GHG impacts are treated as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. 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:

“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.”

It is the accumulation of GHGs in the atmosphere that may result in global climate change. Climate change impacts are cumulative in nature, and thus no typical single project would result in emission of such a magnitude that it, in and of itself, would be significant on a project basis. A typical single project’s GHG emission will be small relative to total global or even statewide GHG emissions. Thus, the analysis of significance of potential impacts from GHG emissions related to a single project is already representative of the long-term impacts on a cumulative basis. As such, the assessment of significance is based on a determination of whether the GHG emissions from the proposed project represent a cumulatively considerable contribution to GCC.

A number of methodologies and significance thresholds have been proposed to analyze the impacts of GHG emissions on GCC. However, at the time of this analysis, no definitive thresholds or methodologies that are

¹²⁹ World Business Council for Sustainable Development and World Resources Institute, *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition*, March 2004, Available: <http://www.ghgprotocol.org/files/ghgp/public/ghg-protocol-revised.pdf>, Accessed January 19, 2017

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applicable to the proposed project have been formally adopted for determining the significance of the project's cumulative contribution to GCC in CEQA documents.

Various guidance documents, such as The Climate Registry General Reporting Protocol (version 2.1, January 2016);¹³⁰ 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);¹³¹ the Association of Environmental Professionals (AEP) Community-wide GHG Emissions Protocol;¹³² and the ACI ACA program propose generally consistent methodologies for preparing GHG inventories.¹³³ However, these methodologies have been developed for varying purposes and not specifically for CEQA. Relying on 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 on-airport stationary sources, including heating/cooling; operational changes to surface traffic activity and surface traffic flows within the Airport area; construction and operation equipment; construction haul trips; and construction worker commute trips.
- ◆ Indirect Emissions: Indirect sources of GHG emissions related to the proposed project include the consumption of purchased electricity, solid waste disposal, water usage, and wastewater treatment.

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.¹³⁴ For these reasons, CARB requires 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) guidance for lead agencies conducting GCC analyses in CEQA documents indicates that lead agencies should "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."¹³⁵ Therefore, direct and indirect emissions have been calculated for the proposed project.

The proposed project would not change the number of airline passengers traveling to/through the Airport, or the number or nature of aircraft operations. Therefore, this analysis does not include increases in emissions from aircraft or associated emissions of auxiliary power units or ground support equipment.

4.2.2.1 Construction

GHG emissions associated with construction of the proposed project were calculated based on methodologies provided in The Climate Registry *General Reporting Protocol* (GRP) Version 2.1.¹³⁶ The GRP is the guidance

¹³⁰ The Climate Registry, [General Reporting Protocol, version 2.1](https://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/), January 2016, Available: <https://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/>, accessed January 20, 2017.

¹³¹ California Air Resources Board, [Local Government Operations Protocol, version 1.1](https://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf), Available: https://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf, accessed January 20, 2017.

¹³² Association of Environmental Professionals (AEP), [Forecasting Community-Wide Greenhouse Gas Emissions and Setting Reduction Targets](https://www.califaep.org/docs/AEP_Next_Steps_White_Paper.pdf), Available: https://www.califaep.org/docs/AEP_Next_Steps_White_Paper.pdf, accessed January 20, 2017.

¹³³ Airport Carbon Accreditation, [Greenhouse Gas Protocol](http://www.airportcarbonaccredited.org/airport/4-levels-of-accreditation/ghg-protocol.html), Available: <http://www.airportcarbonaccredited.org/airport/4-levels-of-accreditation/ghg-protocol.html>, accessed January 20, 2017.

¹³⁴ California Environmental Protection Agency, Air Resources Board, Planning and Technical Support Division Emission Inventory Branch, [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 \(Assembly Bill 32\)](#), October 19, 2007.

¹³⁵ State of California, Office of Planning and Research, [Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act \(CEQA\) Review](http://opr.ca.gov/docs/june08-ceqa.pdf), June 19, 2008, p. 5, Available: <http://opr.ca.gov/docs/june08-ceqa.pdf>, accessed April 2013.

¹³⁶ The Climate Registry, [General Reporting Protocol, Version 2.1](https://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/), January 2016, Available: <https://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/>, accessed January 20, 2017.

document that LAWA and other members of The Climate Registry must use to prepare annual GHG inventories for the Registry. Therefore, for consistency, the GRP also was used in this impact analysis. However, to adapt the GRP for CEQA purposes, a refinement to the GRP operational and geographical boundaries was necessary. The GRP requires all emissions to be reported, as well as all direct and indirect emissions owned or controlled by the reporting entity (in this case, LAWA).

In accordance with SCAQMD guidance, GHG emissions from construction have been amortized over the 30-year lifetime of the proposed project to enable comparison to SCAQMD and LA CEQA thresholds of significance (i.e., total construction GHG emissions were divided by 30).¹³⁷

The proposed project-related construction sources for which GHG emissions were calculated include:

- ◆ Off-road construction equipment;
- ◆ On-road equipment and delivery/haul trucks; and
- ◆ Construction worker trips.

The parameters used to develop construction GHG emissions for these sources, including construction schedule, equipment usage, and load factors, are the same as those outlined for the construction criteria air pollutant emissions analysis, presented in Section 4.1, *Air Quality and Human Health Risk*, Section 4.1.1.3, with supporting information presented in Appendix B.1.1 of this Draft EIR.

4.2.2.2 Operations

With the additional square footage being added to the terminal as a result of the project, yearly operational GHG emissions associated with increased electrical demand for heating/cooling, and lighting of the additional building area would occur: see Chapter 6, *Other Environmental Considerations*. Additionally, the proposed project would be designed and constructed to meet the City of Los Angeles Green Building Code (LAGBC) Tier 1 requirements and incorporate energy reducing U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) Silver level of sustainability measures, which will reduce these demands substantially compared with the existing facility. As a result, operations-related GHG emissions due to increased energy demands were assessed for the proposed project as compared to existing conditions.

4.2.3 Existing Conditions

4.2.3.1 Regulatory Setting

4.2.3.1.1 International and Federal Plans, Policies, and Regulations

International Governmental Panel on Climate Change (IPCC)

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 adaption and mitigation.” The initial task for the IPCC was to prepare a comprehensive review and recommendations with respect to the state of knowledge of the science of climate change; the social and economic impact of climate change, and possible response strategies and elements for inclusion in a possible future international convention on climate. Since its inception, the IPCC has delivered five comprehensive scientific reports about climate change, with the latest (the Fifth Assessment Report) released in four parts between September 2013 and November 2014.¹³⁸

¹³⁷ South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, p. 3-9.

¹³⁸ Intergovernmental Panel on Climate Change, History, Available: https://www.ipcc.ch/organization/organization_history.shtml, accessed November 18, 2015.

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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.¹³⁹

Kyoto Protocol

The Kyoto Protocol is a treaty made under the UNFCCC. Countries can sign the treaty to demonstrate their commitment to reduce their emissions of 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 Kyoto Protocol in 1998. However, in order for the Kyoto 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, 2020.¹⁴⁰

Massachusetts et al. v. Environmental Protection Agency et. al.

Massachusetts et al. v. Environmental Protection Agency et. al. (549 U.S. 497 [2007]) found that that the USEPA has statutory authority to regulate emissions of GHGs from motor vehicles, and that it had not justified its non-use of that authority in response to a petition to regulate GHG emissions from motor vehicles.¹⁴¹

Endangerment Finding

The USEPA subsequently published its endangerment finding for GHGs in the Federal Register,¹⁴² which responds to the court case noted above. 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: CO₂, CH₄, N₂O, 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). On July 25, 2016, the USEPA made two findings under section 231(a)(2)(A) of the Clean Air Act (CAA) that: (1) concentrations of six well-mixed GHGs in the atmosphere endanger the public health and welfare of current and future generations (the endangerment finding), and (2) GHGs emitted from certain classes of engines used in certain aircraft are contributing to the air pollution—the mix of those six GHGs in the atmosphere—that endangers public health and welfare.¹⁴³

GHG and Fuel Efficiency Standards for Passengers 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, CO₂ emission limits would decrease from 295 grams per miles (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

¹³⁹ United Nations Framework Convention on Climate Change, Available: <http://unfccc.int/2860.php>, accessed November 18, 2015.

¹⁴⁰ United Nations Framework Convention on Climate Change, Kyoto Protocol, Available: http://unfccc.int/kyoto_protocol/items/2830.php, accessed November 18, 2015.

¹⁴¹ Supreme Court of the United States, Massachusetts et al. v. Environmental Protection Agency et. al., Available: <http://www.supremecourt.gov/opinions/06pdf/05-1120.pdf>, accessed November 18, 2015.

¹⁴² U.S. Environmental Protection Agency, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, Federal Register Vol. 74, No. 239, December 15, 2009, pp. 66496-66546.

¹⁴³ U.S. Environmental Protection Agency, Regulatory Announcement, EPA Finalizes First Steps to Address Greenhouse Gas Emissions from Aircraft Engines, July 2016, Available: <https://www3.epa.gov/otaq/documents/aviation/420f16036.pdf>, accessed August 3, 2016.

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 2025.¹⁴⁴

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' standards reduce GHG emissions by 270 metric tons and to reduce oil consumption by 530 million barrels over the life of the affected vehicles.¹⁴⁵

4.2.3.1.2 State Plans, Policies, and Regulations

The legal framework for GHG emission reduction has come about through Executive Orders, legislation, and regulation. The major components of California's climate change initiatives are reviewed below.

California Environmental Quality Act and Senate Bill (SB) 97

CEQA requires lead agencies to consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions have the potential to adversely affect the environment because they contribute to global climate change. In turn, global climate change has the potential to raise sea levels, affect rainfall and snowfall, and affect habitat.

SB 97

SB 97, enacted in August 2007, 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 incomplete EIR, negative declaration, mitigated negative declaration, or other related document, and are reflected in this EIR.¹⁴⁶

CEQA Guidelines

CEQA Guidelines Section 15064.4 specifically addresses the significance of GHG emissions. Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of (1) the extent to which the project may increase or reduce GHG emissions; (2) whether the project emissions would exceed a locally applicable threshold of significance; and (3) the extent to which the project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The revisions also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (CEQA Guidelines Section 15064(h)(3)). The CEQA Guidelines revisions do not, however, set a numerical threshold of significance for GHG emissions.

¹⁴⁴ U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks, April 2010, Available: <http://www3.epa.gov/otaq/climate/regulations/420f10014.pdf>, accessed November 18, 2015.

¹⁴⁵ U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Adopt First-Ever program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011, Available: <http://www3.epa.gov/otaq/climate/documents/420f11031.pdf>, accessed November 18, 2015.

¹⁴⁶ California Senate Bill 97, August 24, 2007.

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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 November 2013 and went into effect on July 1, 2014.¹⁴⁷ 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.

Green Building Standards

The 2013 California Green Building Standards Code (24 CCR Part 11, CalGREEN) took effect January 1, 2014. The Green Building Standards, as updated (2016), require that every new building constructed in California reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low-pollutant-emitting materials. They also require separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects and mandatory inspections of energy systems (e.g., heat furnace, air conditioner, and mechanical equipment) for nonresidential buildings larger than 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies.

California Assembly Bill 1493 (AB 1493) – Pavley

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 through 2016 vehicles. CARB estimated that the regulation would 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.¹⁴⁸ Emission estimates included in this analysis account for the Pavley standards.

California Advanced Clean Cars/Zero Emission Vehicle Program

In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars (13 CCR 1962.1 and 1962.2). The Advanced Clean Cars requirements include new GHG standards for model year 2017 to 2025 vehicles.

The Advanced Clean Cars Program also includes the LEV III amendments to the LEV regulations (13 CCR 1900 et seq.), Zero Emission Vehicle Program, and the Clean Fuels Outlet Regulation. The Zero Emission Vehicle Program is designed to achieve California's long-term emission reduction goals by requiring manufacturers to offer for sale specific numbers of the very cleanest cars available. These zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles, are just beginning to enter the marketplace. They are expected to be fully commercial by 2020. The Clean Fuels Outlet regulation ensures that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to market.

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

¹⁴⁷ 2016 Energy Standards were made in June 2015 and have gone into effect on January 1, 2017.

¹⁴⁸ California Environmental Protection Agency, Air Resource Board, [EPA, DOT and California Align Timeframe for Proposing Standards for Next Generation of Clean Cars](http://www.arb.ca.gov/newsrel/newsrelease.php?id=181), Available: <http://www.arb.ca.gov/newsrel/newsrelease.php?id=181>, accessed November 19, 2015.

2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.¹⁴⁹

Executive Order B-30-15

California Governor Edmund G. Brown issued Executive Order B-30-15 to reduce California GHG emissions to 40 percent below 1990 levels by 2030.¹⁵⁰

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 equivalent of those in 1990 by 2020. CARB adopted regulations in December 2007 for mandatory GHG emissions reporting. In December 2008, CARB approved the AB 32 Climate Change Scoping Plan (Scoping Plan) outlining the state's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify California's energy sources, save energy, create new jobs, and enhance public health. On August 24, 2011, the Scoping Plan was re-approved by CARB, including the final supplement to its functional equivalent document, as required by CEQA. The First Update to the Scoping Plan, which will guide the continued development and implementation of the state's efforts to fight climate change, was approved by CARB on May 22, 2014.

Part of the Scoping Plan includes an economy-wide cap-and-trade program, which sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and established a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest-cost options to reduce emissions. The final cap-and-trade plan was approved on October 21, 2011 and went into effect on January 1, 2013.¹⁵¹

At the time of Draft EIR preparation, CARB was preparing an update to the Scoping Plan to reflect the Executive Order B-30-15 and SB 32 GHG reduction target of 40 percent below 1990 levels by 2030.

California Senate Bill 32 (SB 32)

SB 32 California Global Warming Solutions Act of 2006 (Pavley) was approved in 2016. SB 32 requires the ARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 statewide GHG emissions limit no later than December 31, 2030. The ARB recently released a draft strategy for achieving that goal,¹⁵² which takes into account the key programs associated with implementation of the AB 32 Scoping Plan, such as GHG reduction programs for cars, trucks, fuels, industry, and electrical generation, and builds upon, in particular, existing programs related to the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, much cleaner cars, trucks and freight movement, power generation for the State using cleaner renewable energy, and strategies to reduce methane emissions from agricultural and other wastes by using it to meet the State's energy needs.

California Senate Bill 375 (SB 375)

Under SB 375, each metropolitan planning organization (MPO) in the state is required to develop Sustainable Community Strategies through integrated land use and transportation planning and to attain per capita GHG reduction targets for passenger vehicles set by CARB by 2020 and 2035.¹⁵³ CARB issued an eight percent per capita reduction target for the SCAG region for 2020 and a target of 13 percent per capita reduction by 2035. SCAG

¹⁴⁹ California Executive Order S-3-05, June 1, 2005.

¹⁵⁰ California Executive Order B-30-15, April 29, 2015.

¹⁵¹ California Assembly Bill 32, September 27, 2006.

¹⁵² California Air Resources Board, [The 2017 Climate Change Scoping Plan Update – The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target](#), January 20, 2017.

¹⁵³ California Senate Bill 375, September 30, 2008.

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adopted the latest Regional Transportation Plan/Sustainable Community Strategies for the six-county Southern California region on April 7, 2016.

Executive Order S-01-07 and the Low Carbon Fuel Standard

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 Low Carbon Fuel Standard (LCFS) for transportation fuels. The LCFS requires that the lifecycle 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.¹⁵⁴

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) Portfolio 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 established 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 data available from the Los Angeles Department of Water and Power (LADWP), the utility provider for the City of Los Angeles, approximately 20 percent of its electricity purchases in 2014 were from eligible renewable sources.¹⁵⁵ SB 350 of 2015 (Chapter 547, Statutes of 2015) increased the renewable portfolio standard to 50 percent by the year 2030.

4.2.3.1.3 Regional Plans, Policies, and Regulations

SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

SCAG adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) on April 4, 2012, and subsequent amendments of project lists were approved on June 6, 2013 and September 11, 2014. The 2012-2035 RTP/SCS aimed to reduce emissions from transportation sources to comply with SB 375 and meet SB 375 regional GHG emission reduction targets for light duty vehicles, improve public health, and reduce air emissions. On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 RTP/SCS.¹⁵⁶ The 2016-2040 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The Plan charts a course for closely integrating land use and transportation. It outlines more than \$556.5 billion in transportation system investments through 2040.

Los Angeles Department of Water and Power Plan

The Los Angeles Department of Water and Power (LADWP) has developed an extensive strategy to reduce emissions from power plants which provide electrical power to the basin. In the 2015 Power Integrated Resource

¹⁵⁴ 17 California Code of Regulations, Section 95480 et seq., Low Carbon Fuel Standard.

¹⁵⁵ City of Los Angeles, Los Angeles Department of Water and Power, Power Content Label, Available: https://ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-powercontentlabel;jsessionid=ZfB2XLXbyvcG28SPmnTRBgJnvNTdbqwQpy0jJF8F8yJyyrpk3TFv!194919507?_adf.ctrl-state=19x1t2m6hw_4&_afLoop=455491631176092&_afWindowMode=0&_afWindowId=null#%40%3F_afWindowId%3Dnull%26_afLoop%3D455491631176092%26_afWindowMode%3D0%26_adf.ctrl-state%3Dcxq9wd2qh_4, accessed November 30, 2015.

¹⁵⁶ Southern California Association of Governments, Final 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life, Adopted April 7, 2016, Available: <http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx>, Accessed January 19, 2017.

Plan, LADWP lays out a distinct strategy and framework for reducing reliance on coal-generated power through the selling off of its two largest coal-burning facilities in 2016 and 2025 respectively. These two facilities currently represent 40 percent of LADWP's total power generation. Additionally, LADWP will be increasing its renewable portfolio from 20 percent to 50 percent of its total provided power by 2030. This plan will result in substantial decreases in regional GHG emissions associated with regional electrical power demand.

4.2.3.1.4 Local Plans, Policies, and Regulations

Green LA

In May 2007, the City of Los Angeles introduced *Green LA – An Action Plan to Lead the Nation in Fighting Global Warming* (Green LA).¹⁵⁷ Green LA presents a framework targeted to reduce the City's GHG emissions by 35 percent below 1990 levels by 2030. The plan calls for an increase in the City's use of renewable energy to 35 percent by 2020 in combination with promoting water conservation, improving the transportation system, reducing waste generation, greening the ports and airports, creating more parks and open space, and greening the economic sector. Green LA identifies objectives and actions in various focus areas, including airports. The goal for LA's airports is to "green the airports," and the following actions are identified: 1) fully implement the Sustainability Performance Improvement Management System; 2) develop and implement policies to meet 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) evaluate options to reduce aircraft-related GHG emissions.¹⁵⁸

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* (Climate LA).¹⁵⁹ A Departmental Action Plan for LAWA is included in Climate LA, which identifies goals to reduce CO₂ 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 aircraft operations, ground vehicles, electrical consumption, building, and other actions.

Executive Directive No. 10

As part of the City's efforts to reduce GHG emissions and promote long-term sustainability, in July 2007, Mayor Antonio Villaraigosa issued Executive Directive No. 10 regarding environmental stewardship practices. Consistent with the goal specified in Green LA to make the City of Los Angeles a worldwide leader in green buildings, Executive Directive No. 10 requires that City departments, including LAWA, create and adopt a "Statement of Sustainable Building Policies," which should encompass sustainable design, energy and atmosphere, materials, and resources, water efficiency, landscaping, and transportation resources. In addition, City departments and offices must create and adopt sustainability plans that include all the policies, procedures, programs, and policies that are designed to improve internal environmental efficiency. Finally, City departments are required to submit annual sustainability reports to the Mayor for review.¹⁶⁰ Climate LA, which was adopted subsequent to Executive Directive No. 10 also includes the goals supportive of green building and energy efficiency through building design and retrofits.

Sustainable City Plan

In 2014, Mayor Eric Garcetti launched LA's first-ever Sustainable City Plan ("pLAN"). The pLAN is a comprehensive and actionable policy roadmap that prepares the City for an environmentally healthy, economically prosperous, and equitable future for all. Mayor Garcetti released the pLAN in April 2015 along with a corresponding Executive Directive (ED-#5) that incorporates the pLAN into city-wide management. The framework of pLAN includes 14

¹⁵⁷ City of Los Angeles, [Green LA - An Action Plan to Lead the Nation in Fighting Global Warming](#), May 2007.

¹⁵⁸ City of Los Angeles, [Green LA - An Action Plan to Lead the Nation in Fighting Global Warming](#), May 2007.

¹⁵⁹ City of Los Angeles, [Climate LA - Municipal Program Implementing the Green LA Climate Action Plan](#), 2008.

¹⁶⁰ City of Los Angeles, Antonio R. Villaraigosa, Mayor, [Executive Directive No. 10, Subject: Sustainable Practices in the City of Los Angeles](#), July 18, 2007.

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chapters, each of which sets forth a vision of things to be accomplished in the next 20 years and highlighted near- and long-term outcomes. Relative to Environment, the pLAN focuses on local water, local solar, energy-efficient buildings, carbon and climate leadership, and waste and landfills. Through the pLAN Mayor Garcetti committed the City to becoming a national leader in carbon reduction and climate action by eliminating coal from the City's energy mix, prioritizing energy efficiency, and inspiring other cities to take similar action. The Plan sets targets of reducing GHG emissions below 1990 levels by at least 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050.

City of Los Angeles Green Building Code (LAGBC)

In December 2013, the Los Angeles City Council approved Ordinance No. 182,849, which updated Chapter IX of the Los Angeles Municipal Code (LAMC) by amending certain provisions of Article 9 to incorporate by reference portions of the 2013 CALGreen Code and also added other miscellaneous conservation-related measures to the LAGBC for residential and non-residential development. The requirements of the adopted LAGBC, as updated (2016), 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 Los Angeles Green Building Code Tier 1 standards, which are applicable to all projects with a LADBS permit-valuation over \$200,000, require the proposed project to implement a number of measures that would reduce criteria pollutant and GHG emissions. These include measures similar to: reduce vehicle and equipment idling times; comply with Tier 4 emission standards for non-road diesel equipment; retrofit existing diesel equipment with particulate filters and oxidation catalysts; replace aging equipment with new low-emission models; and consider the use of alternative fuels for construction equipment.

LAWA Sustainability Plan

LAWA's Sustainability Plan,¹⁶¹ developed in April 2008, describes LAWA's current sustainability practices and sets goals and actions that LAWA will undertake to implement the initiatives described above (Green LA, Climate LA, and LAGBC). The Sustainability Plan presents initiatives for the fiscal year 2008-2009 and long-term objectives and targets to meet the fundamental objectives identified above. Included in those targets is Target 5A – *Reduce GHG emissions levels to 35% below 1990 levels by 2030.*

LAWA Sustainable Airport Planning, Design and Construction Guidelines

In 2008, LAWA developed *Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects* (LAWA Guidelines), which were subsequently updated in 2009 and 2010.¹⁶² The LAWA Guidelines were developed to provide a comprehensive set of performance standards focusing on sustainability specifically for Airport projects on a project-level basis. A portion of the LAWA Guidelines is based on the LEED® rating systems for buildings. The LAWA Guidelines incorporate a "LAWA-Sustainable Rating System" based on the number of planning and design points and construction points a project achieves, based on the criteria and performance standards defined in the LAWA Guidelines, which is similar to LEED®.

Based on the above, LAWA implemented numerous steps to increase its sustainability practices related to daily Airport operations, many of which directly or indirectly contributed to a reduction in GHG emissions. Actions that LAWA undertook included promoting and expanding non-stop shuttle services to the Airport in an effort to reduce the number of vehicle trips to the Airport, establishment of an employee Rideshare Program, use of alternative fuel vehicles, purchasing renewably generated Green Power from LADWP, and reducing electricity consumption by installing energy-efficient lighting, variable demand motors on terminal escalators, and variable frequency drives on fan units at terminals and LAWA buildings.¹⁶³

LAWA also utilizes the LAGBC, described above, in integrating sustainability features into new development and redevelopment projects at LAX. All building projects in the City of Los Angeles are subject to the LAGBC, which is

¹⁶¹ City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Plan, April 2008.

¹⁶² City of Los Angeles, Los Angeles World Airports, Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects, Version 5.0, February 2010.

¹⁶³ City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Report 2015, Available: http://www.laxsustainability.org/documents/Sustainability_Report_2015.pdf, accessed September 6, 2016.

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 Los Angeles Municipal Code, 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 inspector during final plan check (on the issued building permit) and validated by the LADBS inspector during final inspection (on the Certificate of Occupancy). Tier-1 refers to specific practices that are to be incorporated into projects to “achieving enhanced construction levels by incorporating additional green building measures.” 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.

LAWA Commitment to Carbon Management Goals

In August 2016, LAWA adopted an internal commitment to reduce GHG emissions from LAWA owned and operated sources below 1990 levels 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050.¹⁶⁴ Additionally, LAWA has successfully completed the Airport Carbon Accreditation (ACA) program through the Airport Council International (ACI) to achieve certification at “Level 2 Reduction.”¹⁶⁵ Airports are certified under ACA at four progressively stringent levels of participation with recognition of improvements at each stage. The first stage, Level 1 *Mapping*, requires airports to produce a Scopes 1 and 2 “carbon footprint” for the airport, along with evidence of a publicly available environmental/carbon policy endorsed at the highest level of airport management. Independent verification of an airport’s carbon footprint is required on entry into the program, and then again every two years on renewal at the same level, or upon each upgrade. The ACA program notes that the carbon footprint serves as the basis for developing carbon management and engagement plans (Level 2 *Reduction* and Level 3 *Optimization*). Through the plans, ACA expects that an airport then commits to reduce its annual carbon footprint at these levels. An airport may then also seek to achieve carbon neutrality for the carbon dioxide (CO₂) emissions under its direct control (Scope 1 and 2) by offsetting its residual emissions which it cannot reduce by other means (Level 3+ *Neutrality*).

It is important to note that LAWA’s internal commitment to the GHG emissions reduction goals identified above, as reflected in the ACI certification that LAWA has achieved for Level 2 Reduction, takes into account a wide array of existing and anticipated GHG reduction programs and improvements, which will continue to be implemented and may be refined, adjusted, and added to by LAWA in the course of achieving the goals set for 2025, 2035, and 2050. Examples of such GHG reduction programs and improvements for LAWA owned and operated sources that are specifically mentioned in the application for the ACI certification include, but are not limited to, the following:

- ◆ LAWA’s Clean Fleet Program. LAWA introduced alternative fuel technology to its fleet in 1993. LAWA currently operates the nation’s largest alternative-fuel airport fleet consisting primarily of CNG, LNG, propane, full-electric, and hybrid-electric vehicles. In the coming years, LAWA intends to replace its standard gasoline engine vehicles and retired CNG vehicles with electric vehicles. LAWA is also embarking on a campus-wide EV infrastructure study to support greater deployment of EV vehicles.
- ◆ Solar Feasibility Study. In 2015, LAWA launched a solar feasibility study for LAX to identify locations for the installation of photovoltaic solar energy at LAX to replace or supplement the use of purchased electricity. LAWA estimates that for every megawatt of solar installed at LAX, over 800 metric ton of CO₂ can be saved.
- ◆ Green Power Purchase. LAWA has been purchasing green power from LA DWP for several years. More specifically, LAWA purchased 19.1 million kWh of green power in 2015, 20.9 million kWh in 2014, and 28 million kWh in 2013.¹⁶⁶ In 2015 and for several prior years, LAWA has made the “EPA and Green Partnership, Top 30 Local Government” list.

¹⁶⁴ Memorandum from Deborah Flint, Chief Executive Officer, Los Angeles World Airports, [LAWA’s Commitment to Carbon Management Goals](#), August 31, 2016.

¹⁶⁵ Los Angeles World Airports, [News Release](#), September 27, 2016. Available at: <https://www.lawa.org/newsContent.aspx?ID=2236>, accessed on January 20, 2017.

¹⁶⁶ LAWA also purchased green power in 2016; however, the year-end total has not yet been tabulated.

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- ◆ Lighting Retrofit Projects. LAWA continues to replace lights and fixtures that serve terminals, streets, parking lots, and the airfield at LAX with a mix of energy efficient equipment. This project will continue for several years.
- ◆ Energy Efficiency Projects. LAWA continues to upgrade air-handling equipment and perform regular maintenance to improve energy efficiency of air handling units. LAWA replaces old computers and related equipment with Energy Star certified office equipment.
- ◆ The Utility Monitoring Infrastructure Project (UMIP). LAWA is in the midst of a program to add sub-meters for utilities across the LAX campus. One of the goals of the project is to allow LAWA to monitor energy usage at each of its facilities at the building level. Currently, LAWA can able to monitor electricity and natural gas consumption via the utility providers' invoices and meters, but these meters do not always correspond to a single structure.
- ◆ LAWA recently replaced the Central Utility Plant (CUP) at LAX. The new CUP is a state-of-the-art computerized facility that provides heating and cooling for the Central Terminal Area at LAX, and includes a co-generation system that simultaneously generates electrical power and steam. This process is anticipated to reduce fuel usage by at least 30 percent compared to separate electricity and heating processes. LAWA and LADWP estimated that the plant saved approximately 4,458,729 kWh in 2015, with an associated reduction in GHG emissions.

In addition to the above, the continued implementation of LAWA's sustainability programs, including the LAWA Sustainability Plan and the LAWA Sustainable Airport Planning, Design and Construction Guidelines, as well as LAWA's requirement that all building projects with an LADBS permit-valuation over \$200,000 shall achieve Los Angeles Green Building Code Tier-1 conformance, will support LAWA's ability to achieve its carbon management goals.

In summary, LAWA's internal commitment to reduce GHG emissions from LAWA owned and operated sources will be implemented through a variety of programs and improvements to be implemented through 2025, 2035, and 2050 including, but not limited to, those described above. The GHG reduction goals reflected in that commitment are not intended or designed to be applied on an individual project-by-project basis.

4.2.3.2 Existing Greenhouse Gas Setting

According to the IPCC in 2007, worldwide man-made emissions of GHGs were approximately 40,000 million metric tons of CO₂e (MMTCO₂e), including ongoing emissions from industrial and agricultural sources, but excluding emissions from land use changes (i.e., deforestation, biomass decay). Total U.S. GHG emissions in 2013 were 6,673 MMTCO₂e, or about 15 percent of worldwide GHG emissions.¹⁶⁷

California, due in part to its large size and large population, is a substantial contributor of global GHGs, and is the second largest contributor to GHG emissions in the United States (Texas is number one). As mandated by the Global Warming Solutions Act of 2006 (AB 32), CARB is required to compile GHG inventories for the State of California, including establishment of the 1990 Greenhouse Gas Emissions Level. Inventories have been prepared for 2000 through 2014. Based on the 2014 GHG inventory data (i.e., the latest year for which data are available), California emitted 441.5 MMTCO₂e *including* emissions resulting from imported electrical power and approximately 405 MMTCO₂e *excluding* emissions related to imported power.¹⁶⁸ **Table 4.2-2** identifies and quantifies statewide anthropogenic GHG emissions and sinks in 1990 and 2014. By contrast, California had the fourth lowest CO₂ emissions per capita from fossil fuel combustion in the U.S., due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.¹⁶⁹

¹⁶⁷ U.S. Environmental Protection Agency, [Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013](http://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Main-Text.pdf), April 15, 2015, Available: www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Main-Text.pdf, accessed November 30, 2015.

¹⁶⁸ California Air Resources Board, [California Greenhouse Gas Inventory for 2000-2014 - by Category as Defined in the 2008 Scoping Plan](https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2000-14.pdf), March 30, 2016, Available: https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2000-14.pdf, accessed September 2, 2016.

¹⁶⁹ U.S. Energy Information Administration, [Energy-Related Carbon Dioxide Emissions at the State Level, 2000-2013](http://www.eia.gov/state/guide/), October 2015.

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**Table 4.2-2
State of California GHG Emissions^{1/}**

Category	Total 1990 Emissions (Mmtco ₂ e)	Percent of Total 1990 Emissions	Total 2014 Emissions (Mmtco ₂ e)	Percent of Total 2014 Emissions
Transportation	150.7	35%	159.5	36%
Electric Power	110.6	26%	88.2	20%
Commercial	14.4	3%	14.6	3%
Residential	29.7	7%	23.7	5%
Industrial	103.0	24%	93.3	21%
Recycling and Waste	-- ^{2/}	-- ^{2/}	8.9	2%
High GWP/Non-Specified ^{3/}	1.3	<1%	17.1	4%
Agriculture	23.4	5%	36.1	8%
Forestry	0.2	<1%	-- ^{4/}	-- ^{4/}
Forestry Sinks	-6.7	--	-- ^{4/}	-- ^{4/}
Net Total	426.6	100%	441.5	100%

Notes:
1/ Numbers may not add up exactly due to rounding.
2/ Included in other categories for the 1990 emissions inventory.
3/ High GWP gases are not specifically called out in the 1990 emissions inventory.
4/ Revised methodology under development (not reported for 2014).
Sources: California Air Resources Board, Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, November 16, 2007, Available: http://www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf, accessed November 2015; California Air Resources Board, California Greenhouse Gas Inventory for 2000-2014 – by Category as Defined in the 2008 Scoping Plan, March 30, 2016, Available: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2000-14.pdf, accessed August 2, 2016.
Prepared By: CDM Smith, August 2016.

Between 1990 and 2010, the population of California grew by approximately 7.5 million (29.8 to 37.3 million).¹⁷⁰ This represents an increase of approximately 25 percent from 1990 population levels. In addition, the California economy, measure as gross state product, grew from \$773 billion in 1990 to 1.97 trillion in 2010 representing an increase of approximately 154 percent (over twice the 1990 gross state product).¹⁷¹ Despite the population and economic growth, California's net GHG emissions only grew by approximately 6 percent. The California Energy Commission attributes the slow rate of growth to the success of California's renewable energy programs and its commitment to clean air and clean energy.¹⁷²

The baseline operational emissions (2016) associated with the energy demands of the existing T2/T3 facilities are shown in **Table 4.2-3**.

¹⁷⁰ California Department of Finance, Demographic Research Unit, Report E-5 Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011–2015 with 2010 Benchmark, May 1, 2015.

¹⁷¹ California Department of Finance, Gross Domestic Product, California, Available: http://www.dof.ca.gov/Forecasting/Economics/Indicators/Gross_State_Product/, accessed September 11, 2016. Estimated gross state product for 1990 and 2010 are based on current dollars as of June 2016.

¹⁷² California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004, December 2006.

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**Table 4.2-3
2016 Baseline Energy-Related Operational GHG Emissions for Terminals 2 and 3**

Emission Source	Annual Emissions (Metric Tons CO ₂ e ^{1/} per Year)			
	CO ₂	CH ₄	N ₂ O	Total (CO ₂ e) ^{2/}
Area ^{2/}	<1	<1	<1	<1
Energy	6,286	<1	<1	6,301
Total^{3/}	6,286	<1	<1	6,301

Notes:
 CO₂e = carbon dioxide equivalent
 CO₂ = carbon dioxide
 CH₄ = methane
 N₂O = nitrous oxide
 1/ CO₂e emissions are determined by multiplying the individual pollutant emissions by its respective GWP. The GWP for CH₄ is 25 and the GWP for N₂O is 298.
 2/ Area emissions are generated by operations associated with maintenance of the facility.
 3/ Totals may not add exactly because of rounding.
 Source: Appendix B 2.1 of this EIR.
 Prepared By: CDM Smith, August 2016.

4.2.4 Thresholds of Significance

For the purposes of the LAX T2/T3 Modernization Project (proposed project) EIR analysis, and in accordance with Appendix G of the State CEQA Guidelines, environmental impacts related to GHG emissions are considered significant if the proposed project would:

- ◆ Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- ◆ Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs

4.2.4.1 Quantitative Threshold

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 thresholds 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 SCAQMD nor the City of Los Angeles have yet established project-level specific quantitative significance thresholds for GHG emissions. State CEQA Guidelines Section 15183.5 encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform any individual project analyses. However, the City of Los Angeles has not developed a Greenhouse Gas Reduction Plan meeting the requirements set forth in State CEQA Guidelines Section 15183.5.

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.¹⁷³ For industrial projects where SCAQMD is the lead agency, the SCAQMD's adopted threshold is 10,000 metric tons of carbon dioxide equivalent per year (MTCO₂e/yr). Selection of 10,000 MTCO₂e/yr as a mass emissions threshold of significance for industrial projects was based largely on the GHG emission associated with the natural gas consumption characteristics of numerous facilities evaluated by the SCAQMD. Selection of that threshold for industrial projects also took into

¹⁷³ South Coast Air Quality Management District, Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group Meeting #8, Diamond Bar, January 28, 2009, Available: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-8/ghg-meeting-8-minutes.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-8/ghg-meeting-8-minutes.pdf?sfvrsn=2), Accessed January 19, 2017.

consideration that industrial facilities typically containing stationary source equipment are largely permitted or regulated by the SCAQMD, consequently providing some ability to directly address GHG emissions. At this time, this adopted threshold applies to only industrial projects where the SCAQMD is the lead agency. While SCAQMD is not the lead agency for the proposed T2/T3 Modernization Project, the main source of GHG emissions associated with the proposed project is considered to be comparable to that of a stationary industrial source, as was the primary source of interest in the SCAQMD’s establishment of that GHG threshold. Specifically, the main source of GHG emissions for the proposed project is the increased energy demand associated with the additional building area developed for the project, and the energy provided to meet that increased demand would be primarily from a power plant(s) (i.e., stationary industrial source of GHG emissions). As a result, for the purposes of this analysis, the adopted 10,000 MTCO₂e/yr threshold was used.

4.2.4.2 Plan Consistency Threshold

This EIR also uses a second “plan consistency” impact significance threshold. The proposed project’s GHG emission would be significant if they conflict with an applicable state regional, or local plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

4.2.5 Impacts Analysis

4.2.5.1 Project GHG Emissions

4.2.5.1.1 Construction Emissions

Annual GHG emissions for construction of the proposed project are presented in **Table 4.2-4**, which, as indicated in the table, would total 23,659 MTCO₂e. As noted in Section 4.2.2.1, construction emissions were amortized over the lifetime of the proposed project, which is assumed to be 30 years. The total CO₂e amortized over the life of the proposed project construction is equal to 789 MTCO₂e per year. See Appendix B.1.1 for detailed calculations.

**Table 4.2-4
Construction Greenhouse Gas Emissions for the Proposed Project (MTY)**

Emission Source	2017	2018	2019	2020	2021	2022	2023
Off-Road, On-Site Equipment	443	1,371	875	692	2,091	1,345	1,089
On-Road, On-Site Trucks	63	281	438	932	1,220	2,148	2,066
On-Road, Off-Site Workers	128	497	848	1,278	658	1,071	771
On-Road, Off-Site Deliveries	18	54	44	123	184	190	175
On-Site Hauling Staging	0	46	13	49	101	89	80
On-Site Hauling Batching	36	38	0	292	596	566	567
Parking, On-Site	2	9	15	23	12	19	13
All Sources (Metric Tons):	690	2,296	2,233	3,389	4,861	5,428	4,762

Source: Appendix B.1.1 of this EIR
Prepared By: CDM Smith, August 2016.

4.2.5.1.2 Operational Emissions

A comparison of emissions from the 2023 proposed project to the 2016 existing conditions is shown in **Table 4.2-5**. As shown, the incremental emissions between the 2016 existing conditions and the implementation of the 2023 proposed project scenario are a net increase in CO₂e. With the addition of the amortized construction emissions, the proposed project’s total annual emissions increase of 4,551 MTCO₂e/yr remain well below the 10,000 MTCO₂e/yr threshold. Therefore, using this threshold, GHG emissions resulting from the construction and operations of the proposed project would not result in a significant impact on climate change over the 2016 existing conditions.

4.2 Greenhouse Gas Emissions

**Table 4.2-5
Amortized Construction and Operational Greenhouse Gas Emissions for the
Proposed Project as Compared with the 2016 Baseline (MTY)**

Emissions Source	2016 Baseline	2023 Proposed project	Incremental Difference
Area ^{1/}	<1	<1	0
Energy	6,301	10,852	4,551
Total Operational ^{2/}	6,301	10,852	4,551
Amortized Construction	-	789	789
Total Net ^{2/}	6,301	11,641	5,341

Notes:
CO₂e = carbon dioxide equivalent
1/ Area emissions are generated by operations associated with maintenance of the facility.
2/ Totals may not add exactly because of rounding.
Source: Appendix B.2.1 of this EIR.
Prepared By: CDM Smith, August 2016.

4.2.5.1.3 Detailed Analysis

The operational emissions detailed above were calculated using CalEEMod2016.3.1 default values for the proposed project; however, the model has several features that result in an overly conservative analysis. First, CalEEMod2016.3.1 uses the 2013 update to Title 24 rather than the most recent revision in 2016 for the purposes of operational energy calculations. Additionally, the above analysis assumes that the existing terminal area was constructed in such a way to comply with all current emissions standards including the 2013 revision to Title 24. The existing terminal, rebuilt for the 1984 Olympics in Los Angeles, likely does not meet Title 24 requirements leading to an overly conservative (low) baseline. Thus, a revised analysis was conducted. The baseline was recalculated to represent the terminals operating without Title 24 emissions reductions. Additionally, CalEEMod is limited in its use of default 2010 electrical generation GHG emission factors, as a result the proposed project was modified such that the LADWP reductions in CO₂ emissions due to increased renewable portfolio and divestment of coal power, as well as 2016 Title 24 revisions, were accounted for. This analysis is provided for disclosure purposes in Table 4.2-6.

**Table 4.2-6
Amortized Construction and Revised Operational Greenhouse Gas Emissions for
Proposed Project as Compared with Revised 2016 Baseline (MTY)**

Emissions Source	2016 Baseline	2023 Proposed project	Incremental Difference
Area ^{1/}	<1	<1	0
Energy	7,709	8,011	302
Total Operational ^{2/}	7,709	8,011	302
Amortized Construction	-	789	789
Total Net ^{2/}	7,709	8,800	1,091

CO₂e = carbon dioxide equivalent
1/ Area emissions are generated by operations associated with maintenance of the facility.
2/ Totals may not add exactly because of rounding.
Source: Appendix B.2.1 of this EIR. Prepared By: CDM Smith, August 2016.

It should be noted that from an energy efficiency standpoint, implementation of the proposed project would result in a much more energy efficient building, on a per-square-foot basis, than what currently exists at the project site; which, in turn, results in much lower GHG emissions on a per-square-foot basis. Based on the existing total building area of 788,031 square feet with the 2016 Baseline GHG emissions of 7,709 MTY indicated above in Table 4.2-6, the per-square-foot GHG emissions are approximately 19.6 pounds per year. By comparison, the proposed project's total building area of 1,620,010 square feet with the 2023 Proposed Project GHG emissions of 8,011 MTY indicated above in Table 4.2-6, the per-square-foot GHG emissions would be approximately 9.9 pounds per year.

4.2.5.2 Consistency with Greenhouse Gas Reduction Plans

4.2.5.2.1 Local

Implementation of the proposed project would not conflict with local plans, policies, and regulations adopted for the purpose of reducing GHG emissions, including Green LA, Climate LA, and LAWA's Sustainability Plan, Sustainable Airport Planning, Design and Construction Guidelines and commitment to carbon management goals.

Green LA includes the goal for LA's airports to "green the airports" including the need for: sustainability programs; LEED® green building rating standards in future construction; improvements in recycling, increase use of alternative fuel sources, increase use of recycled water, increase water conservation, reduce energy needs, and reduce GHG emissions; and, evaluating evaluate options to reduce aircraft-related GHG emissions. Implementation of the proposed project will comply with LAWA's sustainability requirements and would be designed and constructed to meet LAGBC Tier-1 requirements as well as incorporating LEED® Silver level of sustainability measures, which will serve to increase energy efficiency in new construction, increase the application of recycling and conservation, and reduce GHG emissions, in conjunction with LAWA's overall program for recycling, conservation, and GHG reductions.

The Climate LA, which identifies goals to reduce CO₂ 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 aircraft operations, ground vehicles, electrical consumption, building construction, and other actions such as related to sustainability programs and the use of recycled water for landscape and other areas. Implementation of the proposed project will not affect aircraft operations or ground vehicles. The energy efficiency of the new building areas that would occur under the proposed project would be substantially better than that of the existing building area on a per square foot basis – see Section 4.2.5.1.3 above. Building construction would feature the use of low-VOC adhesives, sealants, paints and coatings, which is recognized as a GHG reduction action on the Climate LA plan, and LAWA's requirements for the use of low emission construction equipment (i.e., Tier 4 engines) also serve to reduce GHG emissions. Implementation of the proposed project would comply with LAWA's sustainability requirements. The proposed project involves very little landscaped areas (i.e., ornamental landscaping within terminal) and the use of recycled water is infeasible given that there are currently no recycled water lines within or near the CTA. As indicated above and further described below, LAWA has adopted an internal commitment to reduce GHG emissions from LAWA owned and operated sources below 1990 levels 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050, which surpasses the GHG reduction goal set forth for LAX in Climate LA.

Executive Directive No. 10 requires City departments to create and adopt a statement of sustainable building policies. LAWA has sustainability program, with which implementation of the proposed project will comply.

The Sustainable City Plan (pLAn) framework relative to Environment focuses on local water, local solar, energy-efficient buildings, carbon and climate leadership, and waste and landfills. Implementation of the proposed project will include sustainability measures that serve to reduce water demands. The proposed project does not include solar; however, as indicated in Section 4.2.3.1.4, LAWA has initiated a solar feasibility study for LAX to identify locations for the installation of photovoltaic solar energy at LAX. The emphasis of pLAn relative to carbon and climate leadership is to eliminate coal power as a source of electricity for the City and invest in green energy. While the proposed project has no control over that aspect of the plan, LAWA has been purchasing, and plans to continue to purchase, green energy for LAX, as noted above in Section 4.2.3.1.4.

Implementation of the proposed project will comply with the applicable requirements of the Los Angeles Green Building Code.

Implementation of the proposed project will comply with LAWA's sustainability requirements.

With regard to LAWA's commitment to carbon management goals, implementation of the proposed project will comply with the applicable programs and initiatives, such as sustainability requirements, meeting LAGBC requirements, incorporation of LEED® standards into building design, construction, and operation, construction

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equipment requirements, that are among the many ways that, collectively, will enable LAWA to meet the goals for GHG reductions.

Based on the above analysis, the proposed project would not conflict with local plans, policies, and regulations adopted for the purpose of reducing GHG emissions.

4.2.5.2.2 State and Regional

State and regional plans, policies, and regulations are generally aimed at setting statewide and regional policy, and are not directed at individual projects. Additionally, neither the AB 32 Scoping Plan, Executive Order B-30-15, SB 32, Executive Order S-3-05, nor SCAG's 2016-2040 RTP/SCS provide a specific basis for calculating what the proposed project's hypothetical "fair share" of statewide or regional emissions reductions might be. See *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 205, 225-226.) It should also be noted that the Executive Orders referenced, including the GHG reduction trajectories, directly apply to State agencies and not to local agencies or the private sector. Similarly, the AB 32 Scoping Plan and SB 32, including the draft Scoping Plan for SB 32, are directed toward statewide programs, as identified through the California Air Resources Board, and do not directly limit GHG emissions from individual development projects. Statewide programs and initiatives directly implementing GHG reductions called for in AB 32 and SB 32 include, but are not limited to, the Renewable Portfolio Standard, the Low Carbon Fuel Standard, the Mobile Source Strategy, the Sustainable Freight Action Plan, the Short-Lived Climate Pollutant Reduction Strategy, SB 375 (which in Southern California is implemented by SCAG's RTP/SCS), the Cap-and-Trade Program, and proposed Integrated Natural and Working Lands Action Plan.

Notwithstanding the above, it should also be noted that the GHG emissions occurring from construction and operation of the proposed project would be less than the SCAQMD threshold of significance, which is intended to achieve the level of GHG reductions set forth in Executive Order S-3-05 which, in turn, would also achieve the GHG reduction goal of AB 32 (i.e., S-3-05 includes the GHG reduction goal to reduce statewide GHG emissions to 1990 levels by 2020, which is the same goal as in AB 32).¹⁷⁴ As a result, GHG emissions from the proposed project would not conflict with statewide and regional plans and policies such as Executive Order S-3-05, and Assembly Bill 32, whose purpose is to reduce statewide emissions to 1990 levels by 2020; Executive Order B-30-15 and SB 32, which call for a reduction in statewide GHG emissions to 40 percent below 1990 levels by 2030; or the SCAG 2016-2040 RTP/SCS, which outlines a vision for land use and transportation for the region that would achieve state GHG emissions reduction goals.

4.2.5.3 Summary of Impacts

Based on the information presented above in Sections 4.2.4.1 and 4.2.4.2, the GHG impacts associated with construction and operation of the proposed project are summarized as follows:

- ◆ Implementation of the proposed project compared to 2016 Baseline Conditions would result in an increase in GHG emissions but would not exceed the 10,000 MTCO₂e/yr as the threshold of significance and, therefore the GHG emissions impact using that threshold would be less than significant.
- ◆ Implementation of the proposed project would not conflict with state, regional and local plans, policies, or regulations adopted for the purpose of reducing GHG emissions, and therefore the GHG impact using that threshold is less than significant.

4.2.6 Cumulative Impacts

As discussed previously in Section 4.2.2, GHG impacts are exclusively cumulative impacts; hence, an evaluation of cumulative GHG impacts is already provided above and no further analysis is necessary.

¹⁷⁴ South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, p. 3-2.

4.2.7 Mitigation Measures

As indicated in Section 4.2.5.1.1, GHG impacts associated with construction and operation of the proposed project would be less than significant; therefore, no mitigation measures are required.

4.2.8 Level of Significance after Mitigation

GHG impacts associated with construction and operation of the proposed project would be less than significant.

4.2.9 Other Measures

As indicated in 4.2.5.1, GHG impacts associated with construction and operation of the proposed project would be less than significant; therefore, no mitigation measures are required to reduce impacts. However, as discussed in Section 4.1.1.8 (of Section 4.1, *Air Quality and Human Health Risk*), Standard Control Measure (Mitigation Measure) LAX-AQ-1, Construction-Related Air Quality Control Measures, and Mitigation Measure MM-AQ (T2/T3)-1, Preferential Use of Renewable Diesel Fuel, would be applied to the proposed project to reduce construction-related air pollutant emissions. Although developed to address air quality impacts, these mitigation measures would also reduce GHG emissions associated with construction of the proposed project. The reduced GHG emissions are presented below for disclosure purposes.

4.2.9.1 Reduced GHG with Implementation of Air Quality Measures

Annual GHG emissions for construction of the proposed project with implementation of LAX-AQ-1 and MM-AQ [T2/T3]-1 are presented in Table 4.2-7; these emissions would total would total 20,018 MTCO₂e over the seven-year construction period. As noted in Section 4.2.2.1, construction emissions were amortized over the lifetime of the proposed project, which is assumed to be 30 years. The total CO₂e amortized over the life of the proposed project improvements is equal to 667 MTCO₂e per year.

**Table 4.2-7
Construction Greenhouse Gas Emissions for the Proposed Project with Implementation of
Air Quality Measures (MTY)**

Emission Source	2017	2018	2019	2020	2021	2022	2023
Off-Road, On-Site Equipment	283	878	560	443	1,338	861	697
On-Road, On-Site Trucks	46	210	374	796	1,032	1,979	1,916
On-Road, Off-Site Workers	128	497	848	1,278	658	1,071	771
On-Road, Off-Site Deliveries	18	54	44	123	184	190	175
On-Site Hauling Staging	0	46	13	49	101	89	80
On-Site Hauling Batching	36	38	0	292	596	566	567
Parking, On-Site	2	9	15	23	12	19	13
All Sources (Metric Tons):	514	1,732	1,854	3,003	3,920	4,775	4,220
Source: Appendix B.1.1 of this EIR Prepared By: CDM Smith, August 2016.							

A comparison of the combined construction-related and operations-related emissions from the 2023 proposed project (assuming the conservative/worst-case operations energy demand scenario presented in Table 4.2-5, with implementation of the air quality measures noted above, to the 2016 existing conditions is shown in Table 4.2-8. As shown, the incremental emissions between the 2016 existing conditions and the implementation of the 2023 proposed project scenario are a net increase in CO₂e, but the increase is less than the 10,000 MTCO₂e/yr threshold and is approximately three percent lower than the combined construction and operation emissions of the project without implementation of the air quality measures (see Table 4.2-5).

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**Table 4.2-8
Amortized Construction and Operational Greenhouse Gas Emissions for Proposed Project with Implementation
of Air Quality Measures as Compared with 2016 Baseline (MTY)**

Emissions Source	2016 Baseline	2023 Proposed Project	Incremental Difference
Area ^{1/}	<1	<1	0
Energy	6,301	10,852	4,551
Total Operational ^{2/}	6,301	10,852	4,551
Amortized Construction	-	667	667
Total Net ^{2/}	6,301	11,519	5,218

Notes:
CO₂e = carbon dioxide equivalent
1/ Area emissions are generated by operations associated with maintenance of the facility.
2/ Totals may not add exactly because of rounding.
Source: Appendix B.2.1 of this EIR.
Prepared By: CDM Smith, August 2016.

In addition, for operational impacts, the proposed project would comply with the requirements of the City of Los Angeles Green Building Ordinance and with LAWA policies and programs related to sustainability and reducing GHG emissions that are implemented on a project-specific and on an Airport-wide basis. LAWA has an ongoing commitment to increasing energy efficiency and implementing energy conservation measures to reduce wasteful, inefficient, and unnecessary consumption of energy at its airports, which will serve to reduce GHG emissions.