

## **5.4 Greenhouse Gas Emissions**

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## 5.4 GREENHOUSE GAS EMISSIONS

This section evaluates greenhouse gas (GHG) emissions associated with the proposed Project. Consideration of the Project's consistency with applicable plans, policies, and regulations, as well as the introduction of new sources of GHGs, is included in this section. GHG technical data is included as Appendix 10.4, Air Quality/Greenhouse Gas Emissions Data.

### 5.4.1 EXISTING REGULATORY SETTING

Global climate change is addressed through the efforts of various federal, state, regional, and local government agencies as well as national and international scientific and governmental conventions and programs. These agencies work jointly and individually to understand and regulate the effects of greenhouse gas emissions and resulting climate change through legislation, regulations, planning, policy-making, education, and a variety of programs. The significant agencies, conventions, and programs focused on global climate change are discussed below.

#### FEDERAL

##### U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) is responsible for implementing federal policy to address global climate change. The federal government administers a wide array of public-private partnerships to reduce GHG intensity generated by the United States. These programs focus on energy efficiency, renewable energy, methane and other non-carbon dioxide (CO<sub>2</sub>) gases, agricultural practices, and implementation of technologies to achieve GHG reductions.

Currently, there are no federal regulations that address GHG emissions. However, in *Massachusetts v. Environmental Protection Agency*, 579 U.S. 497, 127 S. Ct. 1438 (2007), the United States Supreme Court found that the EPA has statutory authority under the Clean Air Act to regulate "greenhouse gas" emissions (including CO<sub>2</sub> emissions) from new motor vehicles. In response to this decision, the EPA is drafting regulations that address GHG emissions.

#### STATE

##### California Air Resources Board

The California Air Resources Board (CARB), a part of the California EPA, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.



## California Executive Order S-3-05

Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets:

- By 2010, California must reduce GHG emissions to 2000 levels
- By 2020, California must reduce GHG emissions to 1990 levels (427 million metric tons [MMT] of carbon dioxide equivalents [CO<sub>2</sub>eq]<sup>1</sup>)
- By 2050, California must reduce GHG emissions to 80 percent below 1990 levels (85 MMT CO<sub>2</sub>eq)

Executive Orders are binding on State agencies. Accordingly, S-3-05 will guide State agencies' efforts to control and regulate GHG emissions but will have no direct binding effect on local efforts.

## Executive Order S-13-08

Executive Order S-13-08 requests that the National Academy of Sciences (NAS) convene an independent panel to complete the first California Sea Level Rise Assessment Report and initiate an independent sea level rise science and policy committee made up of state, national and international experts.

Before release of the final Sea Level Rise Assessment Report, the Executive Order also requires that all State agencies planning construction projects in areas vulnerable to future sea level rise consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise.

The Executive Order also directs the California Resources Agency, through the Climate Action Team, to develop a state Climate Adaptation Strategy. The strategy will summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts, and outline solutions that can be implemented within and across State agencies to promote resiliency.

## The California Global Warming Solutions Act of 2006 (AB 32)

In September 2006, Governor Arnold Schwarzenegger signed Assembly (AB) 32, the California Global Warming Solutions Act of 2006 (Health and Safety Code §§ 38500, *et seq.*). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and places a cap on statewide GHG emissions, requiring reduction in statewide GHG to 1990 levels by 2020. AB 32 also includes guidance to institute emission reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions. AB 32 demonstrates California's commitment to reducing the rate of GHG emissions and the State's associated contribution to climate change, without limiting population or economic growth. Although AB 32 did not amend CEQA, it

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<sup>1</sup> Carbon Dioxide Equivalent – A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.



identifies the environmental problems in California caused by global warming (see, e.g., Health and Safety Code § 38501).

### **Senate Bill 375**

Senate Bill 375 (SB 375), which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted on September 30, 2008. On September 23, 2010, CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the metropolitan planning organizations (MPOs); the targets require a 7 to 8 percent reduction by 2020 and between 13 to 16 percent reduction by 2035 for each MPO. Through the SB 375 process, MPOs will work with local jurisdictions to develop sustainable communities strategies (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. The MPOs are expected to prepare their first SCS according to their respective regional transportation plan (RTP) update schedule. On April 4, 2012, the Regional Council of the Southern California Association of Governments (SCAG) adopted the *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future*. The 2012–2035 RTP/SCS includes a strong commitment to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and considering public health, economic development, and other regional planning objectives.

### **Senate Bill 97**

SB 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. In March 2010, the California Office of Administrative Law promulgated CEQA amendments that provide regulatory guidance with respect to the analysis and mitigation of the potential effects of GHG emissions, as found in CEQA Guidelines § 15183.5. To streamline analysis, CEQA provides for analysis through compliance with a previously adopted plan or mitigation program under special circumstances.

### **State of California Climate Change Proposed Scoping Plan**

In October 2008, CARB published its Climate Change Proposed Scoping Plan (Proposed Scoping Plan), which is the State's plan to achieve the GHG reductions required by AB 32. The Proposed Scoping Plan contains the primary strategies that California will implement to achieve a reduction of 169 MMT CO<sub>2</sub>eq, or approximately 30 percent from the State's projected 2020 emission level of 596 MMT CO<sub>2</sub>eq under a "business-as-usual" scenario. The Proposed Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Proposed Scoping Plan was approved by CARB on December 11, 2008.

In addition to the Scoping Plan, CARB has also released the Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the CEQA (CARB Draft Staff Proposal). The CARB Draft Staff Proposal includes potential



interim performance standards for various project types and emissions sources including construction, energy, water use, waste, transportation, and total mass GHG emissions. Specific thresholds and performance criteria for these categories have yet to be developed.

## California Code of Regulations (CCR) Title 24

CCR Title 24, Part 6 (California's Energy Efficiency Standards for Residential and Nonresidential Buildings) (Title 24) was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to increase the baseline energy efficiency requirements. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions. The 2013 standards are the most recent version which will become effective on July 1, 2014.

CCR Title 24, Part 11 (California's Green Building Standard Code) (CALGreen) was updated and the 2013 standards will go into effect July 1, 2014. CALGreen is the first statewide mandatory green building code and significantly raises the minimum environmental standards for construction of new buildings in California. The Mandatory provisions in CALGreen will reduce the use of VOC emitting materials, strengthen water conservation, and require construction waste recycling.

## LOCAL

### South Coast Air Quality Management District

The South Coast Air Quality management District (SCAQMD) adopted a *Policy on Global Warming and Stratospheric Ozone Depletion* in April 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- Phase out the use and corresponding emissions of CFCs, methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- Phase out the large quantity use and corresponding emissions of HCFCs by the year 2000;
- Develop recycling regulations for HCFCs (e.g., SCAQMD Rules 1411 and 1415);
- Develop an emissions inventory and control strategy for methyl bromide; and
- Support the adoption of a California GHG emission reduction goal.

The legislative and regulatory activity detailed above is expected to require significant development and implementation of energy efficient technologies and shifting of energy production to renewable sources.



## City of El Segundo

The City of El Segundo does not have any plans, policies, regulations, significance thresholds, or laws specifically addressing climate change. However, the El Segundo Municipal Code (ESMC) contains provisions that address water conservation and transportation demand management (TDM).

ESMC Chapter 10-2, *Water Conservation in Landscaping*. ESCMC Chapter 10-2 contains the City's water conservation in landscaping standards, which are intended to promote water conservation while allowing the maximum possible flexibility in designing healthy, attractive, and cost effective water efficient landscapes.

ESMC Chapter 10-5, *Water Conservation*. ESCMC Chapter 10-5 was adopted, in part, to establish water conservation requirements. As specified in ESCMC § 10-5-3, *Water Conservation Program*, all water customers are required to adopt and put into use at the earliest possible date drought water conservation programs.

ESMC Chapter 15-16, *Developer Transportation Demand Management*. ESCMC Chapter 15-16 sets forth requirements for major new developments to provide facilities that encourage and accommodate the use of ridesharing, transit, pedestrian, and bicycle commuting as alternatives to single occupant motor vehicle trips. According to ESCMC § 15-16-2, before approval of any development project, the Applicant shall make the provision for, as a minimum, all of the applicable TDM and trip reduction measures, as specified in ESCMC § 15-16-3: *Development Standards*, which include the following among others:

- A. Development of 25,000 square feet or more: a bulletin board, display case or kiosk displaying transportation information located where the greatest number of employees are likely to see it (ESMC includes specific requirements regarding content).
- B. Development of 50,000 square feet or more: the measures in subsection A above; preferential parking (not less than 15 percent of employee parking areas; high occupancy vehicle (HOV) loading area; vanpool access; on site amenities or shuttle; bicycle facilities; shower and lockers (optional); transit support facilities (optional); Projects may provide facilities which will promote transit use.
- C. Development of 100,000 square feet or more: the measures in subsections A and B above; sidewalks or other designated pathways; bus stop improvements (if deemed necessary by the City); and access from external circulation system to onsite bicycle parking facilities.

## 5.4.2 EXISTING ENVIRONMENTAL SETTING

The Project site lies within the southern portion of the South Coast Air Basin (Basin). The Basin is a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The Basin's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) determine its distinctive climate.



The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. The climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the Basin.

## SCOPE OF ANALYSIS FOR CLIMATE CHANGE

The study area for climate change and the analysis of GHG emissions is broad as climate change is influenced by world-wide emissions and their global effects. However, the study area is also limited by the CEQA Guidelines [§ 15064(d)], which directs lead agencies to consider an "indirect physical change" only if that change is a reasonably foreseeable impact which may be caused by the Project.

The baseline against which to compare potential impacts of the Project includes the natural and anthropogenic drivers of global climate change, including world-wide GHG emissions from human activities that have grown more than 70 percent between 1970 and 2004. The State of California is leading the nation in managing GHG emissions. Accordingly, the impact analysis for this Project relies on guidelines, analyses, policy, and plans for reducing GHG emissions established by the CARB.

This analysis also cites and relies on local air quality management district recommendations from the SCAQMD for CEQA assessments of GHG emissions.

## GREENHOUSE GAS EMISSIONS

Information used to prepare this section was taken from various sources and publications prepared by a number of professional associations and agencies that have suggested approaches and strategies for complying with CEQA's environmental disclosure requirements. Such organizations include the California Attorney General's Office (AGO), the California Air Pollution Controls Officers Association (CAPCOA), the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), and the Association of Environmental Professionals (AEP).

### Climate Change Background

Parts of the Earth's atmosphere act as an insulating "blanket" for the planet. This "blanket" of various gases traps solar energy, which keeps the global average temperature in a range suitable for life. The collection of atmospheric gases that comprise this blanket are called "greenhouse gases" based on the idea that these gases trap heat like the glass walls of a greenhouse. These gases, mainly water vapor, CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), ozone (O<sub>3</sub>), and chlorofluorocarbons (CFCs), all act as effective global insulators, reflecting visible light and infrared radiation back to earth. Most scientists agree that human activities, such as producing electricity and driving internal combustion vehicles, have contributed to the elevated concentration of these gases in the atmosphere. As a result, the Earth's overall temperature is rising. Warmer global temperatures will lead to changes in rainfall patterns,



smaller polar ice caps, a rise in sea level, and a wide range of impacts on plants, wildlife, and humans.

The relationship of water vapor and ozone as GHGs is poorly understood. It is unclear how much water vapor acts as a GHG since water vapor can also produce cloud cover which reflects sunlight away from Earth and counteracts its effect as a GHG. Also, water vapor tends to increase as the Earth warms, so it is not well understood whether the increase in water vapor is contributing to or is a result of climate change. Ozone tends to break down in the presence of solar radiation, but this is not sufficiently understood by the scientific community to fully evaluate. For these reasons, methodologies approved by the IPCC, the EPA, and CARB focus on carbon dioxide, nitrous oxide, methane, and chlorofluorocarbons. The following provides a brief description of each of these GHGs.

## Carbon Dioxide

The production and absorption of carbon dioxide occurs through the burning of fossil fuels (e.g., oil, natural gas, and coal), solid waste, trees and wood products, and as a result of other chemical reactions, such as those required to manufacture cement. Globally, the largest source of human based CO<sub>2</sub> emissions is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. A number of specialized industrial production processes and product uses, such as mineral or metal production, and the use of petroleum-based products, leads to CO<sub>2</sub> emissions.

CO<sub>2</sub> is removed from the atmosphere (or sequestered) when it is absorbed by plants as part of the biological carbon cycle. Natural sources of CO<sub>2</sub> occur within the carbon cycle where billions of tons of atmospheric CO<sub>2</sub> are removed by oceans and growing plants and are emitted back into the atmosphere through natural processes. When in balance, total CO<sub>2</sub> emissions and removals from the entire carbon cycle are roughly equal. Since the Industrial Revolution in the 1700s, most scientists agree that human activities, including burning of oil, coal, and gas and deforestation, increased CO<sub>2</sub> concentrations in the atmosphere by 35 percent as of 2005.

## Methane

Methane is emitted from a variety of both human-related and natural sources. CH<sub>4</sub> is emitted during the production and transport of coal, natural gas, and oil, from livestock and other agricultural practices, and from the decay of organic waste in municipal solid waste landfills. It is estimated that 60 percent of global CH<sub>4</sub> emissions are related to human activities. Natural sources of CH<sub>4</sub> include wetlands, gas hydrates,<sup>2</sup> permafrost, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. CH<sub>4</sub> emissions levels from a particular source can vary significantly from one country or region to another. These variances depend on many factors, such as climate, industrial and agricultural production characteristics, energy types and usage, and waste management practices. For example, temperature and moisture have a significant effect on the anaerobic digestion process, which is one of the key biological processes resulting in CH<sub>4</sub> emissions from both human and natural sources. Also, the implementation of technologies to capture and utilize CH<sub>4</sub> from sources such as landfills, coalmines, and manure management systems affects the emissions levels from these sources.

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<sup>2</sup> Gas hydrates are crystalline solids that consist of a gas molecule, usually methane, surrounded by a "cage" of water molecules.



## Nitrous Oxide

Concentrations of nitrous oxide also began to rise at the beginning of the Industrial Revolution reaching 314 parts per billion (ppb) by 1998. Microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen, produce nitrous oxide. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to the atmospheric load of N<sub>2</sub>O.

## Chlorofluorocarbons

Chlorofluorocarbons are not naturally occurring. They were synthesized for uses as refrigerants, aerosol propellants, and cleaning solvents. Since their creation in 1928, the concentrations of CFCs in the atmosphere have risen. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken, and levels of the major CFCs are now remaining static or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years. Since they are also a GHG, along with such other long-lived synthesized gases as CF<sub>4</sub> (carbontetrafluoride) and SF<sub>6</sub> (sulfurhexafluoride), they are of concern. Another set of synthesized compounds called HFCs (hydrofluorocarbons) are also considered GHGs, though they are less stable in the atmosphere and therefore have a shorter lifetime and less of an impact. CFCs, CF<sub>4</sub>, SF<sub>6</sub>, and HFCs have been banned and are no longer available. Therefore, these GHGs are not included further in this analysis.

## POTENTIAL EFFECTS OF GLOBAL CLIMATE CHANGE

Climate change could have a number of adverse effects. Although these effects would have global consequences, in most cases they would not disproportionately affect any one site or activity. In other words, many of the effects of climate change are not site-specific. Emission of GHGs would contribute to the changes in the global climate, which would in turn, have a number of physical and environmental effects. A number of general effects are discussed below.

Sea Level Rise and Flooding. The California Climate Change Center predicts that sea level in California would rise between 10.9 to 71.6 centimeters (cm) (0.36 to 2.3 feet) above existing mean sea level (MSL) by 2099 as a result of climate change.<sup>3</sup> When combined with astronomical tides, even a 1-foot increase in MSL would result in the 100-year event high tide peak occurring at the 10-year event frequency.<sup>4</sup> In other words, the frequency of a current 100-year high tide (about 9.5 feet above current MSL) would occur 10 times more often if sea levels increase by 1 foot above current MSL.

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<sup>3</sup> D. Cayan, P. Bromirski, K. Hayhoe, M. Tyree, M. Dettinger, and R. Flick, *California Climate Change Center, Projecting Future Sea Level, A Report from the California Climate Change Center, CEC-500-2005-202-SF*, March 2006.

<sup>4</sup> J. Medelin, J. Harou, M. Olivares, J. Lund, R. Howitt, S. Tanaka, M. Jenkins, K. Madani, and T. Zhu, *California Climate Change Center, Climate Warming and Water Supply Management in California: White Paper, A Report from Climate Change Center, CEC-500-2005-195-SF*, March 2006.



In the future, precipitation events are predicted to vary in terms of timing, intensity, and volume according to many climate change models. Extreme storm events may occur with greater frequency. Changes in rainfall and runoff could affect flows in surface water bodies, causing increased flooding and runoff to the storm drain system.

Water Supply. Health and Safety Code § 38501(a) recognizes that climate change “poses a serious threat to the economic well-being, public health, natural resources, and the environment of California,” and notes, “the potential adverse impacts of [climate change] include...reduction in the quality and supply of water to the state from the Sierra snowpack.” As most of the state, including the City of El Segundo depends on surface water supplies originating in the Sierra Nevada, this potential water supply reduction is a concern.

Most of the scientific models addressing climate change show that the primary effect on California’s climate would be a reduced snow pack and a seasonal shift of peak flows in streams. A higher percentage of the winter precipitation in the mountains would likely fall as rain rather than as snow in some locations, reducing the overall snowpack. Further, as temperatures rise, snowmelt is expected to occur earlier in the year. As a result, peak runoff would likely come a month or so earlier. The end result of this would be that the state may not have sufficient surface storage to capture the early runoff, and so, absent construction of additional water storage projects, a portion of the current supplies would flow to the oceans and be unavailable for use in the state’s water delivery systems.

Water Quality. Climate change could have adverse effects on water quality, which would in turn affect the beneficial uses (habitat, water supply, etc.) of surface water bodies and groundwater. The changes in precipitation discussed above could result in increased sedimentation, higher concentration of pollutants, higher dissolved oxygen levels, increased temperatures, and an increase in the amount of runoff constituents reaching surface water bodies. Sea level rise, discussed above, could result in the encroachment of saline water into freshwater bodies.

Ecosystems and Biodiversity. Climate change could have effects on diverse types of ecosystems, from alpine to deep-sea habitat. As temperatures and precipitation change, seasonal shifts in vegetation would occur, potentially effecting the distribution of associated flora and fauna species. As the range of species shifts, habitat fragmentation could occur, with acute impacts on the distribution of certain sensitive species. The IPCC states that “20 percent to 30 percent of species assessed may be at risk of extinction from climate change impacts within this century if global mean temperatures exceed 2 to 3°C (3.6 to 5.4°F) relative to pre-industrial levels.”<sup>5</sup> Shifts in existing biomes<sup>6</sup> could also make ecosystems vulnerable to invasive species encroachment. Wildfires, which are an important control mechanism in many ecosystems, may become more severe and more frequent, making it difficult for native plant species to repeatedly re-germinate. In general terms, climate change would put a number of stressors on ecosystems, with potentially catastrophic effects on biodiversity.

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<sup>5</sup> Parry, Martin L., Canziani, Osvaldo F., Palutikof, Jean P., van der Linden, Paul J., and Hanson, Clair E. (eds.), *Intergovernmental Panel on Climate Change, Climate Change 2007: Impacts, Adaptation, and Vulnerability, Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, 2007.

<sup>6</sup> A biome is a major ecological community classified by the predominant vegetation, and hence animal inhabitants.



Human Health Impacts. Climate change may increase the risk of vector-borne infectious diseases, particularly those found in tropical areas and spread by insects – malaria, dengue fever, yellow fever, and encephalitis.<sup>7</sup> While these health impacts would largely affect tropical areas in other parts of the world, effects would also be felt in California. Warming of the atmosphere would be expected to increase smog and particulate pollution, which could adversely affect individuals with heart and respiratory problems, such as asthma. Extreme heat events would also be expected to occur with more frequency, and could adversely affect the elderly, children, and the homeless. Finally, the water supply impacts and seasonal temperature variations which could occur as a result of climate change could affect the viability of existing agricultural operations, making the food supply more vulnerable.

## POTENTIAL EFFECTS OF HUMAN ACTIVITY ON CLIMATE CHANGE

The burning of fossil fuels, such as coal and oil, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO<sub>2</sub> emissions (and thus substantial increases in atmospheric concentrations). In 1994, atmospheric CO<sub>2</sub> concentrations were found to have increased by nearly 30 percent above pre-industrial (circa 1760) concentrations.

The effect each GHG has on climate change is measured as a combination of the volume of its emissions, and its global warming potential (GWP), and is expressed as a function of how much warming would be caused by the same mass of CO<sub>2</sub>. Thus, GHG emissions are typically measured in terms of pounds or tons of CO<sub>2</sub>eq, and are often expressed in MTCO<sub>2</sub>eq or millions of metric tons of CO<sub>2</sub> equivalents (MMTCO<sub>2</sub>eq).

Global Emissions. Worldwide emissions of GHGs in 2004 were nearly 30 billion tons of CO<sub>2</sub>eq per year (including both on-going emissions from industrial and agricultural sources, but excluding emissions from land-use changes).<sup>8</sup>

U.S. Emissions. In 2004, the United States emitted 7.1 billion tons of CO<sub>2</sub>eq. Of the four major sectors nationwide – residential, commercial, industrial, and transportation – transportation accounts for the highest percentage of GHG emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion. In 2008, the United States emitted 6.9 billion tons of CO<sub>2</sub>eq, with transportation accounting for the highest percentage of GHG emissions, approximately 32 percent.<sup>9</sup>

State of California Emissions. In 2004, California emitted approximately 483 million tons of CO<sub>2</sub>eq, or about 6 percent of the U.S. emissions. This large number is due primarily to the sheer size of California compared to other states. By contrast, California has the fourth lowest per-capita GHG emission rates in the country, 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. Another factor that has

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<sup>7</sup> U.S. Environmental Protection Agency, *Climate Change—Health and Environmental Effects (2008)*, <http://www.epa.gov/climatechange/effects/health.html#climate>, Accessed December 13, 2009.

<sup>8</sup> United Nations Framework Convention on Climate Change, *Sum of Annex I and Non-Annex I Countries Without Counting Land Use, Land-Use Change, and Forestry (LULUCF), Predefined Queries: GHG total without LULUCF (Annex I Parties)*, [http://unfccc.int/ghg\\_emissions\\_data/predefined\\_queries/items/3814.php](http://unfccc.int/ghg_emissions_data/predefined_queries/items/3814.php), Accessed May 2, 2007.

<sup>9</sup> U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2009*, EPA# 430-R-11-005, April 15, 2011.



reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states. In 2008, California's GHG emissions were approximately 478 MMT CO<sub>2</sub>eq, a reduction of approximately five MMT CO<sub>2</sub>eq in transportation emissions from 2004 emissions, which were generally attributed to reduced travel.<sup>10</sup>

The California Energy Commission found that transportation is the source of approximately 41 percent of the state's GHG emissions, followed by electricity generation (both in-state and out-of-state) at 23 percent, and industrial sources at 20 percent. Agriculture and forestry is the source of approximately 8.3 percent, as is the source categorized as "other," which includes residential and commercial activities.<sup>11</sup>

Various aspects of constructing, operating, and eventually discontinuing (demolition and disposal of waste) the use of industrial, commercial and residential development will result in GHG emissions. Operational GHG emissions result from energy use associated with heating, lighting, and powering buildings (typically through natural gas and electricity consumption), pumping and processing water (which consumes electricity), as well as fuel used for transportation and decomposition of waste associated with building occupants. New development can also create GHG emissions in its construction and demolition phases in connection with the use of fuels in construction equipment, creation and decomposition of building materials, vegetation clearing, and other activities. However, it is noted that new development does not necessarily create entirely new GHG emissions. Occupants of new buildings are often relocating and shifting their operational-phase emissions from other locations.

### 5.4.3 IMPACT THRESHOLDS AND SIGNIFICANCE CRITERIA

At this time, there is no absolute consensus in the State of California among CEQA lead agencies regarding the analysis of global climate change and selection of significance criteria. In fact, numerous organizations, both public and private, have released advisories and guidance with recommendations designed to assist decision-makers in the evaluation of GHG emissions given the current uncertainty regarding emissions thresholds of significance.

Lead agencies may elect to rely on thresholds of significance recommended or adopted by State or regional agencies with expertise in the field of global climate change (CEQA Guidelines § 15064.7(c)). 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, the City has not yet established specific quantitative significance thresholds for GHG emissions for development projects.

The SCAQMD has formed a GHG CEQA Significance Threshold Working Group (Working Group) to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. As of the last Working Group meeting (Meeting No. 15,

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<sup>10</sup> U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2008*, EPA# 430-R-10-006, April 2010.

<sup>11</sup> California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 - Final Staff Report*, CEC-600-2006-013-SF, December 22, 2006, updated January 23, 2007.



September 2010), the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency.<sup>12</sup>

With the tiered approach, the project is compared to the requirements of each tier sequentially and would not result in a significant impact if it complies with any tier. Tier 1 excludes projects that are specifically exempt from SB 97 from resulting in a significant impact. Tier 2 excludes projects that are consistent with a GHG reduction plan that has a certified final CEQA document and complies with AB 32 GHG reduction goals. Tier 3 excludes projects with annual emissions lower than a screening threshold. For all non-industrial projects, the SCAQMD is proposing a screening threshold of 3,000 MTCO<sub>2</sub>eq per year. SCAQMD concluded that projects with emissions less than the screening threshold would not result in a significant cumulative impact.

Tier 4 consists of three decision tree options. Under the Tier 4 first option, the project would be excluded if design features and/or mitigation measures resulted in emissions 30 percent lower than business as usual emissions. Under the Tier 4 second option the project would be excluded if it had early compliance with AB 32 through early implementation of CARB's Scoping Plan measures. Under the Tier 4 third option, project would be excluded if was below an efficiency-based threshold of 4.8 MTCO<sub>2</sub>eq per service population (SP) per year.<sup>13</sup> Tier 5 would exclude projects that implement offsite mitigation (GHG reduction projects) or purchase offsets to reduce GHG emission impacts to less than the proposed screening level.

GHG efficiency metrics are utilized as thresholds to assess the GHG efficiency of a project on a per capita basis or on a "service population" basis (the sum of the number of jobs and the number of residents provided by a project) such that the project would allow for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020 and 2035). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal of the State, by the estimated 2035 population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32, and is appropriate, because the threshold can be applied evenly to all project types (residential or commercial/retail only and mixed use).

The 4.8 MTCO<sub>2</sub>eq per SP per year efficiency-based threshold has been selected as the significance threshold, as it is most applicable to the proposed project. The 4.8 MTCO<sub>2</sub>eq per SP per year threshold is used in addition to the qualitative thresholds of significance set forth below from section VII of Appendix G to the CEQA Guidelines.

### **CEQA Significance Criteria**

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by Appendix G of the CEQA Guidelines, as amended, and used by the City of El Segundo in its environmental review process. The Initial Study Checklist includes questions relating to GHG emissions. The issues presented in the Initial Study Checklist have been

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<sup>12</sup> The most recent SCAQMD GHG CEQA Significance Threshold Working Group meeting was held on September 2010.

<sup>13</sup> The project-level efficiency-based threshold of 4.8 MTCO<sub>2</sub>eq per SP per year is relative to the 2020 target date. The SCAQMD has also proposed efficiency-based thresholds relative to the 2035 target date to be consistent with the GHG reduction target date of SB 375. GHG reductions by the SB 375 target date of 2035 would be approximately 40 percent. Applying this 40 percent reduction to the 2020 targets results in an efficiency threshold for plans of 4.1 MTCO<sub>2</sub>eq per SP per year and an efficiency threshold at the project level of 3.0 MTCO<sub>2</sub>eq/year.



utilized as thresholds of significance in this section. Accordingly, a project may create a significant adverse environmental impact if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Based on these standards/criteria, the Project's effects have been categorized as either a "less than significant impact" or a "potentially significant impact." If a potentially significant impact cannot be reduced to a less than significant level through the application of goals, policies, standards or mitigation, it is categorized as a significant and unavoidable impact. The standards used to evaluate the significance of impacts are often qualitative rather than quantitative because appropriate quantitative standards are either not available for many types of impacts or are not applicable for some types of projects.

## 5.4.4 IMPACTS AND MITIGATION MEASURES

### GREENHOUSE GAS EMISSIONS

#### ● GREENHOUSE GAS EMISSIONS GENERATED BY PROJECT DEVELOPMENT COULD HAVE A SIGNIFICANT IMPACT ON GLOBAL CLIMATE CHANGE.

**Impact Analysis:** The Project's "business as usual" GHG emissions have been calculated. As previously stated, "Business as Usual" refers to emissions that would be expected to occur in the absence of GHG reduction measures. The proposed business as usual GHG emissions account for the construction and operation of proposed 1,751,921 square feet of office, 73,577 square feet of warehouse, 168,000 square feet of light industrial, and 148,960 square feet of retail uses and forecast trip generation (26,585 net new daily trips).

#### Direct Project-Related Sources of Greenhouse Gases

Direct Project-related GHG emissions for proposed "business as usual" conditions include emissions from construction activities, and area and mobile sources. Table 5.4-1, Business As Usual Greenhouse Gas Emissions, presents the estimated CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> emissions.

The California Emissions Estimator Model (CalEEMod) computer model outputs contained within the Appendix 10.4, Air Quality/Greenhouse Gas Emissions Data, were used to calculate mobile source, area source, and construction related GHG emissions. Operational GHG estimations are based on energy emissions from natural gas usage and automobile emissions. CalEEMod relies upon construction phasing and Project specific land use data to calculate emissions; refer to Appendix 10.4.

GHG emissions from the Project construction would result in 35.33 MTCO<sub>2</sub>eq for Phase 1 and 137.30 for MTCO<sub>2</sub>eq for Phase II (Phase II consists of Phases II and III identified on the proposed Vesting Tentative Map). Construction GHG emissions are typically summed and



amortized over the lifetime of the Project (assumed to be 30 years), then added to the operational emissions.<sup>14</sup> GHGs from the Project's area sources and mobile sources would be 0.06 MTCO<sub>2</sub>eq/year and 24,354.26 MTCO<sub>2</sub>eq/year, respectively. Total proposed Project-related direct operational emissions would result in 24,526.95 MTCO<sub>2</sub>eq/year.

**Table 5.4-1  
Business As Usual Greenhouse Gas Emissions**

Source	CO <sub>2</sub>	CH <sub>4</sub>		N <sub>2</sub> O		Total Metric Tons of CO <sub>2</sub> eq <sup>3</sup>
	Metric Tons/year <sup>1</sup>	Metric Tons/year <sup>1</sup>	Metric Tons of CO <sub>2</sub> eq <sup>2</sup>	Metric Tons/year <sup>1</sup>	Metric Tons of CO <sub>2</sub> eq <sup>2</sup>	
<b>PROPOSED BUSINESS AS USUAL GHG EMISSIONS</b>						
<b>Direct Emissions</b>						
• Construction Phase 1 (amortized over 30 years)	35.23	0.00	0.09	0.00	0.00	35.33
• Construction Phase 2 (amortized over 30 years)	137.07	0.01	0.23	0.00	0.00	137.30
• Area Source	0.05	0.00	0.00	0.00	0.00	0.06
• Mobile Source	24,337.06	0.82	17.21	0.00	0.00	24,354.26
<i>Total Unmitigated Direct Emissions<sup>3</sup></i>	<i>24,509.41</i>	<i>0.83</i>	<i>17.53</i>	<i>0.00</i>	<i>0.00</i>	<i>24,526.95</i>
<b>Indirect Emissions</b>						
• Energy	10,038.43	0.43	9.06	0.11	32.67	10,080.15
• Solid Waste	418.81	24.75	519.77	0.00	0.00	938.58
• Water Demand	2,157.78	12.42	260.82	0.31	96.22	2,514.82
<i>Total Unmitigated Indirect Emissions<sup>3</sup></i>	<i>12,615.02</i>	<i>37.60</i>	<i>789.65</i>	<i>0.42</i>	<i>128.89</i>	<i>13,533.55</i>
<b>Total Net Project-Related Emissions<sup>3</sup></b>	<b>38,060.50 MTCO<sub>2</sub>eq/year</b>					
Notes:						
1. Emissions calculated using the CalEEMod computer model.						
2. Carbon dioxide equivalent values calculated using the EPA Website, <i>Greenhouse Gas Equivalencies Calculator</i> , <a href="http://www.epa.gov/cleanenergy/energy-resources/calculator.html">http://www.epa.gov/cleanenergy/energy-resources/calculator.html</a> , accessed October 2013.						
3. Totals may be slightly off due to rounding.						
Refer to Appendix 10.4, <i>Air Quality/Greenhouse Gas Emissions Data</i> , for detailed model input/output data.						

**Indirect Project Related Sources of Greenhouse Gases**

Energy Consumption. Energy consumption emissions were calculated using the CalEEMod model and Project-specific land use data. Electricity to the Project would be provided via extension of the existing customer dedicated substation and electrical line, along with a proposed second customer dedicated substation (an anticipated electrical load of approximately 68,240 kWh/yr). The Project would indirectly result in 10,080.15 MTCO<sub>2</sub>eq/year of GHG emissions due to energy consumption; refer to Table 5.4-1.

<sup>14</sup> The project lifetime is based on the standard 30 year assumption of the South Coast Air Quality Management District (<http://www.aqmd.gov/hb/2008/December/081231a.htm>).



Solid Waste. GHG emissions from solid waste associated with Project operations would result in 938.58 MTCO<sub>2</sub>eq/year; refer to Table 5.4-1.

Water Demand. West Basin Municipal Water District, as a member agency of the Metropolitan Water District of Southern California (MWD) would be the main purveyor of water to the Project. GHG emissions from indirect energy consumption associated with water supply would result in 2,514.82 MTCO<sub>2</sub>eq/year.

Total Net Project-Related Sources of Greenhouse Gases. As shown in Table 5.4-1, the total amount of net Project-related “business as usual” GHG emissions from direct and indirect sources combined would total 38,060.50 MTCO<sub>2</sub>eq/year.

### **Mitigated Greenhouse Gas Emissions**

All future development within the El Segundo South Campus Specific Plan (ESSCSP) area would be subject to compliance with ESMC Chapters 10-2, *Water Conservation in Landscaping* and 10-5, *Water Conservation*, which are intended to promote water conservation in landscaping and which require that all water customers adopt and put into use at the earliest possible date drought water conservation programs. Additionally, all future development within the ESSCSP area would be subject to compliance with ESMC Chapter 15-16, *Developer Transportation Demand Management*, which sets forth requirements for major new developments to provide facilities that encourage and accommodate the use of ridesharing, transit, pedestrian, and bicycle commuting as alternatives to single occupant motor vehicle trips. Before approval of any development project, the Applicant would be required to provide, at a minimum, all of the applicable TDM and trip reduction measures specified in ESMC § 15-16-3, *Development Standards*. A reduction in such trips can be expected to reduce traffic congestion, with resultant reductions in GHG emissions and energy consumption related to employment growth generated by new developments. According to ESMC 15-16-4, *Monitoring*, physical facilities would be verified through the City's existing development review process. Initial enforcement would consist of verification during plan check and field inspection prior to release of utilities/Certificate of Occupancy (to ensure that measures are implemented, installed, etc.). Subsequent enforcement would be in accordance with established Zoning Code procedures.

Adherence to ESMC requirements and other reduction measures required by Mitigation Measure GHG-1 would result in reduced Project-related GHG emissions. GHG reductions were applied using CalEEMod. Table 5.4-2, *Mitigated Greenhouse Gas Emissions*, shows the reduced GHG emissions resulting from implementation of Mitigation Measure GHG-1 associated with water, energy, solid waste, and land use efficiency measures.

Reduction measures accounted for in Table 5.4-2 and required by Mitigation Measure GHG-1 include the following:

- Increased diversity of land uses;
- Increased density of 94 jobs per acre;
- Pedestrian connections to the off-site circulation network;
- Transit accessibility, as the Project site is located within 0.25 miles of a light rail station;
- Energy efficient buildings, 15 percent above Title 24 requirements;
- Water-efficient irrigation systems in compliance with ESMC Chapter 10-2;
- Water conservation programs in compliance with ESMC Chapter 10-5;
- Low VOC paint;



- Low-flow faucets, toilets, and showers;
- Implement TDM and trip reduction measures in compliance with ESMC Chapter 15-16 (i.e., facilities that encourage/accommodate the use of ridesharing, transit, pedestrian, and bicycle commuting); and
- Institute recycling and composting services to reduce solid waste by at least 50 percent.

**Table 5.4-2  
Mitigated Greenhouse Gas Emissions**

Source	CO <sub>2</sub>	CH <sub>4</sub>		N <sub>2</sub> O		Total Metric Tons of CO <sub>2</sub> eq
	Metric Tons/year <sup>1</sup>	Metric Tons/year <sup>1</sup>	Metric Tons of CO <sub>2</sub> eq <sup>2</sup>	Metric Tons/year <sup>1</sup>	Metric Tons of CO <sub>2</sub> eq <sup>2</sup>	
<b>Direct Emissions</b>						
• Construction Phase 1 (amortized over 30 years)	35.23	0.00	0.09	0.00	0.00	35.33
• Construction Phase 2 (amortized over 30 years)	137.07	0.01	0.23	0.00	0.00	137.30
• Area Source	0.05	0.00	0.00	0.00	0.00	0.06
• Mobile Source	15,067.42	0.52	10.92	0.00	0.00	15,078.42
<i>Total Mitigated Direct Emissions<sup>3</sup></i>	<i>15,239.77</i>	<i>0.53</i>	<i>11.24</i>	<i>0.00</i>	<i>0.00</i>	<i>15,251.11</i>
<b>Indirect Emissions</b>						
• Energy	9,415.51	0.41	8.54	0.10	30.41	9,454.47
• Water Demand	1,813.55	9.94	208.70	0.25	77.13	2,099.38
• Waste	209.40	12.38	259.89	0.00	0.00	469.29
<i>Total Mitigated Indirect Emissions<sup>3</sup></i>	<i>11,438.46</i>	<i>22.73</i>	<i>477.13</i>	<i>0.35</i>	<i>107.54</i>	<i>12,023.14</i>
<b>Total Mitigated Project-Related Emissions<sup>3</sup></b>	<b>27,274.25 MTCO<sub>2</sub>eq/year</b>					
<b>Mitigated Per Capita Emissions</b>	<b>5.9 MTCO<sub>2</sub>eq/year</b>					
<b>Per Capita Threshold</b>	<b>4.8 MTCO<sub>2</sub>eq/year</b>					
<b>Mitigated GHG Emissions Exceed Per Capita Threshold?</b>	<b>Yes</b>					
Notes:						
1. Mitigated emissions calculated using CalEEMod computer model.						
2. CO <sub>2</sub> Equivalent values calculated using the U.S. EPA Website, <i>Greenhouse Gas Equivalencies Calculator</i> , <a href="http://www.epa.gov/cleanenergy/energy-resources/calculator.html">http://www.epa.gov/cleanenergy/energy-resources/calculator.html</a> , accessed October 2013.						
3. Totals may be slightly off due to rounding.						
4. Per capita emissions are based on a service population of 4,598 employees; see Section 5.9, <i>Population and Housing</i> .						
Refer to Appendix 10.4, <i>Air Quality and Greenhouse Gas Emissions Data</i> , for detailed model input/output data.						

The proposed ESSCSP sets forth goals and objectives for sustainable development practices that would further reduce area and mobile source emissions. Although the ESSCSP establishes a minimum exceedance of the California Green Building Standards Code (CALGreen) by 5 percent, Mitigation Measure GHG-1 requires that the Project exceed CALGreen by 15 percent. The ESSCSP also includes sustainable development practices such as using sustainable building materials, water conservation, energy efficient lighting, reclaimed landscape water, and roof structures that support future solar panels.

As seen in Table 5.4-2, despite implementation of the Project Design Features, compliance with Code required water conservation measures (ESMC Chapters 10-2 and 10-5) and TDM measures (ESMC Chapter 15-16), and Mitigation Measure GHG-1, the Project would result in



GHG emissions of 5.9 MTCO<sub>2</sub>eq per capita per year. Therefore, the Project would exceed the 4.8 MTCO<sub>2</sub>eq per capita per year project level GHG threshold resulting in significant and unavoidable impacts.

### *Mitigation Measures:*

GHG-1 The Project must incorporate the improvements listed below to ensure consistency with applicable law. The Project Applicant must demonstrate compliance with this measure to the satisfaction of the Building and Planning Safety Director, before the City issues building permits or certificates of occupancy.

#### *Energy Efficiency*

- Design buildings to be energy efficient, 15 percent above Title 24 requirements (building permit).
- Install light colored “cool” roofs and cool pavements, and strategically placed shade trees (building permit).
- Install high efficiency lighting, and energy efficient heating and cooling systems (building permit).
- Reduce unnecessary outdoor lighting (building permit).

#### *Water Conservation and Efficiency*

- Install water-efficient fixtures (e.g., faucets, toilets, showers) (Building Permit).

#### *Solid Waste*

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard) (Building Permit).
- Provide interior and exterior storage areas for recyclables and adequate recycling containers located in public areas (Occupancy Permit).

***Level of Significance:*** Significant and Unavoidable Impact.

## **COMPLIANCE WITH APPLICABLE PLAN/POLICY/REGULATION**

- **IMPLEMENTATION OF THE PROPOSED PROJECT WOULD NOT CONFLICT WITH AN APPLICABLE GREENHOUSE GAS REDUCTION PLAN, POLICY, OR REGULATION.**

***Impact Analysis:*** The City of El Segundo does not have an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. However, the City established an Environmental Committee to review current City environment practices, identify new environmental goals and objectives, and develop a framework for protecting the City’s quality of life while moderating the growth demands upon our natural resources and the impacts their consumption has upon the environment. As first steps to achieving a more sustainable community, the City developed an environmental work plan to help address these goals and objectives. The framework is structured under the following areas: energy conservation, solid



waste reduction, community design standards, community environment, transportation, environmental health, water conservation, and environmental council.

In addition, the Project would be subject to all applicable regulatory requirements, further reducing Project-related GHG emissions. The Project establishes a maximum allowable development within the ESSCSP area and develops land uses that would be compatible with the existing Campus' facilities and operations. The Project would develop a Mixed-Use concept of office, warehouse, industrial and retail/restaurant uses that would inherently reduce vehicle trips, vehicle miles traveled, and related GHG emissions. The Project would not conflict with or impede implementation of reduction goals identified in AB 32 and other strategies to help reduce GHG emissions. Therefore, the Project would not conflict with an applicable GHG reduction plan, policy, or regulation. Impacts would be less than significant in this regard.

**Mitigation Measures:** No mitigation is required.

**Level of Significance:** Less Than Significant Impact.

## 5.4.5 CUMULATIVE IMPACTS

Tables 4-1 and 4-2 identify the related projects and other possible development determined as having the potential to interact with the Project to the extent that a significant cumulative effect may occur. The following discussions are included per topic area to determine whether a significant cumulative effect would occur.

### ● GREENHOUSE GAS EMISSIONS GENERATED BY THE PROPOSED PROJECT AND OTHER RELATED CUMULATIVE PROJECTS COULD HAVE A SIGNIFICANT IMPACT ON GLOBAL CLIMATE CHANGE.

**Impact Analysis:** As stated above, the Project would result in a significant impact regarding GHG emissions, as the Project would exceed the 4.8 MTCO<sub>2</sub>eq per capita per year project level GHG threshold. Despite the proposed Project Design Features, and compliance with ESMC requirements and Mitigation Measure GHG-1, the Project's GHG emissions would not be reduced below the threshold identified in Section 5.4.4.

It is generally the case that an individual project of this size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory.<sup>15</sup> GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective.<sup>16</sup> The additive effect of the Project's GHG emissions would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the Project, as well as other cumulative related projects, would be subject to all applicable regulatory requirements, which would further reduce GHG emissions. However, despite the implementation of Mitigation Measure GHG-1, the Project would result in a significant and unavoidable impact regarding GHG emissions. Therefore, the Project's cumulative GHG emissions would be considered significant and unavoidable.

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<sup>15</sup> California Air Pollution Control Officers Association, *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, 2008.

<sup>16</sup> Ibid.



**Mitigation Measures:** Refer to Mitigation Measure GHG-1.

**Level of Significance:** Significant and Unavoidable Impact.

## 5.4.6 SIGNIFICANT UNAVOIDABLE IMPACTS

Project implementation would result in a significant and unavoidable impact for the following areas:

- **Greenhouse Gas Emissions.** Implementation of the proposed Project Design Features, and compliance with ESMC requirements and Mitigation Measure GHG-1 would reduce Project-related GHG emissions to 5.9 MTCO<sub>2</sub>eq per capita per year, which would exceed the 4.8 MTCO<sub>2</sub>eq per capita per year project level GHG threshold. Therefore, impacts in this regard would be significant and unavoidable.
- **Cumulative Greenhouse Gas Emissions.** As stated above, Project-related GHG emissions would be significant and unavoidable despite the Project Design features, and implementation of ESMC requirements and Mitigation Measure GHG-1. Therefore, the Project's cumulative GHG emissions would be considered significant and unavoidable.

In order for the City to approve the Project, the City Council must adopt findings of fact in accordance with CEQA Guidelines § 15091, and adopt a Statement of Overriding Considerations in accordance with CEQA Guidelines § 15093.

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