

## 3.6 Greenhouse Gas Emissions

This section provides a discussion of global climate change, existing regulations pertaining to global climate change, and potential greenhouse gas (GHG) emissions resulting from development of the proposed project. The methods of analyzing emissions described in this section are consistent with the recommendations of the SCAQMD.

### 3.6.1 Environmental Setting

#### Regulatory Framework

##### *Federal*

The federal CAA requires USEPA to define national ambient air quality standards to protect public health and welfare in the U.S. The CAA does not specifically regulate GHG emissions; however, on April 2, 2007 the U.S. Supreme Court in *Massachusetts v. U.S. Environmental Protection Agency*, determined that GHGs are pollutants that can be regulated under the CAA. Currently, there are no federal regulations that establish ambient air quality standards for GHGs.

On December 7, 2009, USEPA adopted its Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the CAA (Endangerment Finding). The Endangerment Finding is based on Section 202(a) of the CAA, which states that the administrator (of USEPA) should regulate and develop standards for “emission[s] of air pollution from any class or classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.” The rule addresses Section 202(a) in two distinct findings. The first addresses whether the concentrations of the six key GHGs (carbon dioxide [CO<sub>2</sub>], methane [CH<sub>4</sub>], nitrous oxide [N<sub>2</sub>O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF<sub>6</sub>]) in the atmosphere threaten the public health and welfare of current and future generations. The second addresses whether the combined emissions of GHGs from new motor vehicles and motor vehicle engines contribute to atmospheric concentrations of GHGs and, therefore, contribute to the threat of climate change.

The Administrator of USEPA found that atmospheric concentrations of GHGs endanger the public health and welfare within the meaning of Section 202(a) of the CAA. The evidence supporting this finding consists of human activity resulting in “high atmospheric levels” of GHG emissions, which are likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wildfires, droughts, sea level rise, and higher intensity storms) are a threat to the public health and welfare. Therefore, GHGs were found to endanger the public health and welfare of current and future generations.

The administrator of USEPA also found that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. USEPA’s final findings respond to the 2007 U.S. Supreme Court decision that GHGs fit within

the CAA definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but, rather, allow USEPA to finalize the GHG standards proposed earlier in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation. These standards would be applicable to the project and are described in detail in the next section. All mobile sources, including trips generated by the project, would be required to comply with these regulations as they are implemented.

### **State**

The California ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California. Various statewide and local initiatives to reduce the State's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long term. Because every nation emits GHGs and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

There are currently no state regulations in California that establish ambient air quality standards for GHGs. However, California has passed laws directing ARB to develop actions to reduce GHG emissions, and several state legislative actions related to climate change and GHG emissions have come into play in the past decade.

### **Assembly Bill 1493**

In 2002, then-Governor Gray Davis signed AB 1493 (Pavley, Chapter 200, California Statutes of 2002; codified in California Health and Safety Code §§ 42823, 43018.5). AB 1493 requires that ARB develop and adopt, by January 1, 2005, regulations that achieve “the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the State.”

To meet the requirements of AB 1493, in 2004 ARB approved amendments to the CCR adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR 1900, 1961), and adoption of Section 1961.1 (13 CCR 1961.1) require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily for the transportation of persons), beginning with the 2009 model year. For passenger cars and light-duty trucks with a loaded vehicle weight (LVW) of 3,750 pounds or less, the GHG emission limits for the 2016 model year are approximately 37 percent lower than the limits for the first year of the regulations, the 2009 model year. For light-duty trucks with LVW of 3,751 pounds to gross vehicle weight

(GVW) of 8,500 pounds, as well as medium-duty passenger vehicles, GHG emissions would be reduced approximately 24 percent between 2009 and 2016.

On September 15, 2009, USEPA and the Department of Transportation's National Highway Safety Administration (NHTSA) proposed a national program to reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States. The combined USEPA and NHTSA standards that make up the proposed national program would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO<sub>2</sub> per mile, equivalent to 35.5 miles per gallon (mpg) if the automobile industry were to meet this CO<sub>2</sub> level solely through fuel economy improvements. Under the proposed national program, automobile manufacturers would be able to build a single light-duty national fleet that satisfies all requirements under both the national program and the standards of California and other states, while ensuring that consumers still have a full range of vehicle choices. In order to promote the adoption of the national program, ARB has adopted amendments to the GHG emissions standards for new passenger vehicles from 2009 through 2016. All mobile sources, including trips generated by the project, would be required to comply with these regulations as they are phased in.

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

Executive Order S-03-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the Secretary of California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the Governor and State Legislature describing progress made toward reaching the emission targets, impacts of global warming on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Secretary of CalEPA created the California Climate Action Team (CCAT) made up of members from various state agencies and commissions. CCAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government, and community actions, as well as through State incentive and regulatory programs.

#### **Assembly Bill 32 (California Global Warming Solutions Act of 2006)**

In September 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act (AB 32 (Nunez), Chapter 488, California Statutes of 2006; codified in California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap

on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires ARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. According to ARB's Scoping Plan, the 2020 target of 427 million metric tons (MMT) of CO<sub>2</sub>e requires the reduction of 169 MMTCO<sub>2</sub>e, or approximately 28.3 percent, from the state's projected 2020 business-as-usual (BAU) emissions level of 596 MMTCO<sub>2</sub>e. However, ARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. In August 2011, the Scoping Plan was re-approved by the Board and includes the Final Supplement to the Scoping Plan Functional Equivalent Document. This document includes expanded analysis of project alternatives as well as updates the 2020 emission projections in light of the current economic forecasts. Considering the updated 2020 BAU estimate of 507 MMTCO<sub>2</sub>e, a 16 percent reduction below the estimated BAU levels would be necessary to return to 1990 levels by 2020. The document also excludes one measure identified in the 2008 Scoping Plan that has been adopted and one measure that is no longer under consideration by ARB (ARB, 2011c).

#### **Senate Bill 1368**

SB 1368 (Perata, Chapter 598, Statutes of 2006; codified in Division 4.1, Chapter 3, Section 8340 of the Public Utilities Code) is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 required the California Public Utilities Commission (CPUC) to establish a GHG emission performance standard for baseload generation from investor-owned utilities. CPUC adopted a GHG Emissions Performance Standard in January 2007. The California Energy Commission (CEC) adopted consistent regulations for implementing and enforcing SB 1368 for the state's publicly-owned utilities in August 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and CEC.

#### **Executive Order S-1-07**

Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs ARB

to determine whether this low carbon fuel standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 ARB approved the proposed regulation to implement the LCFS. The LCFS will reduce GHG emissions from the transportation sector in California by about 16 MMT in 2020. The LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. One standard is established for gasoline and the alternative fuels that can replace it. A second similar standard is set for diesel fuel and its replacements.

The standards are "back-loaded;" that is, there are more reductions required in the last five years, than the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the LCFS will be based on a combination of strategies involving lower carbon fuels and more efficient, advanced-technology vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity are also low carbon fuels and result in significant reductions of GHGs when used in fuel cell or electric vehicles due to significant vehicle power train efficiency improvements over conventionally-fueled vehicles. As such, these fuels are included in the LCFS as low carbon options. Other fuels may be used to meet the standards and are subject to meeting existing requirements for transportation fuels.

#### **Senate Bill 97**

SB 97, signed August 2007 (Dutton, Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. The bill directs the California Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency, guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the *CEQA Guidelines* for GHG emissions, as required by SB 97. On February 16, 2010, the Office of Administrative Law approved the amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The amendments became effective on March 18, 2010.

#### **Senate Bills 1078 and 107 and Executive Order S-14-08**

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, Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewables Energy Standard to 33 percent renewable power by 2020. In April 2011, Governor Jerry Brown signed SB 2X, that created a legislative mandate codifying the 33 percent Renewables Portfolio Standard into law.

Electricity services to the project area are provided by Southern California Edison (SCE). Currently, 19.4 percent of SCE's energy mix comes from renewable energy including wind, solar, biomass, small hydropower and geothermal sources (CPUC, 2011).

### **Senate Bill 375**

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan (RTP). ARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meet certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

### **ARB Early Action Measures**

In June 2007, ARB directed staff to pursue 37 early actions for reducing GHG emissions under AB 32 (California Health and Safety Code Division 25.5, Sections 38500 - 38599). The broad spectrum of strategies to be developed – including a LCFS, regulations for refrigerants with high global warming potential, guidance and protocols for local governments to facilitate GHG reductions, and green ports – reflects the government's responsive actions to immediately address GHGs (ARB, 2007).

In addition to approving the 37 GHG reduction strategies, ARB directed staff to further evaluate early action recommendations made at the June 2007 meeting, and to report back to ARB within six months. ARB's approach suggested a desire to try to pursue greater GHG emissions reductions in California in the near-term. ARB staff evaluated all recommendations submitted by several stakeholders and several internally-generated staff ideas, and published a draft list of early action measures in September 2007. The list was expanded to 44 measures in October 2007

(ARB, 2007). The Board has also identified nine Discrete Early Action measures to date, including potential regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations, and other sources.

### **ARB Climate Change Scoping Plan**

On December 11, 2008, ARB adopted its Scoping Plan, which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations (ARB, 2008). ARB's Scoping Plan contains the main strategies California will implement to reduce CO<sub>2</sub>e emissions by 169 MMT, or approximately 28.3 percent, from the state's projected 2020 emissions level of 596 MMT of CO<sub>2</sub>e under a BAU scenario. In August 2011, the Scoping Plan was re-approved by the Board and includes the Final Supplement to the Scoping Plan Functional Equivalent Document. This document includes expanded analysis of project alternatives as well as updates the 2020 emission projections in light of the current economic forecasts. Considering the updated 2020 BAU estimate of 507 MMT CO<sub>2</sub>e, a 16 percent reduction below the estimated BAU levels would be necessary to return to 1990 levels by 2020. The document also excludes one measure identified in the 2008 Scoping Plan that has been adopted and one measure that is no longer under consideration by ARB (ARB, 2011b).

ARB's Scoping Plan calculates 2020 BAU emissions as the emissions that would be expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors, i.e. transportation, electrical power, commercial, residential, industrial etc. ARB used three-year average emissions, by sector, for 2002-2004 to forecast emissions to 2020. At the time ARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available. The measures described in ARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32.

ARB's Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. ARB's Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO<sub>2</sub>e);
- The LCFS (15.0 MMT CO<sub>2</sub>e);
- Energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems (26.3 MMT CO<sub>2</sub>e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO<sub>2</sub>e).

ARB has identified a GHG reduction target of 5 MMT (of the 174 MMT total) for local land use changes (Table 2 of ARB's Scoping Plan), by Implementation of Reduction Strategy T-3 regarding Regional Transportation-Related GHG Targets. Additional land use reductions may be achieved as SB 375 is implemented. ARB's Scoping Plan states that successful implementation of the plan relies on local governments' land use, planning, and urban growth decisions because

local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. ARB's Scoping Plan does not include any direct discussion about GHG emissions generated by construction activity.

ARB's Scoping Plan expands the list of nine Discrete Early Action Measures to a list of 39 Recommended Actions contained in Appendices C and E of ARB's Scoping Plan. These measures are presented in **Table 3.6-1**.

### **CEQA Guidelines**

In 2007, the State Legislature passed SB 97, which required amendment of the *CEQA Guidelines* to incorporate analysis of, and mitigation for, GHG emissions from projects subject to CEQA. The California Natural Resources Agency adopted these amendments on December 30, 2009. They took effect on March 18, 2010, after review by the Office of Administrative Law and filing with the Secretary of State for inclusion in the California Code of Regulations.

The Guidelines revisions include a new section (Section 15064.4) that specifically addresses the potential significance of GHG emissions. Section 15064.4 calls for a "good-faith effort" to "describe, calculate or estimate" GHG emissions. Section 15064.4 further states that the analysis of the significance of any GHG impacts should include consideration of the extent to which the project would increase or reduce GHG emissions; exceed a locally applicable threshold of significance; and comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." The new guidelines also state that a project may be found to have a less-than-significant impact on GHG emissions if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (Section 15064(h)(3)). Importantly, however, the *CEQA Guidelines* do not require or recommend a specific analytical methodology or provide quantitative criteria for determining the significance of GHG emissions.

No quantitative significance threshold is included in the Amendments. The *CEQA Guidelines* afford the customary deference provided to lead agencies in their analysis and methodologies. OPR emphasizes the necessity of having a consistent threshold available to analyze projects, and the analyses should be performed based on the best available information. For example, if a lead agency determines that GHGs may be generated by a proposed project, the agency is responsible for assessing GHG emissions by type and source. The *CEQA Guidelines* Amendments provide the following recommendations for determining the significance of GHG emissions under Section 15064.4:

- (a) The determination of the significance of GHG emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:



**TABLE 3.6-1  
RECOMMENDED ACTIONS FROM ARB CLIMATE CHANGE SCOPING PLAN**

<b>ID #</b>	<b>Sector</b>	<b>Strategy Name</b>
T-1	Transportation	Pavley I and II – Light-Duty Vehicle GHG Standards
T-2	Transportation	LCFS (Discrete Early Action)
T-3	Transportation	Regional Transportation-Related GHG Targets
T-4	Transportation	Vehicle Efficiency Measures
T-5	Transportation	Ship Electrification at Ports (Discrete Early Action)
T-6	Transportation	Goods-movement Efficiency Measures
T-7	Transportation	Heavy Duty Vehicle GHG Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)
T-8	Transportation	Medium and Heavy-Duty Vehicle Hybridization
T-9	Transportation	High Speed Rail
E-1	Electricity and Natural Gas	Increased Utility Energy efficiency programs More stringent Building and Appliance Standards
E-2	Electricity and Natural Gas	Increase Combined Heat and Power Use by 30,000GWh
E-3	Electricity and Natural Gas	Renewables Portfolio Standard
E-4	Electricity and Natural Gas	Million Solar Roofs
CR-1	Electricity and Natural Gas	Energy Efficiency
CR-2	Electricity and Natural Gas	Solar Water Heating
GB-1	Green Buildings	Green Buildings
W-1	Water	Water Use Efficiency
W-2	Water	Water Recycling
W-3	Water	Water System Energy Efficiency
W-4	Water	Reuse Urban Runoff
W-5	Water	Increase Renewable Energy Production
W-6	Water	Public Goods Charge (Water)
I-1	Industry	Energy Efficiency and Co-benefits Audits for Large Industrial Sources
I-2	Industry	Oil and Gas Extraction GHG Emission Reduction
I-3	Industry	GHG Leak Reduction from Oil and Gas Transmission
I-4	Industry	Refinery Flare Recovery Process Improvements
I-5	Industry	Removal of CH <sub>4</sub> Exemption from Existing Refinery Regulations
RW-1	Recycling and Waste Management	Landfill CH <sub>4</sub> Control (Discrete Early Action)
RW-2	Recycling and Waste Management	Additional Reductions in Landfill CH <sub>4</sub> – Capture Improvements
RW-3	Recycling and Waste Management	High Recycling/Zero Waste
F-1	Forestry	Sustainable Forest Target
H-1	High GWP Gases	Motor Vehicle Air Conditioning Systems (Discrete Early Action)
H-2	High GWP Gases	SF <sub>6</sub> Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)
H-3	High GWP Gases	Reduction in Perfluorocarbons in Semiconductor Manufacturing (Discrete Early Action)
H-4	High GWP Gases	Limit High GWP Use in Consumer Products (Discrete Early Action, Adopted June 2008)
H-5	High GWP Gases	High GWP Reductions from Mobile Sources
H-6	High GWP Gases	High GWP Reductions from Stationary Sources
H-7	High GWP Gases	Mitigation Fee on High GWP Gases
A-1	Agriculture	CH <sub>4</sub> Capture at Large Dairies

SOURCE: ARB, 2008.

- (1) Use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or
  - (2) Rely on a qualitative analysis or performance based standards.
- (b) A lead agency may consider the following when assessing the significance of impacts from GHG emissions on the environment:
- (1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
  - (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
  - (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The Amendments also include a new Subdivision 15064.7(c) which clarifies that in developing thresholds of significance, a lead agency may appropriately review thresholds developed by other public agencies, or recommended by other experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.

In addition, the Amendments include a new Section 15183.5 that provides for tiering and streamlining the analysis of GHG emissions. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of GHG emissions in the region over a specified time period.

Finally, the Amendments add a new set of environmental checklist questions (VII. Greenhouse Gas Emissions) to the *CEQA Guidelines* Appendix G, which are provided below in Section 3.6.2, under Thresholds of Significance.

#### **California Green Buildings Standard Code**

In January 2010 the State of California adopted the 2010 California Green Building Standards Code (CALGreen), scheduled to become effective in January 2011. CALGreen has mandatory Green Building provisions for all new residential buildings that are three stories or fewer (including hotels and motels) and all new non-residential buildings of any size that are not additions to existing buildings.

As of January 2011, California requires that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant emitting finish materials. CALGreen's mandatory measures establish a minimum for green construction practices, and incorporate environmentally responsible buildings into California cities. CALGreen allows jurisdictions to adopt stricter requirements than the mandatory minimum requirements in CALGreen.

### ***Local***

#### **County of Orange General Plan**

The County's General Plan does not include any specific goals and objectives related to GHGs.

#### **Foothill/Trabuco Specific Plan**

The F/TSP does not include any goals or objectives related to GHGs.

#### **South Coast Air Quality Management District**

As an interim method for determining significance under CEQA until statewide significance thresholds are established, SCAQMD developed a draft tiered flowchart in 2008 for determining significance thresholds for GHGs and CEQA for industrial projects where SCAQMD is acting as the lead agency. In December 2008, SCAQMD adopted a 10,000 MTCO<sub>2</sub>e/year for industrial facilities, but only with respect to projects where SCAQMD is the lead agency. SCAQMD has not adopted a threshold for residential or commercial projects at the time of this writing.

The SCAQMD flowchart uses a tiered approach in which a proposed project is deemed to have a less than significant impact related to GHG emissions when any of the following conditions are met:

- GHG emissions are within GHG budgets in an approved regional plan;
- Incremental increases in GHG emissions due to the project are below the defined Significance Screening Levels, or Mitigated to Less than the Significance Screening Level;
- Performance standards are met by incorporating project design features and/or implementing emission reduction measures; and
- Carbon offsets are made to achieve target significance screening level.

### **Existing Conditions**

This section presents a discussion of existing climate conditions, the current state of climate change science, and GHG emissions sources in California.

### ***Affected Environment***

#### **Climate**

Climate is the accumulation of daily and seasonal weather events over a long period of time, whereas weather is defined as the condition of the atmosphere at any particular time and place (Ahrens, 2003). The project area is located in the Basin with a distinctive climate determined by its terrain and geographic location. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light

average wind speeds. The usually mild climate is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. The Plan area is in a climatic zone characterized as dry summer subtropical or Mediterranean.

### **Climate Change Overview**

Various gases in the earth's atmosphere, classified as GHGs, play a critical role in determining its surface temperature. Solar radiation enters earth's atmosphere from space, and a portion of the radiation is absorbed by the earth's surface. Earth re-radiates this energy back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation (that otherwise would have escaped back into space) is now retained in the atmosphere, and results in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, CFCs, PFCs, and SF<sub>6</sub>. Much of the scientific literature suggests that human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of earth's climate, known as global climate change or global warming. While there is some debate regarding this issue, it is unlikely that global climate change of the past 50 years can be explained without contribution from human activities (IPCC, 2007).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one year to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO<sub>2</sub> is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO<sub>2</sub> emissions, approximately 54 percent is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within one year, whereas the remaining 46 percent of human-caused CO<sub>2</sub> emissions remains stored in the atmosphere (Seinfeld and Pandis, 1998).

Similarly, impacts of GHGs are borne globally, as opposed to localized air quality effects of criteria air pollutants and toxic air contaminants. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, it is clear that the quantity is enormous, and no single project would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

### Greenhouse Gas Emission Sources

According to much of the scientific literature on this topic, emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors (ARB, 2010). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB, 2010). Emissions of CO<sub>2</sub> are byproducts of fossil fuel combustion. Methane, a highly potent GHG, results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. NO<sub>2</sub> is also largely attributable to agricultural practices and soil management. Carbon dioxide sinks, or reservoirs, include vegetation and the ocean, which absorb CO<sub>2</sub> through sequestration and dissolution, respectively, two of the most common processes of CO<sub>2</sub> sequestration.

California is the 12th to 16th largest emitter of CO<sub>2</sub> in the world (CEC, 2006). California produced 478 million gross metric tons of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) in 2008 (ARB, 2010). CO<sub>2</sub>e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. Expressing emissions in CO<sub>2</sub>e takes the contributions to the greenhouse effect of all GHG emissions and converts them to the equivalent effect that would occur if only CO<sub>2</sub> were being emitted. This measurement, known as the global warming potential of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, as described in Appendix C, Calculation References, of the General Reporting Protocol of the California Climate Action Registry (CCAR, 2009), one ton of CH<sub>4</sub> has the same contribution to the greenhouse effect as approximately 21 tons of CO<sub>2</sub>. Therefore, CH<sub>4</sub> is a much more potent GHG than CO<sub>2</sub>.

Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2008, accounting for 37 percent of total GHG emissions in the state (ARB, 2010). This sector was followed by the electric power sector (including both in-state and out-of-state sources) (25 percent) and the industrial sector (20 percent) (ARB, 2010).

### 3.6.2 Thresholds of Significance

According to Appendix G of the *CEQA Guidelines* and the County of Orange Environmental Analysis Checklist, a project would have a significant adverse effect on GHG emissions if it would:

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

As noted above, the increased concentration of GHGs in the atmosphere has been linked to global warming, which can lead to climate change. Construction and operation of the proposed project or the non-clustered scenario would incrementally contribute to GHG emissions along with past,

present and future activities. As such, impacts of GHG emissions are analyzed here on a cumulative basis.

Currently, while SCAQMD has issued proposed standards and guidelines, there is no adopted state or local standard for determining the cumulative significance of the proposed project's or the non-clustered scenario's GHG emissions on global climate change. However, scientific evidence suggests that even without a net increase in GHG emissions, effects would remain significant due to past and existing emissions levels. In the most recent 2007 IPCC assessment report, the international body acknowledges that anthropogenic warming and sea level rise would continue for centuries due to the time scales associated with climate processes and feedback mechanisms even if GHG concentrations were to be stabilized. IPCC further found that both past and future anthropogenic CO<sub>2</sub> emissions will continue to contribute to warming and sea level rise for more than a millennium, due to the time scales required for the removal of this gas from the atmosphere (IPCC, 2007). Further, the IPCC assessment noted that defining what is dangerous anthropogenic interference with the climate system and, consequently, the limits to be set for policy purposes are complex tasks that can only be partially based on science; as such definitions inherently involve normative judgments. Therefore, the consideration of regulatory guidance is helpful in evaluating the significance of GHG emissions on climate change.

**SCAQMD:** SCAQMD has adopted Significance Screening Levels for industrial projects (10,000 MT/year CO<sub>2</sub>e) for which it is the lead agency. SCAQMD is not the lead agency for the proposed project, and, therefore, the adopted industrial threshold is not applicable to the proposed project. SCAQMD has also released, but not adopted, draft thresholds for commercial and residential projects for which it is a responsible agency. SCAQMD has proposed a 3,000 MT/year CO<sub>2</sub>e threshold for mixed use development, a 3,500 MT/year CO<sub>2</sub>e threshold for residential development and a 1,400 MT/year CO<sub>2</sub>e threshold for commercial development. These threshold options are being evaluated through the GHG Thresholds Working Group and have not been adopted as of this writing (SCAQMD, 2010).

**ARB's AB 32 Scoping Plan:** With the passage of AB 32, California adopted a goal of reducing state-wide emissions to 1990 levels by 2020 and directed ARB to develop a Scoping Plan to meet that goal utilizing cost-effective reductions. This threshold is consistent with the *CEQA Guidelines* that include the following checklist question in Appendix G: "*Would the project...[c]onflict with any applicable plan, policy or regulation of an agency adopted for the purposes of reducing the emissions of greenhouse gases.*"

The primary purpose of ARB's Scoping Plan is to develop a set of measures that will provide the maximum technologically feasible and cost-effective GHG emission reductions. ARB's Scoping Plan includes, among other items, energy conservation measures, use of new energy efficient technologies, a cap-and-trade emissions program as well as transportation and land use standards and policies. Full implementation of ARB's Scoping Plan depends upon actions taken by other regulatory agencies (state and federal) including future ARB actions. ARB's Scoping Plan notes that 38 percent of GHG in the state result from the transportation sector and that the sector is expected to grow 25 percent by 2020 without GHG reduction measures. Accordingly, the greatest

GHG reductions come from vehicle emissions standards, which are estimated at 31.7 MMT CO<sub>2</sub>E of reductions expected from implementation of the Pavley standards for Light-Duty Vehicle GHG Standards. A complete list of ARB's Scoping Plan measures needed to obtain AB32 goals, as well as the goals of Executive Order S-03-05, are included in Table 3.6-1, above.

However, it is important to note that even if California reaches its 2020 goal, it is likely that the reductions will be offset by emissions increases in developing countries such as Brazil, Russia, India and China and that significant effects of climate change, such as global warming and sea level rise, will nevertheless occur due to the continuing effects of past and existing levels of emissions. In the absence of worldwide reduction commitments that are fully funded, any project level reduction measures will not alter the existing significant effects on global temperatures and sea levels.

ARB has determined that, absent AB 32 and other California climate change laws and mandates, California's projected 2020 GHG emissions would comprise 507 MMTCO<sub>2</sub>e according to ARB's Scoping Plan, as updated in 2011. ARB has also determined that California's 1990 GHG emissions were 427 MMTCO<sub>2</sub>e pursuant to the Scoping Plan. Accordingly, to satisfy the requirements of AB32, California needs to reduce its overall 2020 emissions for all sectors by 80 MMTCO<sub>2</sub>e, or 16 percent below the BAU 2020 projection. BAU is defined as emissions that would be generated prior to AB 32-related emission restrictions beginning in 2006 (e.g., Pavley standards). Achieving the 1990 level of emissions statewide represents California's fair share contribution toward stabilizing global warming and thus mitigating its environmental impacts (BAAQMD, 2011) The BAU 2020 projections account for growth (i.e., development) and thus apply to existing and future development.

Within the context of this information, a project would have a significant unmitigated cumulative impact if it did not provide a fair share contribution toward achieving the AB 32 goal of achieving 1990 levels of GHG emissions by 2020 statewide. The above calculations provide substantial evidence that if new development projects were constructed and operated in a manner that was 16 percent less than the BAU 2020 projection, it would provide its fair share and avoid a significant unmitigated cumulative impact to GHGs. Implicit in the concept of fair share mitigation measures is that new development pay for its fair share, but not the fair share of existing development. The *CEQA Guidelines* embrace this principle by legally requiring mitigation measures have a nexus with the project's impacts as well as requiring such mitigation measures to be roughly proportionate to the project's impacts (14 Cal Code Regs §§15041(a), 15126.4(a)(4)).

While an individual project's emissions would amount to a small fraction of statewide GHG emissions, AB 32's assessment of global warming as posing a "serious threat" warrants consideration of the impact of emissions from the project on climate change as cumulatively considerable, and triggers compliance with the AB 32, 16 percent reduction from BAU 2020 requirement.

Based on all the above, for the purposes of this analysis, the threshold that will be utilized is whether or not emissions associated with the proposed project or non-clustered scenario would be

reduced by a total of at least 16 percent from what would have otherwise occurred from the project under BAU 2020 conditions, taking into consideration emission reductions from regulatory requirements adopted for the purpose of implementing AB 32.

### 3.6.3 Methodology

This section describes the methodologies and assumptions used for identifying and analyzing the proposed project's emissions of GHGs. The discussion describes the methods and assumptions used to conduct the analysis. The analysis of emissions of GHGs associated with the proposed project is considered on a cumulative basis.

SCAQMD has not formally adopted a significance threshold for GHG emissions generated by a proposed project (for which SCAQMD is not the lead agency), or a uniform methodology for analyzing impacts related to GHG emissions on global climate change. Similarly, the County has not adopted any significance criteria or guidelines for GHG analysis. Pursuant to full disclosure and according to OPR's *CEQA Guidelines* that state, "A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project," the construction and operational emissions associated with the project have been quantified using methods described below.

Construction-related GHG emissions were estimated using a similar methodology to that described for criteria air pollutants in Section 3.2, *Air Quality*, of this Draft EIR. SCAQMD recommends the use of CalEEMod for estimating construction and operational emissions associated with land use projects. CalEEMod incorporates the most recent (2007) versions of the EMFAC and Off-Road models developed by ARB. CalEEMod estimates the emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O associated with construction-related GHG sources such as off-road construction equipment, material delivery trucks, soil haul trucks, and construction worker vehicles. The GHG analysis incorporates similar assumptions as the air quality analysis for consistency.

Operational emissions of GHGs, including GHGs generated by direct and indirect sources, are estimated according to the recommended methodologies from SCAQMD. Direct sources include emissions such as vehicle trips, natural gas consumption, and landscape maintenance. Indirect sources include off-site emissions occurring as a result of the project's operations such as electricity and water consumption. Direct and indirect emissions associated with area and mobile sources and energy and water consumption, respectively, were estimated using CalEEMod. Modeling was based on project-specific data (e.g., size and type of proposed uses) and vehicle trip information from the traffic analysis prepared for the project (RK Engineering Group, Inc., 2012; see Appendix K of this Draft EIR).

CalEEMod estimates energy use from residential land uses based on the Residential Appliance Saturation Survey reported by CEC. Emissions from energy use are estimated based on USEPA's *Compilation of Air Pollutant Emission Factors* (AP-42) emission factors and the California Climate Action Registry's General Reporting Protocol. Water consumption data was obtained from Table ES-1 of the Pacific Institute's "Waste Not Want Not" report (Pacific Institute, 2003).



Electricity intensity factors were obtained from the 2006 CEC report, “Refining Estimates of Water-Related Energy Use in California” (CEC, 2006b). CalEEMod calculates the indirect GHG emissions associated with solid waste that is disposed of at a landfill. The program uses annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecycle) data for individual land uses. The program quantifies the GHG emissions associated with the decomposition of the waste which generates methane based on the total amount of degradable organic carbon. Default landfill gas concentrations are used as reported in Section 2.4 of AP-42 (SCAQMD, 2011).

It is important to note that all CO<sub>2</sub> emissions from implementation of the proposed project or non-clustered scenario may not necessarily be considered “new” emissions, given that a project itself does not create “new” emitters (people) of GHGs, at least not in the traditional sense. In other words, the GHG emissions for a development project are not necessarily all new GHG emissions in the local area, state, or world. To a large degree, commercial development projects can be seen as reacting to increased demand from the growing population and economy, and are not in themselves creators of economic or population growth. Given the global nature of GHG emissions, “new” global GHG emissions are those caused by economic growth and population growth (births); local development projects accommodate such growth. Emissions of GHGs are, however, influenced by the location and design of projects, to the extent that they can influence travel to and from the projects and to the degree the projects are designed to maximize energy efficiency and GHG efficiency. Emissions calculations were prepared as a worst-case analysis. For example, calculations assume that all emissions from the project are “new,” in the sense that, absent the development of the project, these emissions would not occur.

The methodology used in this assessment to analyze the project’s contribution to global climate change includes a calculation of GHG emissions and a discussion about the context in which they can be evaluated. The purpose of calculating the project’s GHG emissions is for informational and comparison purposes, as neither ARB nor SCAQMD have adopted a quantifiable threshold for evaluating whether project-generated GHG’s would be considered a significant impact. The significance analysis considers the numeric level of emissions generated by the proposed project or the non-clustered scenario for a BAU scenario and with GHG reduction measures, to determine whether the project complies with the required reductions in GHG emissions under AB 32 (quantitative approach). In addition, significance is assessed by determining whether the proposed project or the non-clustered scenario is consistent with or obstructs the Recommended Actions identified by ARB’s Scoping Plan, which includes nine Early Action Measures (qualitative approach).

### 3.6.4 Project Design Features

The project includes the following design features proposed to control GHG emissions impacts apply to both the proposed project and the non-clustered scenario. All project design features will be included in the Mitigation Monitoring and Reporting Program and will be monitored to ensure completion, in the same manner as the project’s mitigation measures.

PDF-48 The project has been designed so that stormwater will be collected and cleansed through a first flush treatment system.

PDF-49 The Preliminary Landscape Plan for the project has been designed to:

- Preserve open space areas and create new landscaping that would assist in carbon intake and minimize surface water runoff.
- Incorporate the use of native/drought tolerant plant materials.
- Utilize only a small percentage of turf in the common area landscape.

PDF-50 The project site is located adjacent to a Class II bikeway.

### 3.6.5 Project Impacts

**Impact 3.6.1:** Generate significant amounts of greenhouse gas emissions.

**Significance Standard for Impact 3.6.1:** Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

#### Proposed Project

The proposed project would generate GHG emissions from a variety of sources. First, GHG emissions would be generated during construction of the project. Once fully operational, the proposed project's operations would generate GHG emissions from an increase in both area sources and mobile sources. Indirect source emissions include electrical consumption, water and wastewater usage (transportation) and waste disposal. Mobile (direct) sources of air pollutants associated with the proposed project would consist of motor vehicles trips generated by residents and visitors.

#### Construction Emissions

ARB's Scoping Plan does not identify reduction measures for construction activities. However, for completeness, construction emissions from the proposed project were estimated using the CalEEMod emissions inventory model developed by SCAQMD, who recommends that construction GHG emissions be amortized over a 30-year period and added to operational emission estimates (SCAQMD, 2008). As shown in **Table 3.6-2**, estimated GHG emissions from construction during the build-out of the proposed project would average approximately 2,987 metric tons of CO<sub>2</sub>e (100 metric tons amortized over 30 years).

**TABLE 3.6-2  
ESTIMATED CONSTRUCTION AND OPERATIONS-RELATED GREENHOUSE GAS EMISSIONS –  
PROPOSED PROJECT (BUSINESS-AS-USUAL)**

<b>Emission Source</b>	<b>Proposed Project BAU EmissionsCO<sub>2</sub>e (MT/yr)</b>
<b>Construction</b>	
Total	2,987
Construction (Amortized over 30 years)	100
<b>Operations</b>	
Mobile Sources	1,833
Energy Consumption	270
Water Consumption	29
Solid Waste	35
Area Source	49
<b>TOTAL</b>	<b>2,316</b>

NOTES: CO<sub>2</sub>e= carbon dioxide equivalent; MT/yr = metric tons per year; see Appendix C for CalEEMod model output.

SOURCE: ESA, 2012.

However, this value accounts only for exhaust emissions of GHGs that would be generated by heavy-duty equipment, haul trucks, and vehicle trips. Additional GHG emissions would also be “embodied” in the materials selected for construction, and the level of embodied GHG emissions can vary substantially according to which materials are selected. This is particularly the case for construction of buildings and infrastructure that involve high quantities of cement, which is a key ingredient of concrete, given that ARB has identified cement production as an energy-intensive, GHG-intensive industry (ARB, 2008). In fact, ARB has included cement plants as a separate emissions sector in its demand-based GHG inventory for the state (ARB, 2008). These embodied emissions are sometimes referred to as “lifecycle emissions.”

The California Natural Resources Agency (CNRA) has stated that lifecycle analyses are not required under CEQA; and in December 2009, CNRA issued new energy conservation guidelines for EIRs that make no reference to lifecycle emissions. The CNRA explained that: (1) there exists no standard regulatory definition for lifecycle emissions; and (2) even if a standard definition for ‘lifecycle’ existed, the term might be interpreted to refer to emissions “beyond those that could be considered ‘indirect effects’” as defined by the *CEQA Guidelines*, and therefore, beyond what an EIR is required to estimate.

### **Operational Emissions**

#### **Indirect Sources**

Area and indirect sources associated with the proposed project would primarily result from electricity and natural gas consumption, water and wastewater transport (the energy used to pump water and wastewater to and from the project site, respectively), and solid waste generation. GHG emissions from electricity consumed on the site would be generated off-site by fuel combustion at the electricity provider. GHG emissions from water and wastewater transport are also indirect

emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point.

CalEEMod estimates GHG emissions from electrical usage using utility-specific emission factors. The proposed project would also indirectly result in emissions of GHGs as the result of electricity demand. Using the methodology contained in CalEEMod, which includes the emission factors for SCE's electricity generation sources, the proposed project would result in 123 MT/year of CO<sub>2</sub>e based on estimated project-related increase grid demand of 420 megawatt-hours (MWh) per year. BAU values for electricity-related emissions do not include the 33 percent Renewable Portfolio Standard to be achieved by SCE by 2020. Annual natural gas use for the proposed project was estimated by CalEEMod to be 2,748,550 thousand British Thermal Units (kBTU) and the resulting GHG emissions would be 147 MT/year. Energy-related emissions are based on the pre-AB 32 requirements to account for the BAU scenario as defined above.

The proposed project would also result in emissions of GHGs as the result of solid waste generation. CalEEMod estimates that the proposed project would lead to a solid waste generation increase of 76 tons per year of landfill-bound waste and would generate approximately 35 MT/year of CO<sub>2</sub>e. The model quantifies the GHG emissions associated with the decomposition of the waste which generates methane based on the total amount of degradable organic carbon. Default landfill gas concentrations are used as reported in Section 2.4 of AP-42.

Emissions from water and wastewater were calculated using an average daily water usage increase of 6.9 million gallons per year under the proposed project and emission factors from the CEC (CEC, 2006b). Wastewater emissions also include emissions from aerobic treatment processing.

### **Mobile Emission Sources**

The proposed project would generate mobile source emissions from motor vehicle trips generated by an increase in residents and visitors accessing the project site. CalEEMod incorporates GHG emission factors from ARB's EMFAC2007 model. The BAU values in Table 3.6-2 primarily reflect the lack of two important GHG reduction measures. First, mobile vehicle emissions under the BAU scenario would not benefit from the implementation of either the Pavley vehicle emission reductions or the Low Carbon Fuel Standard. As CalEEMod does not currently provide a separate data output providing an estimate of reduction from these two regulations, it was necessary to use the URBEMIS 2007 model to calculate the CO<sub>2</sub> emissions generated without implementation of the Pavley standards and the LCFS using the same vehicle miles travelled as calculated by CalEEMod. Adding an increment to account for emissions of CH<sub>4</sub> and N<sub>2</sub>O, a BAU vehicle emissions estimate of 1,833 MT per year of CO<sub>2</sub>e was calculated.

### **Total GHG Emissions**

In order to estimate the net reduction of GHG emissions from the proposed project inclusive of its sustainability measures compared to a BAU scenario, it was necessary to calculate emissions that would occur under a non-AB 32 environment without project sustainability features. Table 3.6-2 presents the total GHG emissions that would be generated by the proposed project under BAU

conditions (detailed calculations are included in Appendix G). A sum of both direct and indirect GHG emissions resulting from operation of the proposed project would result in a total of 2,316 MT/year of CO<sub>2</sub>e. Of these emissions, 1,833 MT/year are from mobile sources and 483 MT/year are from other (energy, water, waste, and construction) sources.

The proposed project would lead to an increase in GHG emissions under a BAU scenario. To be consistent with the goals of AB 32, the proposed project would need to reduce BAU emissions by 16 percent to ensure compliance with reductions required under AB 32. Compliance with AB 32 is utilized as a metric to assess the proposed project’s GHG emissions since the *CEQA Guidelines* do not identify a quantitative threshold for significance.

With adherence to Mitigation Measures MM 3.6-1 through MM 3.6-3, the proposed project’s GHG emissions would be reduced by a minimum of 18 percent from the BAU scenario as shown in **Table 3.6-3**.

**TABLE 3.6-3  
GREENHOUSE GAS EMISSIONS – PROPOSED PROJECT (MITIGATED)**

<b>Emission Source</b>	<b>Proposed Project CO<sub>2</sub>e (MT/yr)</b>
<b>Construction</b>	
Total	2,987
Construction (Amortized over 30 years)	100
<b>Operations</b>	
Mobile Sources <sup>1</sup>	1,476
Energy Consumption <sup>2</sup>	230
Water Consumption <sup>3</sup>	25
Solid Waste <sup>4</sup>	28
Area Source	49
<b>TOTAL</b>	<b>1,908</b>
<b>BAU Emissions (MT/yr)</b>	<b>2,316</b>
<i>Percent reduction from BAU</i>	<i>18%</i>

NOTES: CO<sub>2</sub>e= carbon dioxide equivalent; MT/yr = metric tons per year; see Appendix G for calculation details.

<sup>1</sup> Mobile source emissions, as estimated by CalEEMod, include the reductions associated with the Pavley regulations and the Low Carbon Fuel Standard. BAU mobile source emissions were estimated using URBEMIS 2007.

<sup>2</sup> Energy-related emissions under the BAU scenario were estimated using the Title 24 2005 requirements, consistent with ARB’s Scoping Plan. The California Energy Commission estimates that the Title 24 2008 standards represent a 22.7 percent and 8.2 percent improvement over the 2005 standards for electricity and natural gas, respectively. Additionally, the project would comply with CALGreen measures listed above and would exceed Title 24 2008 standards by a minimum of 10 percent. GHG reductions were estimated based on the CAPCOA guidance for GHG quantification (CAPCOA, 2010). Reduced emissions also include compliance with the Renewables Portfolio Standard

<sup>3</sup> Water use reductions are based on the use of low-flow fixtures as estimated by CalEEMod.

<sup>4</sup> It was assumed that solid waste generation would be reduced by 20% through the recycling center and compliance with CALGreen requirements.

SOURCE: ESA, 2012.

Additionally, as discussed above, SCAQMD has not adopted a threshold of significance for GHG emissions from residential projects. The proposed threshold for residential development being evaluated by SCAQMD is 3,500 MT/year CO<sub>2</sub>e. The proposed project's GHG emissions would be 2,316 MT/year CO<sub>2</sub>e, below the threshold under consideration. If the threshold is adopted by SCAQMD by the time the EIR is certified, the proposed project's impact with respect to GHG emissions under the SCAQMD threshold would also be less than significant.

**Impact Determination:** The proposed project would lead to an increase in GHG emissions; however, with adherence to Mitigation Measures MM 3.6-1 through MM 3.6-3, emissions would be reduced by a minimum of 18 percent from the BAU scenario. In addition Mitigation Measures MM 3.2-1 through MM 3.2-3 (see Section 3.2, *Air Quality*, of this Draft EIR) would also aid in reducing GHG emissions during construction. Further, the project design features have been included to further reduce GHG emissions including collecting and cleaning stormwater through a first flush system (PDF-48), preservation of open space and provision of landscaping (PDF-49), and the location of the project adjacent to a bike path (PDF-50). The project would be consistent with the goals of AB 32 and the impact would be less than significant.

## Non-Clustered Scenario

Similar to that described above for the proposed project, the non-clustered scenario would generate GHG emissions from a variety of sources. First, GHG emissions would be generated during construction of the project. Once fully operational, the non-clustered scenario's operations would generate GHG emissions from an increase in both area sources and mobile sources. Indirect source emissions include electrical consumption, water and wastewater usage (transportation) and waste disposal. Mobile sources of air pollutants associated with the non-clustered scenario would consist of motor vehicles trips generated by residents and visitors. **Table 3.6-4** presents the total GHG emissions that would be generated by the non-clustered scenario under a BAU scenario. BAU emissions were estimated in a similar manner as defined under the proposed project impacts (detailed calculations are included in Appendix G of this Draft EIR).

A sum of both direct and indirect GHG emissions resulting from operation of the non-clustered scenario would result in a total of 2,388 MT/year of CO<sub>2</sub>e. Of these emissions, 1,833 MT/year are from mobile sources and 555 MT/year are from other (energy, water, waste, construction) sources.

It should be noted that operational emissions for the proposed project and the non-clustered scenario are anticipated to be the same since they both propose the same level of development. The non-clustered scenario would be completely built-out by 2020, while the proposed project would be operational by 2016. Emissions in the future year would be lower due to a gradual improvement in emission factors as new regulations are phased in, as well as an improvement in mobile source emissions due to fleet turnover. Since the AB 32 goal is based on the year 2020, total BAU emissions were reported for the same year for the proposed project and the non-clustered scenario. Construction emissions for the proposed project and the non-clustered scenario would be different due to a difference in construction schedules and intensity (see Section 3.2, *Air Quality*, of this Draft EIR).

**TABLE 3.6-4  
ESTIMATED CONSTRUCTION AND OPERATIONS-RELATED GREENHOUSE GAS EMISSIONS –  
NON-CLUSTERED SCENARIO (BUSINESS-AS-USUAL)**

Emission Source	Non-Clustered Scenario BAU Emissions CO <sub>2</sub> e (MT/yr)
<b>Construction</b>	
Total	5,158
Construction (Amortized over 30 years)	172
<b>Operations</b>	
Mobile Sources	1,833
Energy Consumption	270
Water Consumption	29
Solid Waste	35
Area Source	49
<b>TOTAL</b>	<b>2,388</b>

NOTES: CO<sub>2</sub>e= carbon dioxide equivalent; MT/yr = metric tons per year; see Appendix C for CalEEMod model output.

SOURCE: ESA, 2012.

The non-clustered scenario would result in an increase in GHG emissions under a BAU scenario. To be consistent with the goals of AB 32, the non-clustered scenario would need to reduce BAU emissions by 16 percent to ensure compliance with reductions required under AB 32. With adherence to Mitigation Measures MM 3.6-1 through MM 3.6-3, the non-clustered scenario’s GHG emissions would be reduced by a minimum of 18 percent from the BAU scenario as shown in **Table 3.6-5**.

Additionally as discussed above, SCAQMD has not adopted a threshold of significance for GHG emissions from residential projects. The proposed threshold for residential development being evaluated by SCAQMD is 3,500 MT/year CO<sub>2</sub>e. The GHG emissions for the non-clustered scenario would be 2,388 MT/year CO<sub>2</sub>e, below the threshold under consideration. If the threshold is adopted by SCAQMD by the time the EIR is certified, the non-clustered scenario’s impact with respect to GHG emissions under the SCAQMD threshold would also be less than significant.

**Impact Determination:** The non-clustered scenario would lead to an increase in GHG emissions; however, with adherence to Mitigation Measures MM 3.6-1 through MM 3.6-3, emissions would be reduced by a minimum of 18 percent from the BAU scenario. In addition Mitigation Measures MM 3.2-1 through MM 3.2-3 (see Section 3.2, *Air Quality*, of this Draft EIR) would also aid in reducing GHG emissions during construction.

Further, the project design features have been included to further reduce GHG emissions including collecting and cleaning stormwater through a first flush system (PDF-48), preservation

**TABLE 3.6-5  
 GREENHOUSE GAS EMISSIONS – NON-CLUSTERED SCENARIO (MITIGATED)**

<b>Emission Source</b>	<b>Proposed Project CO<sub>2</sub>e (MT/yr)</b>
<b>Construction</b>	
Total	5,158
Construction (Amortized over 30 years)	172
<b>Operations</b>	
Mobile Sources <sup>1</sup>	1,476
Energy Consumption <sup>2</sup>	230
Water Consumption <sup>3</sup>	25
Solid Waste <sup>4</sup>	28
Area Source	49
<b>TOTAL</b>	<b>1,980</b>
<b>BAU Emissions (MT/yr)</b>	<b>2,388</b>
<i>Percent reduction from BAU</i>	<i>18%</i>

NOTES: CO<sub>2</sub>e= carbon dioxide equivalent; MT/yr = metric tons per year; see Appendix G for calculation details.

- <sup>1</sup> Mobile source emissions, as estimated by CalEEMod, include the reductions associated with the Pavley regulations and the Low Carbon Fuel Standard. BAU mobile source emissions were estimated using URBEMIS 2007.
- <sup>2</sup> Energy-related emissions under the BAU scenario were estimated using the Title 24 2005 requirements, consistent with ARB's Scoping Plan. The California Energy Commission estimates that the Title 24 2008 standards represent a 22.7 percent and 8.2 percent improvement over the 2005 standards for electricity and natural gas, respectively. Additionally, the project would comply with CALGreen measures listed above and would exceed Title 24 2008 standards by a minimum of 10 percent. GHG reductions were estimated based on the CAPCOA guidance for GHG quantification (CAPCOA, 2010). Reduced emissions also include compliance with the Renewables Portfolio Standard
- <sup>3</sup> Water use reductions are based on the use of low-flow fixtures as estimated by CalEEMod.
- <sup>4</sup> It was assumed that solid waste generation would be reduced by 20% through the recycling center and compliance with CALGreen requirements.

SOURCE: ESA, 2012.

of open space and provision of landscaping (PDF-49), and the location of the project adjacent to a bike path (PDF-50). The non-clustered scenario would be consistent with the goals of AB 32 and the impact is less than significant after incorporation of mitigation measures.

**Impact 3.6.2:** Conflict with greenhouse gas reduction plans.

**Impact 3.6.2:** Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

### **Proposed Project**

The proposed project would comply with state and federal programs that are designed to improve energy efficiency. For example, USEPA's Energy Star for New Homes program is a voluntary program that includes features to make residential units significantly more energy efficient than standard construction in the marketplace. As described in Mitigation Measure MM 3.6-1, the



proposed project would include Energy Star rated appliances for increased energy efficiency. In addition, the proposed project would comply with all mandatory measures under the CALGreen Code which would lead to reduced energy consumption compared to BAU. Specific measures that would be implemented are described under Mitigation Measure MM 3.6-1. In addition, emissions from vehicles, which are the main source of operational GHG emissions associated with the project, would be reduced through implementation of the state Pavley standards, the federal Corporate Average Fuel Economy (CAFE) standards, and the state LCFS.

As discussed above, Executive Order S-01-07 established the goals of reducing carbon intensity in fuels by 10 percent by the year 2020 and establishing a LCFS for California. The U.S. Congress has recently adopted legislation to require CAFE standards to reach 35.5 mpg by the year 2016.

ARB Scoping Plan Action E-1, together with Action GB-1 (Green Building), aims to reduce electricity demand by increased efficiency of Utility Energy Programs and adoption of more stringent building and appliance standards. Elements of this action include encouraging construction of zero net energy buildings and implementation of passive solar design. In addition to employing on-site electricity generation, a zero net energy building must either replace natural gas with renewable energy for space and water heating, or compensate for natural gas use by generating surplus electricity for sale on the state's electricity grid. The proposed project would include all mandatory green building measures for new residential development under the CALGreen Code. Therefore, the proposed project would be consistent with the Scoping Plan measures through incorporation of stricter building and appliance standards.

Action E-3 concerns Renewable Portfolio Standards for utilities and does not apply to development projects. Therefore, the proposed project would not conflict with the recommended measure.

Action E-4 strives to promote solar generated electricity. The proposed project, as designed, does not include infrastructure that allows for installation of photo voltaic solar arrays in the future. However, the proposed project would include green building measures and would reduce energy use to the extent feasible. Therefore, the proposed project would not explicitly conflict with the goals of Action E-4.

The proposed project would not be explicitly inconsistent with the recommended measures in ARB's Scoping Plan. However as the proposed project would reduce BAU emissions by 18 percent (see Table 3.6-3), it would be consistent with the goals of AB 32.

**Impact Determination:** The proposed project would lead to an increase in GHG emissions; however, with adherence to Mitigation Measures MM 3.6-1 through MM 3.6-3, emissions would be reduced by a minimum of 18 percent from the BAU scenario. The proposed project would not pose any explicit conflict with the applicable list of ARB GHG reduction strategies outlined in the Climate Change Scoping Plan designed to meet the objectives of AB 32 to reduce GHG emissions to 1990 levels by 2020. The proposed project would be consistent with the goals of AB 32 and the impact is less than significant after incorporation of mitigation measures.

## Non-Clustered Scenario

Same as that described above for the proposed project, the non-clustered scenario would not be explicitly inconsistent with the recommended measures in ARB's Scoping Plan. However as the non-clustered scenario would reduce BAU emissions by 18 percent (see Table 3.6-5), it would be consistent with the goals of AB 32.

**Impact Determination:** The non-clustered scenario would lead to an increase in GHG emissions; however, with adherence to Mitigation Measures MM 3.6-1 through MM 3.6-3, emissions would be reduced by a minimum of 18 percent from the BAU scenario. The non-clustered scenario would not pose any explicit conflict with the applicable list of ARB GHG reduction strategies outlined in the Climate Change Scoping Plan designed to meet the objectives of AB 32 to reduce GHG emissions to 1990 levels by 2020. The non-clustered scenario would be consistent with the goals of AB 32 and the impact is less than significant after incorporation of mitigation measures.

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### 3.6.6 Cumulative Impacts

GHG impacts are assessed in a cumulative context since no single project can cause a discernable change to climate. Climate change impacts are the result of incremental contributions from natural processes, and past and present anthropogenic activities. The area in which the proposed project, as well as any other past, present, or future project, could contribute to a significant cumulative climate change impact would not be defined by a geographical boundary such as the County or the Basin. GHGs have high atmospheric lifetimes and can travel across the globe over a period of 50 to 100 years or more. Therefore, GHG impacts are addressed in the context of the global issue of climate change. Impacts from the proposed project or the non-clustered scenario would not result in cumulatively considerable GHG emissions, as emissions would be reduced by 18 percent from a BAU scenario.

**Impact Determination:** The proposed project and non-clustered scenario would lead to a cumulative increase in GHG emissions; however, with adherence to Mitigation Measures MM 3.6-1 through MM 3.6-3, emissions would be reduced by a minimum of 18 percent from the BAU scenario. Cumulative impacts would be less than significant.

### 3.6.7 Mitigation Measures

**MM 3.6-1** The following measures shall be implemented by the project developer to reduce GHG emissions:

- Construction equipment idling shall be limited, exceeding regulation requirements.
- Recycle or reuse 75 percent of the clearing and grubbing waste (existing building and construction materials and green waste). This measure exceeds the requirements under the CALGreen Code which mandates the recycling

and/or salvaging a minimum of 50 percent of the nonhazardous construction and demolition debris.

- Common area landscaping shall be equipped with irrigation controller with rain shutoff. Automatic irrigation system controllers for landscaping shall comply with the following:
  - Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
  - Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

**MM 3.6-2** The following measures shall be implemented by the builder to reduce GHG emissions:

- Energy usage shall be reduced by at least 10 percent below Title 24 baseline
- A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by at least 20 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fitting as required by the *California Building Standards Code*. The 20 percent reduction in potable water use shall be demonstrated by one of the following methods:
  - Each plumbing fixture and fitting shall meet reduced flow rates specified in Table 4.303.2 of the CALGreen Code (the table is included in Appendix G); or
  - A calculation demonstrating a 20 percent reduction in the building “water use” baseline as established in Table 4.303.1 of the CALGreen Code shall be provided. The calculation shall be limited to the following plumbing fixture and fitting types: water closets, urinals, lavatory faucets and showerheads, per CALGreen Code instructions for low-rise residential units.
- The project shall reduce indoor and outdoor water consumption through the use of low flow fixtures and water-efficient appliances. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall meet the standards referenced in Table 4.303.3 of the CALGreen Code.
- Openings in the building envelope separating conditioned space from unconditioned space needed to accommodate gas, plumbing, electrical lines and other necessary penetrations must be sealed in compliance with the *California Energy Code*.

- Light emitting diode lighting and other energy-efficient lighting technologies shall be incorporated into the project.
- The project shall employ the use of at least 50 percent Energy Star rated appliances
- The project shall utilize passive energy efficiency strategies, such as roof overhangs, porches and inner courtyards.
- The project shall incorporate light-colored roof materials to deflect heat and reduce energy demand for building cooling purposes
- At the time of rough installation or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet-metal or other methods acceptable to the County to reduce the amount of dust or debris which may collect in the system.
- The builder shall conduct a preconstruction kick-off meeting with rater and subcontractors.
- Programmable thermostat timers shall be installed to regulate energy use.
- Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with US EPA Phase II emission limits, where applicable.
- Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with SCAQMD Rule 1168 VOC limits.
- Mechanical exhaust fans which exhaust directly from bathrooms shall comply with the following:
  - Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
  - Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidistat which shall be readily accessible. Humidistat controls shall be capable of adjustment between a relative humidity range of 50 to 80 percent.
- Whole house exhaust fans shall have insulated louvers or covers which close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2.
- Additional measures from the GreenPoint rated checklist shall be included on building blueprints.

**MM 3.6-3** The CC&Rs for Saddle Crest Homes shall include the following:

- Include occupant recommendations for green building features and benefits, such as Energy Star rated equipment, planting shade trees, high efficiency

HVAC filters, installing carbon monoxide alarms and using low to no-VOC paint.

- Include occupant recommendations to reduce landfill-bound solid waste through avoidance, composting, and recycling (including installation of a built-in recycling center).
- Provide homeowner education to limit outdoor lighting by using energy efficient low-voltage systems, photo sensors, solar and light emitting diode.
- Adopt a water conservation strategy to be implemented by the homeowner, including providing homeowner education on designing water-efficient landscapes, reducing turf in landscapes and lawns, and planting native or drought-resistant trees and vegetation.
- At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the County which includes all of the following shall be placed on the property:
  - Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
  - Operation and maintenance instructions for the following:
    - Equipment and appliances, including water-saving devices and systems, HVAC systems, water-heating systems and other major appliances and equipment.
    - Roof and yard drainage, including gutters and downspouts.
    - Space conditioning systems, including condensers and air filters.
    - Landscape irrigation systems.
    - Water reuse systems.
    - Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
    - Public transportation and/or carpool options available in the area.
    - Educational material on the positive impacts of an interior relative humidity between 30 to 60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
    - Information about water-conserving landscape and irrigation design and controllers which conserve water.
    - Instructions for maintaining gutters and downspouts and the importance of diverting water at least five feet away from the foundation.

- Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
- Information about state solar energy and incentive programs available.
- A copy of all special inspection verifications required by the County

### 3.6.8 Impact Determination

As discussed under Impact 3.6.1, the proposed project or non-clustered scenario would lead to an increase in GHG emissions; however, with adherence to Mitigation Measures MM 3.6-1 through MM 3.6-3, emissions would be reduced by a minimum of 18 percent from the BAU scenario. In addition Mitigation Measures MM 3.2-1 through MM 3.2-3 (see Section 3.2, *Air Quality*, of this Draft EIR) would also aid in reducing GHG emissions during construction. Further, the project design features have been included to further reduce GHG emissions including collecting and cleaning stormwater through a first flush system (PDF-48), preservation of open space and provision of landscaping (PDF-49), and the location of the project adjacent to a bike path (PDF-50). The project would be consistent with the goals of AB 32 and the impact would be less than significant.

Neither the proposed project nor the non-clustered scenario would pose any explicit conflict with the applicable list of ARB GHG reduction strategies outlined in the Climate Change Scoping Plan designed to meet the objectives of AB 32 to reduce GHG emissions to 1990 levels by 2020 (Impact 3.6.2). Adherence to Mitigation Measures MM 3.6-1 through MM 3.6-3, emissions would be reduced by a minimum of 18 percent from the BAU scenario.

The proposed project and the non-clustered scenario would lead to a cumulative increase in GHG emissions; however, with adherence to Mitigation Measures MM 3.6-1 through MM 3.6-3, emissions would be reduced by a minimum of 18 percent from the BAU scenario. Cumulative impacts would be less than significant.