

## 5.7 GREENHOUSE GAS

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### 5.7.1 INTRODUCTION

This section provides a discussion of the potential greenhouse gas emissions (GHGs) that could be generated by the proposed project.

### 5.7.2 EXISTING CONDITIONS

#### 5.7.2.1 Greenhouse Gas Inventory

Data compiled by the United Nations Framework Convention on Climate Change (UNFCCC) indicates that, in 2006, total worldwide GHG emissions were 22,170 million metric tons of carbon dioxide equivalents (MMT $\text{CO}_2\text{e}$ ), emissions in the U.S. were 7,054.2 MMT $\text{CO}_2\text{e}$ , and emissions in California were 483.9 MMT $\text{CO}_2\text{e}$ .

While California has a high amount of total GHG emissions, it has low emissions per capita. California ranks fourth lowest of the 50 states in carbon dioxide emissions per capita. The major source of GHG in California is transportation, contributing approximately 41 percent of the state's total GHG emissions. Electricity generation is the second largest generator, contributing approximately 22 percent of the state's GHG emissions.

Emissions from fuel use in the commercial and residential sectors in California decreased approximately 9.7 percent over the 1990-to-2004 period. The decrease in GHGs could demonstrate the effectiveness of energy conservation in buildings (Title 24 requirements) and appliances. The decrease in GHGs attributed to these sources is even more substantial when the population increase in California over this same time period is considered.

#### 5.7.2.2 Existing Annexation Area Emissions

The project area is currently in varying stages of development with some areas developed with existing residential, commercial and light industrial uses and other undeveloped areas being used for agricultural. GHG emissions are generated by area, energy, and mobile sources, waste disposal, and water and wastewater treatment and conveyance.

## 5.7.3 APPLICABLE REGULATIONS

### 5.7.3.1 Regulatory Background

#### ***Global Climate Change***

Certain atmospheric gases act as an insulating blanket for solar energy to keep the global average temperature in a suitable range. These gases are called ‘greenhouse gases’ (GHGs) because they trap heat like the glass walls of a greenhouse. The greenhouse effect raises the temperature of the earth’s surface by about sixty degrees Fahrenheit. With the natural greenhouse effect, the average temperature of the earth is about 45 degrees Fahrenheit; without it, the earth would be about minus 15 degrees. It is normal for the earth’s temperature to fluctuate over extended periods of time. Over the past one hundred years, the earth’s average global temperature has generally increased by one degree Fahrenheit. In some regions of the world, the increase has been as much as four degrees Fahrenheit.

Scientists studying the particularly rapid rise in global temperatures during the late twentieth century believe that natural variability alone does not account for that rise. Rather, human activity spawned by the industrial revolution has likely resulted in increased emissions of carbon dioxide and other forms of GHGs, primarily from the burning of fossil fuels (during motorized transport, electricity generation, consumption of natural gas, industrial activity, manufacturing, etc.) and deforestation, as well as agricultural activity and the decomposition of solid waste. The most common GHG is carbon dioxide (CO<sub>2</sub>), which constitutes approximately 84 percent of all GHG emissions in California.<sup>1</sup> Worldwide, the state of California ranks as the 12th to 16th largest emitter of CO<sub>2</sub> and is responsible for approximately two percent of the world’s CO<sub>2</sub> emissions.<sup>2</sup>

Scientists refer to the global warming context of the past century as the “enhanced greenhouse effect” to distinguish it from the natural greenhouse effect. While the increase in temperature is known as “global warming,” the resulting change in weather patterns is known as “global climate change.” Global climate change is evidenced in changes to wind patterns, storms, precipitation, and air temperature.

#### ***Global Warming Potential***

Global Warming Potentials (GWPs) are one type of simplified index based upon radiative properties that can be used to estimate the potential future impacts of emissions of different gases upon the climate system in a relative sense. GWP is based on a number of factors, including the radiative efficiency (heat-

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1 California Energy Commission, 2006.

2 Ibid.

absorbing ability) of each gas relative to that of CO<sub>2</sub>, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO<sub>2</sub>.

The U.S. Environmental Protection Agency (U.S. EPA) defines GWP as the “cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas,” the reference gas in this case being CO<sub>2</sub>. To account for the varying warming potential of different GHGs, GHG emissions are often quantified and reported as CO<sub>2</sub> equivalents (CO<sub>2</sub>e). One tetragram of CO<sub>2</sub>e (Tg CO<sub>2</sub>e) essentially equals the emissions of the gas multiplied by the GWP. One tetragram is equal to one million metric tons. A summary of the atmospheric lifetime and GWP of selected gases is presented in **Table 5.7-1, Atmospheric Lifetimes and Global Warming Potentials of GHG Gases**. As indicated, GWP ranges from 1 to 23,900.

**Table 5.7-1  
Atmospheric Lifetimes and Global Warming Potentials of GHG Gases**

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50-200	1
Methane	12 (+/-3)	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Tetrafluoromethane (CF <sub>4</sub> )	50,000	6,500
PFC: Hexafluoromethane (C <sub>2</sub> F <sub>6</sub> )	10,000	9,200
Sulfur Hexafluoride (SF <sub>6</sub> )	3,200	23,900

*Source: Intergovernmental Panel on Climate Change, IPCC Second Assessment: Climate Change 1995.*

## GHG Components

The California Global Warming Solutions Act of 2006 (see below) defined GHGs to include CO<sub>2</sub>, methane, nitrogen oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. California SB 104 (approved by the Governor on October 11, 2009) added nitrogen trifluoride to this list. Below is a description of these GHGs.

**CO<sub>2</sub>** is an odorless and colorless GHG. Outdoor levels of carbon dioxide are not high enough to result in negative health effects. CO<sub>2</sub> is emitted from natural and manmade sources. Natural sources include: the decomposition of dead organic matter; respiration of bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include: the burning of coal, oil, natural gas, and wood. CO<sub>2</sub> is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks.

Since the industrial revolution began in the mid-1700s, the sort of human activity that increases GHG emissions has increased dramatically in scale and distribution. Data from the past 50 years suggests a corollary increase in levels and concentrations. As an example, prior to the industrial revolution, CO<sub>2</sub> concentrations were fairly stable at 280 parts per million (“ppm”) by volume. Today, they are around 370 ppm; an increase of more than 30 percent. Left unchecked, the concentration of CO<sub>2</sub> in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources.

**Methane** (CH<sub>4</sub>) is an extremely effective absorber of radiation, though its atmospheric concentration is less than CO<sub>2</sub> and its lifetime in the atmosphere is brief (10-12 years) when compared to other GHGs. No health effects are known to occur from exposure to methane.

Methane has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropogenic sources include fossil-fuel combustion and biomass burning.

**Nitrous oxide** (N<sub>2</sub>O), also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses, it is considered harmless. However, in some cases, heavy and extended use can cause Olney’s Lesions (brain damage).

Concentrations of nitrous oxide also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (“ppb”) by volume. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant, i.e., in whipped cream bottles. It is also used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. Nitrous oxide can be transported into the stratosphere, be deposited on the earth’s surface, and be converted to other compounds by chemical reaction.

**Hydrofluorocarbons** (HFCs) are synthetic, man-made chemicals that are used as a substitute for chlorofluorocarbons (CFCs), which have now been banned for destroying the ozone layer. Out of all the greenhouse gases, HFCs are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF<sub>3</sub>), HFC-134a (CF<sub>3</sub>CH<sub>2</sub>F), and HFC-152a (CH<sub>3</sub>CHF<sub>2</sub>). Prior to 1990, the only significant emissions were of HFC-23. HFC-134a emissions are increasing due to its use as a refrigerant. The U.S. EPA estimates that

concentrations of HFC-23 and HFC-134a are now about 10 parts per trillion (ppt) by volume each; and that concentrations of HFC-152a are about 1 ppt. No health effects are known to result from exposure to HFCs, which are manmade for applications such as automobile air conditioners and refrigerants.

**Perfluorocarbons** (PFCs) have stable molecular structures and do not break down through chemical processes in the lower atmosphere. High-energy ultraviolet rays, which occur about 60 kilometers above Earth's surface, are able to destroy the compounds. Because of this, PFCs have very long lifetimes; between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF<sub>4</sub>) and hexafluoroethane (C<sub>2</sub>F<sub>6</sub>). The U.S. EPA estimates that concentrations of CF<sub>4</sub> in the atmosphere are over 70 ppt.

No health effects are known to result from exposure to PFCs. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

**Sulfur hexafluoride** (SF<sub>6</sub>) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest GWP of any gas evaluated (23,900). The U.S. EPA indicates that concentrations in the 1990s were about 4 ppt. In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing.

Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

### 5.7.3.2 International

#### ***Kyoto Protocol***

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling greenhouse gas emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The Plan currently consists of more than 50 voluntary programs.

### 5.7.3.3 Federal

#### ***Federal Clean Air Act and Government Regulations***

Previously, the U.S. EPA had not regulated GHGs under the federal Clean Air Act (CAA) because it asserted that the CAA did not authorize it to issue mandatory regulations to address global climate change and that such regulation would be unwise without an unequivocally established causal link between GHGs and the increase in global surface air temperatures. In *Massachusetts v. Environmental Protection Agency et al.* (127 S. Ct. 1438 (2007)), however, the U.S. Supreme Court held that GHGs are pollutants under the CAA and directed the EPA to decide whether the gases endangered public health or welfare. On December 7, 2009, the U.S. EPA issued an Endangerment Finding under Section 202(a) of the CAA, opening the door to federal regulation of GHGs. The Endangerment Finding notes that GHGs threaten public health and welfare and are subject to regulation under the CAA. To date, the EPA has not promulgated major regulations on GHG emissions, although it has begun to develop them.

The U.S. EPA's Endangerment Finding paves the way for federal regulation of GHGs with or without Congress. To date, Congress, under the Consolidated Appropriations Act of 2008 (HR 2764), has established mandatory GHG reporting requirements for some emitters of GHGs. On September 22, 2009, the U.S. EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires annual reporting to the U.S. EPA of GHG emissions from large sources and suppliers of GHGs, including facilities that emit 25,000 metric tons or more a year of GHGs. To date, Congress has not enacted any legislation requiring economy-wide mandatory reductions in GHG emissions. Currently, the Federal government's policy on climate change has three objectives: 1) slowing the growth of emissions; 2) strengthening science, technology and institutions; and 3) enhancing international cooperation, which it is implementing through voluntary and incentive-based programs.

### 5.7.3.4 State

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

Notwithstanding the current lack of federal regulation of greenhouse gas emissions, Executive Order S-3-05, signed by Governor Arnold Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to 1990 levels by 2020 and for an 80 percent reduction in GHG emissions below 1990 levels by 2050 in California. The Secretary of the California Environmental Protection Agency (CalEPA) has been charged with coordination of efforts to meet these targets and formed the Climate Action Team to implement the Order. The Climate Action Team also provided strategies and input to the California Air Resources Board Scoping Plan discussed below.

## **Assembly Bill 32**

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. In adopting this legislation (commonly known as “AB 32”), the State Legislature declared that “global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.” Further, the Legislature found that “the potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious disease, asthma, and other human health-related problems.” The Legislature added that “global warming will have detrimental effects on some of California’s largest industries” and “increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state.”

AB 32 initiated a long-term program for “the development of [GHG] emissions reduction measures.”<sup>3</sup> It “creates a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California, with the overall goal of restoring emissions to 1990 levels by the year 2020.”<sup>4</sup> AB 32 recognizes that such an ambitious effort requires careful planning and a well thought-out set of strategies. Accordingly, AB 32 delegated the authority for its implementation to the California Air Resources Board (“ARB”) and directs the ARB to enforce the statewide cap that would begin phasing in by 2012. Amongst other requirements, AB 32 required the ARB to (1) identify the statewide level of greenhouse gas emissions in 1990 to serve as the emissions limit to be achieved by 2020, and (2) develop and implement a Scoping Plan to be implemented by January 1, 2012.

In November 2007, the ARB completed its estimates of 1990 GHG levels. Net emission 1990 levels were estimated at 427 million metric tons (MMTs; emission sources by sector were: transportation – 35 percent; electricity generation – 26 percent; industrial – 24 percent; residential – 7 percent; agriculture – 5 percent; and commercial – 3 percent).<sup>5</sup> Accordingly, 427 MMTs of CO<sub>2</sub> equivalent was established as the emissions limit for 2020. For comparison, the ARB’s estimate for 2000 baseline GHG emissions was 473 MMTs for 2000 and 532 MMTs for 2010. “Business as usual” conditions for 2020 were projected to be 596 MMTs. Therefore to comply with AB 32’s mandate, GHG emission would need to be reduced from 596 MMTs (i.e., 2020 “business as usual”) to 427 MMTs (the 1990 level), which is a reduction of 30%.

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3 As defined under AB 32, greenhouse gas emissions include the following: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride.

4 Written on a public notice prepared by the staff of the California Air Resources Board in connection with a meeting to consider “early discrete actions” related to AB 32 on October 25, 2007.

5 On a national level, the U.S. EPA’s Endangerment Finding stated that electricity generation is the largest emitting sector (34%), followed by transportation (28%), and industry (19%).

This latter forecast did not take any credit for reductions from measures included in the AB 32 Scoping Plan, including the Pavley GHG emissions standards for vehicles, full implementation of the Renewables Portfolio Standard beyond current levels of renewable energy, or the solar measures.

Under AB 32, the ARB published its Final Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California. The ARB has 44 early action measures that apply to the transportation, commercial, forestry, agriculture, cement, oil and gas, fire suppression, fuels, education, energy efficiency, electricity, and waste sectors. Of these early action measures, nine were deemed discrete early action measures in that they were regulatory and enforceable by January 1, 2010. The ARB estimates that the 44 recommendations will result in reductions of at least 42 MMTs by 2020, representing approximately 25 percent of the 2020 target.

In December 2007, the ARB approved a regulation for mandatory reporting and verification of GHG emissions for major sources. This regulation covered major stationary sources such as cement plants, oil refineries, electric generating facilities/providers, and co-generation facilities, which comprise 94 percent of the point source CO<sub>2</sub> emissions in the state.

On December 11, 2008, the ARB adopted a scoping plan to reduce GHG emissions to 1990 levels. The Scoping Plan's recommendations for reducing GHG emissions to 1990 levels by 2020 include emission reduction measures, including a cap-and-trade program linked to Western Climate Initiative partner jurisdictions, green building strategies, recycling and waste-related measures, as well as Voluntary Early Actions and Reductions. According to the September 23, 2010 AB 32 Climate Change Scoping Plan Progress Report, 40 percent of the reductions identified in the Scoping Plan have been secured through ARB actions and California is on track to its 2020 goal.<sup>6</sup>

### ***Renewable Portfolio Standard***

In 2002, SB 1078 required electric utilities to increase procurement of power generated by eligible renewable energy sources to 20 percent of total generation by 2017. In 2006, SB 107 accelerated the timetable to require 20 percent renewable energy by 2010. Then, in 2008, the Governor signed Executive Order S-14-08, which increased the required renewables content to 33 percent by 2020. In September 2009, the Governor signed Executive Order S-21-09 which directed the ARB to adopt regulations consistent with the 33 percent renewable energy target in Executive Order S-14-08 by July 31, 2010.

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<sup>6</sup> California Air Resources Board, 2010.



## **Title 24 Energy Efficiency Standards**

Although not originally intended to reduce greenhouse gases, California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. Since then, Title 24 has been amended with a distinction for energy-efficient buildings that require less electricity and reduce fuel consumption, which in turn decreases GHG emissions. The current 2010 Title 24 standards (effective as of January 1, 2011) were adopted to respond, amongst other reasons, to the requirements of AB 32. Specifically, new development projects constructed within California after January 1, 2011 are subject to the mandatory planning and design, energy efficiency, water efficiency and conservation, material conservation and resources efficiency, and environmental quality measures of the California Green Building Standards ("CALGreen") Code (California Code of Regulations, Title 24, Part 11).

### **SB 1368**

Passed in 2006, SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 reduces carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as combined cycle natural gas plants. Overall, SB 1368 will dramatically lower GHG emissions associated with California's energy demand as it will effectively prohibit California utilities from purchasing power from out-of-state producers that cannot satisfy the required performance standard.

### **SB 375**

In September 2008, the California legislature adopted SB 375, legislation which: (1) relaxes CEQA requirements for some housing projects that meet goals for reducing GHG emissions and (2) requires the regional governing bodies in each of the state's major metropolitan areas to adopt, as part of their regional transportation plan, "sustainable community strategies" that will meet the region's target for reducing GHG emissions. SB 375 creates incentives for implementing the sustainable community strategies by allocating federal transportation funds only to projects that are consistent with the emissions reductions.

Local governments would then devise strategies for housing development, road-building and other land uses to shorten travel distances, reduce vehicular travel time and meet the new targets. If regions

develop these integrated land use, housing, and transportation plans, residential projects that conform to the sustainable community strategy (and therefore contribute to GHG reduction) can have a more streamlined environmental review process.

### 5.7.3.5 Local

Neither the Ventura County Air Pollution Control District (VCAPCD) nor the City of Santa Paula has adopted any regulations addressing the generation of GHG emissions. The issue of GHG emissions is not addressed in the current City of Santa Paula General Plan.

## 5.7.4 THRESHOLDS OF SIGNIFICANCE

In order to assist in determining whether a project would have a significant effect on the environment, the *California Environmental Quality Act (CEQA)* identifies criteria for conditions that may be deemed to constitute a substantial or potentially substantial adverse change in physical conditions. Specifically, Appendix G of the *State CEQA Guidelines* (Environmental Checklist Form) lists the following thresholds, under which a project may be deemed to have a significant impact on agricultural resources if it would:

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

### Criteria to Determine a Significant Generation of GHG Emissions

For greenhouse gas emissions and global warming, there is not, at this time, one established, universally agreed-upon “threshold of significance” by which to measure an impact. While the ARB published some draft thresholds several years ago, they were never adopted and the ARB recommended that local air districts and lead agencies adopt their own thresholds for GHG impacts.

As discussed in **Section 5.3, Air Quality**, the City of Santa Paula relies upon the expert guidance of the Ventura County Air Pollution Control District (VCAPCD) regarding the methodology and thresholds of significance for the evaluation of air quality impacts within Ventura County. GHG emissions are air pollutants that are subject to local control by the VCAPCD. As such, the City looks to the VCAPCD for guidance in the evaluation of GHG impacts.

In September 2011, the Ventura County Air Pollution Control Board requested that VCAPCD staff report back on possible GHG significance thresholds for evaluating GHG impacts of land use projects in Ventura County under CEQA. VCAPCD staff responded to this request by preparing a report entitled Greenhouse Gas Thresholds of Significance Options for Land Use Development Projects in Ventura County. This

report presents a number of options for GHG significance thresholds and summarizes the most prominent approaches and options either adopted or being considered by all other air districts throughout California. Similar to other air districts, VCAPCD staff members are considering a tiered approach with the main components involving consistency with a locally adopted GHG reduction plan followed by a bright-line threshold for land use projects that would capture 90 percent of project GHG emissions. VCAPCD staff members are also exploring an efficiency-based metric (e.g., GHG emissions per capita) for land use projects and plans. The South Coast Air Quality Management District (SCAQMD) is also considering these strategies for land use projects.

Given that Ventura County is adjacent to the SCAQMD jurisdiction and is a part of the Southern California Association of Governments (SCAG) region, VCAPCD staff believes it makes sense to set local GHG emission thresholds of significance for land use development projects at levels consistent with those set by the SCAQMD and the SCAG region. VCAPCD believes that adopting harmonized regional GHG emission thresholds would help streamline project review and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout most of Southern California.

The SCAQMD has been evaluating GHG significance thresholds since April 2008. In December 2008, the SCAQMD adopted an interim 10,000 metric tons CO<sub>2</sub>e (MTCO<sub>2</sub>e) per year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency. The SCAQMD has continued to consider adoption of significance thresholds for residential and general development projects. The most recent proposal issued in September 2010 uses the following tiered approach to evaluate potential GHG impacts from various uses:

- Tier 1** Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.
- Tier 2** Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearings and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.
- Tier 3** Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MTCO<sub>2</sub>e/year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MTCO<sub>2</sub>e/year), commercial projects (1,400 MTCO<sub>2</sub>e/year), and mixed-use projects (3,000 MTCO<sub>2</sub>e/year). Under option 2 a single numerical screening threshold of 3,000 MTCO<sub>2</sub>e/year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.
- Tier 4** Consider whether the project generates GHG emissions in excess of applicable performance

standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MTCO<sub>2</sub>e per service population for project level analyses and 6.6 MTCO<sub>2</sub>e per service population for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

**Tier 5** Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

The thresholds identified above have not been adopted by the SCAQMD or distributed for widespread public review and comment, and the working group tasked with developing the thresholds has not met since September 2010. The future schedule and likelihood of threshold adoption is uncertain.

However, for the purpose of evaluating the GHG impacts associated with the East Gateway Project, this Draft EIR utilizes the 6.6 MTCO<sub>2</sub>e per service population for plan level analyses. This threshold is utilized since it was developed based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The SCAQMD's applicable thresholds have also been utilized for other projects in Ventura County.

The one change utilized for the evaluation of project impacts in this EIR is the definition of the service population. The SCAQMD draft thresholds define the service population as the total residents and employees associated with a project. This may be appropriate for regional or community-wide analyses in which most people are either residents or employees within the community. In the case of a general development projects, the service population consists of residents, employees, customers, vendors, students, etc. In the case of a commercial project, employees may be only two percent of the number of people that visit a site. The great majority of people visiting the site and project are customers with a smaller number of vendors (delivery and sales). It does not make sense to consider only the employees as the service population for a project such as this. The employees are at the site to serve the needs of their customers. Therefore, this EIR assumes that the service population is everyone that would be served by the proposed uses, including customers and vendors.

### **Criteria to Determine Project Consistency with an Applicable GHG Reduction Plan**

CEQA also requires projects to be evaluated for consistency with "applicable general plans, specific plans and regional plans." Such plans would include, for example, the applicable air quality attainment or maintenance plan, regional blueprint plans, sustainable community strategies, and climate action plans. These plans involve legislative or regulatory programs applicable to all projects within the region and establish standards that are independent of the impact analysis described in the CEQA Guidelines. As of the date that this Draft EIR was prepared, the VCAPCD and City of Santa Paula have yet to adopt any such plans. Therefore, there is no local or regional plan regulating global warming by which the proposed

project can be measured. The two plans that would be applicable to the project are the 2006 CAT Report and the ARB's Scoping Plan. The proposed project would cause a significant impact if it were to be inconsistent with any of the strategies from the 2006 CAT Report and measures from the ARB's Scoping Plan that are applicable to the project.

### 5.7.5 PROJECT IMPACTS

The environmental impact analysis presented below is based on determinations made in the Notice of Preparation (NOP) for issues that were determined to be potentially significant with mitigation incorporated, or for issues identified by reviewing agencies, organizations, or individuals commenting on the NOP that made a reasonable argument that the issue was potentially significant (see Responses to NOP, **Appendix 1.0**).

#### 5.7.5.1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

##### *Impacts*

Operational emissions generated by area, energy, and mobile sources, waste disposal, and water and wastewater treatment and conveyance would result from normal day-to-day activities within the annexation area after occupation. The net increase in annual operational GHG emissions has been calculated utilizing the California Emissions Estimator Model (CalEEMod v. 2011.1.1) recommended by the VCAPCD and the conservative assumption that the East Gateway Specific Plan area would be completed and fully operational by 2015. **Table 5.7-2, Estimated Operational GHG Emissions – East Gateway Specific Plan** shows the annual emissions that would be generated by both the shopping center and business park uses that could occur under the proposed Specific Plan.<sup>7</sup>

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7 The trip generation numbers in the air quality appendix materials are slightly different than those identified for the project in Table 9 of the project traffic report. The traffic report identifies an overall generation of 20,982 average daily trips (ADT) for the East Gateway Project. However, the air quality analysis calculates the emissions for the East Gateway Specific Plan and remainder of the annexation area separately so that the EIR can identify the impacts of the Specific Plan action assuming a completion date of 2015 as well as the necessary mitigation for this component of the overall project. The emissions for the remainder of the annexation area were calculated separately since this area assumes a longer term timeframe of 2020 for additional development as there are no specific development proposals for this area at this time.

**Table 5.7-2  
Estimated Operational GHG Emissions – East Gateway Specific Plan**

<b>Emissions Source</b>	<b>CO<sub>2</sub>e in Metric Tons per year</b>
<b>Alternative 1 – Regional Retail Center</b>	
Area Sources	0.00
Energy Sources	1,144.31
Mobile Sources	7,226.41
Waste Disposal	74.04
Water and Wastewater	17.38
Total Emissions	8,462.14
Service Population	6,655 employees, customers & vendors
Emissions per Service Population	1.27
Threshold of Significance	6.6
Significant Impact?	No
<b>Alternative 2 – Mixed Use Employment Center</b>	
Area Sources	0.00
Energy Sources	1,887.20
Mobile Sources	3,337.87
Waste Disposal	76.43
Water and Wastewater	20.18
Total Emissions	5,321.68
Service Population	2,448 employees, customers & vendors
Emissions per Service Population	2.17
Threshold of Significance	6.6
Significant Impact?	No

*Source: Cadence Environmental Consultants, 2012. Calculation sheets are provided in **Appendix 5.7**.*

The service population for the proposed Specific Plan uses has not been identified in any of the technical studies prepared for the proposed project. Instead, this analysis assumes that the daily average service population would be based on the number of potential daily vehicle trips (before walk/bicycle and pass-by trips trip credits are applied) divided by two. The vehicle trip numbers are divided by two since each service population member would make one trip to the site and one trip from the site (one person, two

The air quality analysis provides the same trip reduction credit for walk/bicycle trips as the traffic report by modifying the trip generation rate to discount these trips. The analysis does not, however, modify the trip rates to eliminate pass-by trips. The walk/bicycle trip reduction credit removes vehicles from the roadways, but pass-by trips would still access the uses within the project site and there would be minor emissions associated with the internal traffic circulation as well as start and stop emissions. The pass-by credit is addressed within in the CalEEMod inputs and calculations. The pass-by percentage that was programmed into the CalEEMod files is the same as those assumed in the traffic report. Therefore, the air quality analysis ADT numbers for the project are consistent with those identified in the traffic report prior to any reduction for pass-by trips. For example, the shopping center uses within the Specific Plan area would generate 11,980 ADT (CalEEMod calculates 11,981) prior to the pass-by trip credit. The business park and shopping uses within the Specific Plan area would generate 4,852 ADT prior to the pass-by credit.

trips). This is a very conservative assumption since each vehicle is assumed to accommodate only one person, whereas many of the vehicles would accommodate more than one person.

As shown, the East Gateway Specific Plan would generate annual operational GHG emissions that do not exceed the thresholds of significance utilized for this analysis. This would be a less than significant impact.

**Table 5.7-3, Estimated Operational GHG Emissions – East Gateway Annexation Area** shows the annual GHG emissions that would be generated by land uses envisioned for the East Gateway Annexation Area parcels. The service population for this area has been calculated in the same manner described above for the East Gateway Specific Plan. As shown, the complete development of the East Gateway Annexation Area would generate average annual operational emissions that do not exceed the thresholds of significance utilized for this analysis. This would be a less than significant impact.

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**Table 5.7-3**  
**Estimated Operational GHG Emissions – East Gateway Annexation Area**

Emissions Source	CO <sub>2</sub> e in Metric Tons per year
Area Sources	0.13
Energy Sources	2,315.24
Mobile Sources	8,085.39
Waste Disposal	742.81
Water and Wastewater	24.30
Total Emissions	11,167.87
Service Population	6,554 employees, customers & vendors, & 35 residents
Emissions per Service Population	1.69
Threshold of Significance	6.6
Significant Impact?	No

*Source: Cadence Environmental Consultants, 2012. Calculation sheets are provided in Appendix 5.7.*

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**Table 5.7-4, Estimated Operational GHG Emissions – East Gateway Project** shows the annual GHG emissions that would be generated by the overall East Gateway Project. As shown, the complete development of the East Gateway Project would generate average annual operational emissions that do not exceed the thresholds of significance utilized for this analysis. This would be a less than significant impact.

It should be noted that this analysis is conservative in assuming that all emissions identified in the tables above are new to the global GHG inventory.

**Table 5.7-4  
Estimated Operational GHG Emissions – East Gateway Project**

<b>Emissions Source</b>	<b>CO<sub>2</sub>e in Metric Tons per year</b>
<b>Scenario 1 – Regional Retail Center</b>	
Specific Plan Area	8,462.14
Remainder of Annexation Area	11,167.87
Total Emissions	19,630.01
Service Population	13,209 employees, customers & vendors, & 35 residents
Emissions per Service Population	1.48
Threshold of Significance	6.6
Significant Impact?	No
<b>Scenario 2 – Mixed-Use Employment Center</b>	
Specific Plan Area	5,321.68
Remainder of Annexation Area	11,167.87
Total Emissions	16,489.55
Service Population	9,002 employees, customers & vendors, & 35 residents
Emissions per Service Population	1.82
Threshold of Significance	6.6
Significant Impact?	No

*Source: Cadence Environmental Consultants, 2012. Calculation sheets are provided in **Appendix 5.7**.*

### ***Mitigation Measures***

No mitigation is required. However, **Mitigation Measures 5.3-3 and 5.3-4** from **Section 5.3, Air Quality**, have been identified that would reduce the operational air pollutant emissions associated with the proposed project. These measures would also reduce the GHG emissions associated with the project, resulting in even lower emissions than shown above in **Tables 5.7-2 through 5.7-4**.

### ***Residual Impacts***

Impacts would be less than significant.

#### **5.7.5.2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

### ***Impacts***

The consistency of the proposed project with the strategies from the 2006 CAT Report and measures from the ARB's Scoping Plan that are applicable to the proposed project is evaluated in **Table 5.7-5, Project Consistency with 2006 CAT Report Greenhouse Gas Emission Reduction Strategies** and



**Table 5.7-6, Project Consistency with ARB Scoping Plan Recommended Greenhouse Gas Emission Reduction Measures**, respectively. As shown, the proposed project would be consistent with all feasible and applicable strategies of the 2006 CAT Report and the recommended measures of ARB Scoping Plan to reduce greenhouse gas emissions in California. This would be a less than significant impact.

***Mitigation Measures***

No mitigation is required.

***Residual Impacts***

Impacts would be less than significant.

**5.7.6 CUMULATIVE ANALYSIS**

***Cumulative Impacts***

As discussed above, emitting GHGs into the atmosphere is not itself an adverse environmental effect. Rather, it is the increased accumulation of GHGs in the atmosphere that may result in global climate change; the consequences of which may result in adverse environmental effects. The state has mandated a goal of reducing state-wide emissions to 1990 levels by 2020, even though state-wide population and commerce is expected to grow substantially. As discussed above, the proposed project would generate average annual operational emissions that do not exceed the thresholds of significance utilized for this analysis. For this reason, the contribution of the project to the cumulative effect of global climate change is not considered to be cumulatively considerable.

***Mitigation Measures***

No mitigation is required.

***Residual Impacts***

Impacts are less than significant.

**Table 5.7-5  
Project Consistency with 2006 CAT Report Greenhouse Gas Emission Reduction Strategies**

Strategy	Project Consistency
<b>California Air Resources Board</b>	
<p>Vehicle Climate Change Standards</p> <p>AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB I September 2004.</p>	<p>Consistent</p> <p>The new uses within the East Gateway Project area would not manufacture new passenger vehicles or light duty trucks that would be subject to ARB regulations. The vehicles that travel to and from the East Gateway Project area on public roadways would be in compliance with ARB vehicle standards that are in effect at the time of vehicle purchase. The proposed project would not interfere with the statewide implementation of these regulations.</p>
<p>Diesel Anti-Idling</p> <p>In July 2004, the ARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.</p>	<p>Consistent</p> <p>Current State law restricts diesel truck idling to five minutes or less. Any diesel trucks operating from or making deliveries to the East Gateway Project area are subject to this statewide law. The proposed project would not interfere with the statewide implementation of this regulation.</p>
<p>Hydrofluorocarbon Reduction</p> <p>1) Ban retail sale of HFC in small cans. 2) Require that only low GWP refrigerants be used in new vehicular systems. 3) Adopt specifications for new commercial refrigeration. 4) Add refrigerant leak-tightness to the pass criteria for vehicular inspection and maintenance programs. 5) Enforce federal ban on releasing HFCs.</p>	<p>Consistent</p> <p>This strategy applies to consumer and commercial products. All applicable products purchased, installed, and operated within California by building owners, tenants, and residents within the East Gateway Project area would comply with the regulations that are in effect at the time of manufacture and sale. The proposed project would not interfere with the statewide implementation of this strategy.</p>
<p>Alternative Fuels: Ethanol</p> <p>Increased use of E-85 fuel.</p>	<p>Consistent</p> <p>Building owners, tenants, and residents of the East Gateway Project area could purchase flex-fuel vehicles and utilize this fuel once it is commercially available in the region and local vicinity. The proposed project would not interfere with the statewide implementation of this strategy.</p>
<p>Heavy-Duty Vehicle Emission Reduction Measures</p> <p>Increased efficiency in the design of heavy duty vehicles and an education program for the heavy duty vehicle sector.</p>	<p>Consistent</p> <p>The new uses within the East Gateway Project area would not manufacture new heavy duty trucks that would be subject to ARB regulations. The heavy duty vehicles that travel to and from the East Gateway Project area on public roadways would be in</p>

Strategy	Project Consistency
<b>California Air Resources Board</b>	
	compliance with ARB vehicle standards that are in effect at the time of vehicle purchase. The proposed project would not interfere with the statewide implementation of these regulations.
<p>Achieve 50% Statewide Recycling Goal</p> <p>Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48% has been achieved on a statewide basis. Therefore, a 2% additional reduction is needed.</p>	<p>Consistent</p> <p>As discussed in <b>Section 5.13, Utilities and Service Systems</b>, the new uses within the East Gateway Project area would be subject to all applicable standards for the diversion of recyclable materials from landfills and are not expected to cause the City of Santa Paula to divert less than 50% of recyclable materials from landfills.</p>
<p>Zero Waste – High Recycling</p> <p>Efforts to exceed the 50 percent goal would allow for additional reductions in climate change emissions.</p>	<p>Consistent</p> <p>As discussed in <b>Section 5.13, Utilities and Service Systems</b>, the new uses within the East Gateway Project area would be subject to all applicable standards for the diversion of recyclable materials from landfills and are not expected to cause the City of Santa Paula to divert less than 50% of recyclable materials from landfills.</p>
<b>California Department of Forestry</b>	
<p>Urban Forestry</p> <p>A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.</p>	<p>Consistent</p> <p>New landscaping trees would be provided throughout the East Gateway Project area.</p>
<b>California Department of Water Resources</b>	
<p>Water Use Efficiency</p> <p>Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.</p>	<p>Consistent</p> <p>As discussed above and in <b>Section 5.13, Utilities and Service Systems</b>, the new uses within the East Gateway Project area would comply with the city's mandatory water conservation measures that, relative to the city's increase in population, have reduced the rate of water demand in recent years. The East Gateway Specific Plan area would also be served by a recycled water system that would reduce the amount of potable water that would need to be used for landscape irrigation.</p>
<b>California Energy Commission (CEC)</b>	
<p>Building Energy Efficiency Standards in Place and in Progress</p> <p>Public Resources Code 25402 authorizes the CEC to adopt and</p>	<p>Consistent</p>

Strategy	Project Consistency
<b>California Air Resources Board</b>	
periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).	At a minimum, the new uses within the East Gateway Project area would be constructed in compliance with the standards of Title 24 that are in effect at the time of development. The current 2010 Title 24 standards (effective as of January 1, 2011) were adopted by the State to respond, amongst other reasons, to the requirements of AB 32. The proposed project would not interfere with the statewide implementation of these regulations.
Appliance Energy Efficiency Standards in Place and in Progress  Public Resources Code 25402 authorizes the CEC to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	Consistent  Under State law, appliances that are purchased for the new uses within the East Gateway Project area – both pre- and post-development – would be consistent with energy efficiency standards that are in effect at the time of manufacture. The proposed project would not interfere with the statewide implementation of these regulations.
Fuel-Efficient Replacement Tires & Inflation Programs  State legislation established a statewide program to encourage the production and use of more efficient tires.	Consistent  The new uses within the East Gateway Project area are not expected to manufacture tires for motor vehicles. All vehicle tires purchased and used within California by building owners, tenants, and residents within the East Gateway Project area would comply with the regulations that are in effect at the time of manufacture and sale. The proposed project would not interfere with the statewide implementation of this strategy.
Alternative Fuels: Non-Petroleum Fuels  Increasing the use of non-petroleum fuels in California's transportation sector, as recommended in the CEC's 2003 and 2005 Integrated Energy Policy Reports.	Consistent  Building owners, tenants, and residents of the East Gateway Project area could purchase non-petroleum fuel vehicles and utilize these fuels once they are commercially available in the region and local vicinity. The proposed project would not interfere with the statewide implementation of this strategy.
<b>Business, Transportation and Housing</b>	
Smart Land Use and Intelligent Transportation Systems (ITS)  Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors.  ITS is the application of advanced technology systems and management strategies to improve operational efficiency of	Consistent  The project provides infill development of new industrial and/or commercial and business park uses within an area of the city that has been utilized and planned for such uses. The proposed land uses would have readily available access to the Santa Paula Freeway, thereby providing for the efficient movement of goods.

Strategy	Project Consistency
<p><b>California Air Resources Board</b></p> <p>transportation systems and movement of people, goods and services.</p> <p>The Governor is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through state investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity and a quality environment.</p> <p>Smart land use, demand management, ITS, and value pricing are critical elements in this plan for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.</p>	
<p><b>State and Consumer Services Agency</b></p>	
<p>Green Buildings Initiative</p> <p>Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels. The Executive Order and related action plan spell out specific actions state agencies are to take with state-owned and –leased buildings. The order and plan also discuss various strategies and incentives to encourage private building owners and operators to achieve the 20 percent target.</p>	<p>Consistent</p> <p>At a minimum, the new uses within the East Gateway Project area would be constructed in compliance with the standards of Title 24 that are in effect at the time of development. The current 2010 Title 24 standards (effective as of January 1, 2011) were adopted by the State to respond, amongst other reasons, to the requirements of AB 32. The proposed project would not interfere with the statewide implementation of these regulations.</p>
<p>California Solar Initiative</p> <p>The solar initiative includes installation of 1 million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses, increased use of solar thermal systems to offset the increasing demand for natural gas, use of advanced metering in solar applications, and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.</p>	<p>Consistent</p> <p>Solar panels are not proposed for the new uses within the East Gateway Project area at this time. The project would not preclude the installation and use of solar equipment at the new uses within the East Gateway Project area at a later date. <b>Mitigation measure 5.7-1</b> is recommended to encourage the installation and use of solar roof systems for the new uses within the East Gateway Project area.</p>

Source: Climate Action Team, 2006 and Cadence Environmental Consultants, 2012.

**Table 5.7-6  
Project Consistency with ARB Scoping Plan Recommended Greenhouse Gas Emission Reduction Measures**

Measure	Project Consistency
<p>Energy Efficiency</p> <p>Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly-owned utilities).</p>	<p>Consistent</p> <p>The current 2010 Title 24 standards (effective as of January 1, 2011) were adopted by the State to respond, amongst other reasons, to the requirements of AB 32 and this ARB Scoping Plan strategy. At a minimum, the new uses within the East Gateway Project area would be constructed in compliance with the standards of Title 24 that are in effect at the time of development.</p>
<p>Million Solar Roof Program</p> <p>Install 3,000 MW of solar-electric capacity under California's existing solar programs.</p>	<p>Consistent</p> <p>Solar panels are not proposed for the new uses within the East Gateway Project area at this time. The project would not preclude the installation and use of solar equipment at the new uses within the East Gateway Project area at a later date. <b>Mitigation measure 5.7-1</b> is recommended to encourage the installation and use of solar roof systems for the new uses within the East Gateway Project area.</p>
<p>Green Building Strategy</p> <p>Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.</p>	<p>Consistent</p> <p>The current 2010 Title 24 standards (effective as of January 1, 2011) were adopted by the State to respond, amongst other reasons, to the requirements of AB 32 and this ARB Scoping Plan strategy. At a minimum, the new uses within the East Gateway Project area would be constructed in compliance with the standards of Title 24 that are in effect at the time of development.</p>
<p>Recycling and Waste</p> <p>Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.</p>	<p>Consistent</p> <p>As discussed in <b>Section 5.13, Utilities and Service Systems</b>, the new uses within the East Gateway Project area would be subject to all applicable standards for the diversion of recyclable materials from landfills.</p>
<p>Water</p> <p>Continue efficiency programs and use cleaner energy sources to</p>	<p>Consistent</p> <p>As discussed above and in <b>Section 5.13, Utilities and Service Systems</b>, the new</p>

move and treat water.

uses within the East Gateway Project area would comply with the city's mandatory water conservation measures that, relative to the city's increase in population, have reduced the rate of water demand in recent years. The East Gateway Specific Plan area would also be served by a recycled water system that would reduce the amount of potable water that would need to be used for landscape irrigation.

*Source: Climate Action Team, 2006 and Cadence Environmental Consultants, 2012.*

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## 5.7.7 REFERENCES

State agency planning documents used in this section include the following:

- California Air Resources Board, *Climate Change Scoping Plan*, December 2008.
- California Air Resources Board, *AB 32 Climate Change Scoping Plan Progress Report*, September 23, 2010.
- California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*, December 2006.
- California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, March 2006.

The following technical report was used in the preparation of this analysis and is provided in **Appendix 5.13**:

- Fehr & Peers, Inc., *Draft Traffic Study for the Santa Paula East Gateway Project Environmental Impact Report*, August 2012.

## 5.7.8 METHODOLOGY

There are several unique challenges to analyzing greenhouse gas emissions and climate change under CEQA, largely because of global nature of climate change. Typical CEQA analyses address local actions that have local – or, at most, regional – impacts, whereas climate change presents the considerable challenge of analyzing the relationship between local activities and the resulting potential, if any, for global environmental impacts. Most environmental analyses examine the “project-specific” impacts that a particular project is likely to generate. With regard to global warming, however, it is generally accepted that while the magnitude of global warming effects may be substantial, the GHG emissions from a single general development project would have no noticeable effect on global climate.

Global climate change is also fundamentally different from other types of air quality impact analyses under CEQA in which the impacts are all measured within, and are linked to, a discrete region or area. Instead, a global climate change analysis must be considered on a global level, rather than the typical local or regional setting, and requires consideration of not only emissions from the project under consideration, but also the extent of the displacement, translocation, and redistribution of emissions. In the usual context, where air quality is linked to a particular location or area, it is appropriate to consider the creation of new emissions in that specific area to be an environmental impact whether or not the emissions are truly “new” emissions to the overall globe. When the impact is a global one, however, it makes more sense to consider whether the emissions really are new emissions, or are merely being moved from one place to another. For example, the approval of a new development plan or project does not necessarily create new automobile drivers - the primary source of emissions generated by a land use.



Rather, due to the “relocation” factor, new land use projects sometimes merely redistribute existing mobile emissions;<sup>8</sup> accordingly, the use of models that measure overall emissions increases without accounting for existing emissions will substantially overstate the impact of the development project on global warming. This makes an accurate analysis of GHG emissions substantially different from other air quality impacts, where the “addition” of redistributed emissions to a new locale can make a substantial difference to overall air quality.

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8 For example, a subdivision of 500 homes generates 5,000 new trips per day and those trips would be added to the local streets and intersections. In the case of climate change, the trips that are associated with those same 500 homes presumably would emit roughly the same volume of GHGs in the City of Santa Paula as they would if they were traveling the same number of miles in Cleveland, Ohio. As a result, while raw vehicle trip counts occurring within a project area will accurately predict changes in congestion at intersections, the same certainty cannot be provided for climate change. The trips would certainly increase the number of vehicles passing through local intersections, but they will not increase the amount of GHG emissions into the world’s atmosphere if those trips simply have been relocated from another location on the planet.