4.7 GREENHOUSE GAS EMISSIONS

This chapter of the Administrative Draft EIR describes the environmental setting and evaluates the extent to which the proposed Project is expected to contribute to cumulative greenhouse gas (GHG) emissions. Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, global warming impacts of a project are considered on a cumulative basis.

To assess the significance of the Project's potential GHG emissions, this chapter evaluates consistency of the proposed Project with the strategies outlined in the California Air Resources Board's (CARB) Scoping Plan in accordance with the GHG reduction goals of Assembly Bill 32 (AB 32), and strategies proposed by the San Joaquin Council of Governments (SJCOG) to reduce vehicle miles traveled (VMT) in the region, in accordance with Senate Bill 375 (SB 375). This chapter also considers GHG standards of significance as set forth in the San Joaquin Valley Air Pollution Control District's (SJVAPCD) CEQA Guidance; policies and mitigations suggested by the California Attorney General and the California Air Pollution Control Officer's Association (CAPCOA); and consistency of the Project with the City's Sustainability Action Plan. Greenhouse gas modeling conducted by Illingworth& Rodkin is included in Appendix D.

A. Environmental Setting

1. Greenhouse Gases and Climate Change

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocar-

bons, and chlorofluorocarbons.[1,2] The major GHGs are briefly described below. Table 4.7-1 lists the GHGs applicable to the proposed Project and their relative global warming potentials (GWP) compared to CO_2.

- Carbon dioxide (CO_2) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- Methane (CH_4) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- Nitrous oxide (N_2O) is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- Fluorinated gases are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as High GWP gases.
- Chlorofluorocarbons (CFCs) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down

[1] Intergovernmental Panel on Climate Change, 2001, *Third Assessment Report: Climate Change 2001*, New York: Cambridge University Press.

[2] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant.

TABLE 4.7-1 **GREENHOUSE GASES AND THEIR RELATIVE GLOBAL WARMING POTENTIAL COMPARED TO CO_2**

Greenhouse Gas	Atmospheric Lifetime (Years)	Global Warming Potential Relative to CO_2[a]
Carbon Dioxide (CO_2)	50 to 200	1
Methane (CH_4)[b]	12 (±3)	21
Nitrous Oxide (N_2O)	120	310
Hydrofluorocarbons:		
HFC-23	264	11,700
HFC-32	5.6	650
HFC-125	32.6	2,800
HFC-134a	14.6	1,300
HFC-143a	48.3	3,800
HFC-152a	1.5	140
HFC-227ea	36.5	2,900
HFC-236fa	209	6,300
HFC-4310mee	17.1	1,300
Perfluoromethane: CF_4	50,000	6,500
Perfluoroethane: C_2F_6	10,000	9,200
Perfluorobutane: C_4F_{10}	2,600	7,000
Perfluoro-2-methylpentane: C_6F_{14}	3,200	7,400
Sulfur Hexafluoride (SF_6)	3,200	23,900

[a] Based on 100-year time horizon of the Global Warming Potential (GWP) of the air pollutant relative to CO_2.

[b] The methane GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

Source: Intergovernmental Panel on Climate Change (IPCC). 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press.

ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

- Perfluorocarbons (PFCs) are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

- Sulfur Hexafluoride (SF_6) is a colorless gas soluble in alcohol and ether, and slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- Hydrochlorofluorocarbons (HCFCs) contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone as compared to CFCs, and therefore have been introduced as temporary replacements for CFCs.

- Hydrofluorocarbons (HFCs) contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.[3,4,5]

[3] United States Environmental Protection Agency, 2008, http://www.epa.gov/climatechange/emissions/index.html, accessed on February 8, 2012.

[4] Intergovernmental Panel on Climate Change, 2001. *Third Assessment Report: Climate Change 2001*, New York: Cambridge University Press.

[5] Intergovernmental Panel on Climate Change, 2007. *Fourth Assessment Report: Climate Change 2007*, New York: Cambridge University Press.

2. California's GHG Sources and Relative Contribution

California is the second largest emitter of GHG in the United States, only surpassed by Texas, and is the tenth largest GHG emitter in the world.[6] However, because of more stringent air emission regulations, in 2001, California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO_2 emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services).[7]

CARB's latest update to the statewide GHG emissions inventory was conducted in 2010 for year 2008 emissions.[8] In 2008, California produced 478 million metric tons (MMTons) of CO_2-equivalent (CO_2e) GHG emissions.[9] California's transportation sector is the single largest generator of GHG emissions, producing 36.6 percent of the State's total emissions. Electricity consumption is the second largest source, comprising 24.4 percent. Industrial activities are California's third largest source of GHG emissions, comprising 19.4 percent of State's total emissions. Other major sources of GHG emissions include commercial and residential land uses, recycling and waste, high global warming potential (GWP) GHGs,[10] agriculture, and forestry.[11]

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[6] California Energy Commission, 2005. Climate Change Emissions Estimates from Bemis, Gerry and Jennifer Allen, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2002 Update*, California Energy Commission Staff Paper CEC-600-2005-025, Sacramento, California.

[7] California Energy Commission, 2006. *Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004, Report CEC-600-2006-013-SF*.

[8] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (AB 32) (2006).

[9] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

[10] High global warming potential (GWP) gases are GHGs that have hundreds to thousands of times the climate impact as CO_2. High GWP substances are largely used as refrigerants in stationary and mobile source air conditioning and refrigeration.

3. Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and climate change pollutants that are attributable to human activities. The amount of CO_2 has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million (ppm) per year since 1960, mainly due to combustion of fossil fuels and deforestation.[12] These recent changes in climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[13]

Climate change scenarios are affected by varying degrees of uncertainty. Intergovernmental Panel on Climate Change's (IPCC) 2007 Fourth Assessment Report projects that the global mean temperature increase from 1990 to 2100, under different climate change scenarios, will range from 1.4 to 5.8 degrees Celsius (°C) (2.5 to 10.4 degrees Fahrenheit [°F]). In the past, gradual changes in the Earth's temperature changed the distribution of species, availability of water, etc. Human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic timeframe but within a human lifetime.[14]

However, high GWP gases are also used as foam-blowing agents, in electrical transmission, as fire suppressants, and in various consumer products.

[11] California Air Resources Board (CARB), 2010. California Greenhouse Gas Inventory for 2000—2008. By Category as Defined by the Scoping Plan.

[12] Intergovernmental Panel on Climate Change, 2007. *Fourth Assessment Report: Climate Change 2007,* New York: Cambridge University Press.

[13] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

[14] Intergovernmental Panel on Climate Change, 2007. *Fourth Assessment Report: Climate Change 2007,* New York: Cambridge University Press.

4. Potential Climate Change Impacts for California

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are also hard to predict. In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures, 2) a smaller fraction of precipitation falling as snow, 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones, 4) an advance snowmelt of 5 to 30 days earlier in the springs, and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms.[15] According to the California Climate Action Team (CAT), even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 4.7-2), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming.

Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks are shown in Table 4.7-2 and include public health impacts, water resources impacts, agricultural impacts, coast sea level impacts, forest and biological resource impacts, and energy demand impacts.

B. Regulatory Framework

1. Federal Laws and Regulations

The US EPA announced on December 7, 2009 that GHG emissions threaten the public health and welfare of the American people, and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 US Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the

[15] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

TABLE 4.7-2 **SUMMARY OF GLOBAL CLIMATE CHANGE RISKS TO CALIFORNIA**

Impact Category	Potential Risk
Public Health Impacts	Poor air quality made worse More severe heat
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coast Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: California Energy Commission, 2006. *Our Changing Climate, Assessing the Risks to California, 2006 Biennial Report, California Climate Change Center, CEC-500-2006-077.* California Energy Commission, 2008. *The future Is Now, An Update on Climate Change Science, Impacts, and Response Options for California, CEC-500-2008-0077.*

EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[16]

The EPA's endangerment finding covers emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world.

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 metric tons (MTons) or more per year are required to submit an annual report.

2. State Laws and Regulations

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05, Assembly Bill 32, and Senate Bill 375.

a. Executive Order S-03-05

Executive Order S-3-05, was signed June 1, 2005 and set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

[16] United States Environmental Protection Agency, 2009. *EPA: Greenhouse Gases Threaten Public Health and the Environment. Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity*, http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252, accessed on February 8, 2012.

b. AB 32, the Global Warming Solutions Act

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Assembly Bill 32 (AB 32), *the Global Warming Solutions Act of 2006*. AB 32 was passed by the California State Legislature on August 31, 2006 to place the State on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-3-05.

AB 32 directed CARB to adopt discrete early action measures to reduce GHG emissions and outline additional reduction measures to meet the 2020 target. Based on the GHG emissions inventory conducted for the Scoping Plan by CARB, GHG emissions in California by 2020 are anticipated to be approximately 596 MMTons. In December 2007, CARB approved a 2020 emissions limit of 427 MMTons (471 million tons) for the State. The 2020 target requires a total emissions reduction of 169 MMTons, 28.5 percent from the projected emissions of the business-as-usual (BAU) scenario for the year 2020 (i.e. 28.5 percent of 596 MMTons).[17,18]

In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 MTons per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012. The Climate Action Registry Reporting Online Tool was established through the Climate Action Registry to track GHG emissions.

[17] California Air Resources Board, 2008. Climate Change Proposed Scoping Plan, a Framework for Change.

[18] CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

i. CARB Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. Key elements of CARB's GHG reduction plan that are relevant to this analysis include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a mix of 33 percent for energy generation from renewable sources;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets; and
- Adopting and implementing measures pursuant to State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (LCFS).[19]

While local government operations were not accounted for in achieving the 2020 emissions reduction, CARB estimates that land use changes implemented by local governments that integrate jobs, housing, and services result in a reduction of 5 MMTons, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments plays in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of today's levels by 2020 to ensure that municipal and community-wide emissions match the State's reduction target. Measures that local governments take to support shifts in land use patterns are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer VMT.

[19] On December 29, 2011, the US District Court for the Eastern District of California issued several rulings in the federal lawsuits challenging the LCFS. One of the court's rulings preliminarily enjoins the CARB from enforcing the regulation during the pendency of the litigation.

c. Senate Bill 375

In 2008, (SB 375), *the Sustainable Communities and Climate Protection Act*, was adopted to connect the GHG emissions reductions targets established in the Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 regions in California managed by a metropolitan planning organization (MPO).

SJCOG is the MPO for the City of Tracy. In September 2010, CARB set per capita GHG emissions reduction targets for 2020 and 2035 for the MPOs, except the MPOs in the San Joaquin Valley region (which includes SJCOG) where CARB identified a provisional target for the San Joaquin Valley region. This is because the eight MPOs in the San Joaquin Valley region are anticipated to absorb 22 percent of California's population growth. On December 14, 2012, CARB adopted a target recommendation for the eight MPOs in the San Joaquin Valley, which is a 5 percent per capita GHG reduction from 2005 in 2020 and a 10 percent per capita GHG reduction from 2005 in 2035 on an aggregate valley-wide basis. Therefore, an individual target is not proposed for SJCOG.[20] The first SCS for the San Joaquin Valley region is anticipated in the 2014-2015 timeframe.

d. Assembly Bill 1493

In response to the transportation sector accounting for more than half of California's CO_2 emissions, Assembly Bill (AB) 1493 (AB 1493, Pavley) was enacted on July 22, 2002. Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016.

[20] California Air Resources Board (CARB), 2013. Staff Report Update on Senate Bill 375 Implementation in the San Joaquin Valley.

e. Executive Order S-01-07

On January 18, 2007, a new Low Carbon Fuel Standard for transportation fuels sold within the State was set. Executive Order S-1-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The Low Carbon Fuel Standard applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

f. Senate Bills 1078 and 107 and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewable portfolio standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expands the state's Renewable Energy Standard to 33 percent renewable power by 2020. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

g. California Building Code

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission in June 1977 and most recently revised in 2008 (Title 24, Part 6, of the California Code of Regulations [CCR]).[21] Title 24 requires

[21] Although new building energy efficiency standards were adopted in April 2008, these standards did not go into effect until 2009.

the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code was adopted as part of the California Building Standards Code (CALGreen) (Part 11, Title 24, CCR). The green building standards that became mandatory in the 2010 edition of the code established voluntary standards on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011.

h. 2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances. While these regulations are now often viewed as "business-as-usual," they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

3. Regional Regulations and Policies

a. San Joaquin Valley Unified Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) manages air quality in the San Joaquin Valley Air Basin (SJVAB). SJVAPCD is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings Tulare and the San Joaquin Valley portion of Kern. The primary role of SJVAPCD is to develop plans, rules and regulations as well as implement control measures in the SJVAB to control air pollution. Of relevance to this analysis, the SJVAPCD adopted guidance meth-

odology for purposes of evaluating greenhouse gas emission impacts. SJVACPD adopted a Climate Change Action Plan (CCAP) to identify strategies to reduce GHG emissions in the San Joaquin Valley Air Basin (see Section D(2), SJVAPCD Significance Criteria).[22]

4. Local Regulations and Policies

a. City of Tracy General Plan

Assembly Bill 170 (2003) requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies, and feasible implementation strategies designed to improve air quality. The following are relevant City General Plan air quality goals, policies, objectives, and actions (Table 4.7-3).[23] A full listing of all the General Plan goals, policies, objectives, and actions are in Appendix C:

b. City of Tracy Sustainability Action Plan

The Sustainability Action Plan (SAP) for the City of Tracy was adopted in 2011.[24] The plan presents analyses, sustainability targets, and measures for an array of topics including GHGs; rather than imposing specific requirements on individual development projects, the SAP reflects community-wide policies that the City will implement, as appropriate. The GHG emissions sustainability target is a 15-percent reduction in community-wide per capita emissions from the 2006 baseline of 11.6 metric tons of CO2e by 2020. This reduction target would be achieved through corresponding sustainability targets set forth for energy, water, solid waste, and transportation and land use sectors. The SAP represents the City's plan to reduce GHG emissions target to achieve the GHG reduction target of AB 32, and reflects the City's anticipated role in encouraging reductions.

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[22] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2009. Climate Change Action Plan, Final Staff Report, Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act.

[23] City of Tracy, 2011. City of Tracy General Plan.

[24] City of Tracy website: http://www.ci.tracy.ca.us/documents/Sustainability_Action_Plan.pdf

TABLE 4.7-3 **GENERAL PLAN POLICIES RELEVANT TO GREENHOUSE GAS EMISSIONS**

Goal/ Policy No.	Goal/Policy Content
Air Quality Element	
Goal AQ-1	Improved air quality and reduced greenhouse gas emissions.
Objective AQ-1.1	*Improve air quality and reduce greenhouse gas emissions through land use planning decisions.*
Policy P1	The City shall promote land use patterns that reduce the number and length of motor vehicle trips.
Policy P2	To the extent feasible, the City shall maintain a balance and match between jobs and housing.
Policy P3	Higher density residential and mixed-use development shall be encouraged adjacent to commercial centers and transit corridors.
Policy P4	Employment areas should include a mix of support services to minimize the number of trips.
Policy P5	Village Centers and other retail and office areas should be located within walking and biking distance of existing and proposed residential developments.
Objective AQ-1.2	*Promote development that minimizes air pollutant and greenhouse gas emissions and their impact on sensitive receptors as a result of indirect and stationary sources.*
Policy P1	The City shall assess air quality impacts using the latest version of the CEQA Guidelines and guidelines prepared by the San Joaquin Valley Air Pollution Control District.
Policy P2	The City shall assess through the CEQA process any air quality impacts of development projects that may be insignificant by themselves, but cumulatively significant.
Policy P3	Developers shall implement best management practices to reduce air pollutant emissions associated with the construction and operation of development projects.
Policy P4	New development projects should incorporate energy efficient design features for HVAC, lighting systems and insulation that exceed Title 24.
Policy P5	Use of solar water and pool heaters is encouraged.
Policy P6	Installation of solar voltaic panels on new homes and businesses shall be encouraged.
Policy P7	Trees should be planted on the south- and west-facing sides of new buildings or building undergoing substantial renovation in order to reduce energy usage.

Goal/ Policy No.	Goal/Policy Content
Policy P9	New developments shall follow the current requirements of the SJVAPCD with respect to wood burning fireplaces and heaters.
Policy P10	Stationary air pollutant emission sources (e.g. factories) shall be located an appropriate distance away and downwind from residential areas and other sensitive receptors.
Policy P12	New sources of toxic air pollutants shall prepare a Health Risk Assessment as required under the Air Toxics "Hot Spots" Act and, based on the results of the Assessment, establish appropriate land use buffer zones around those areas posing substantial health risks.
Policy P13	Dust control measures consistent with San Joaquin Valley Air Pollution Control District rules shall be required as a condition of approval for subdivision maps, site plans, and all grading permits.
Policy P14	Developments that significantly impact air quality shall only be approved if all feasible mitigation measures to avoid, minimize, or offset the impact are implemented.
Policy P15	Encourage businesses to electrify loading docks or implement idling-reduction systems so that trucks transporting refrigerated goods can continue to power cab cooling elements during loading, layovers, and rest periods.
Action A1	Review standards for the design and use of new drive-through businesses with the aim of reducing adverse impacts on air quality.
Objective AQ-1.3	*Provide a diverse and efficient transportation system that minimizes air pollutant and greenhouse gas emissions.*
Policy P3	The City shall encourage employers to establish Transportation Demand Management programs.
Policy P5	The City shall require direct pedestrian and bicycle linkages from residential areas to parks, schools, retail areas, high-frequency transit facilities and major employment areas.

C. Existing Conditions

The Specific Plan Area consists of approximately 1,780 acres. There are a number of existing buildings and structures within the Specific Plan Area, including the following: twelve existing residences and associated structures; a PG&E gas facility; two public roadways (Mountain House Parkway and Hansen Road); and a cell tower installation and related equipment building. The remainder of the Specific Plan Area consists primarily of agricultural land, currently utilized for irrigated crop production, dry farming, and periodic cattle grazing. GHG emissions from agricultural use are associated with offroad agricultural equipment and fertilizer application from crop production. It should be noted that the level of agricultural production varies from year to year; further, there is not detailed information available on the amount of fertilizer applied to agricultural fields on an annual basis and the amount and type of equipment used within the Specific Plan Area. Regardless, GHG emissions from agricultural use onsite are assumed to be nominal given the scope of existing operations , as are the emissions from the existing few residences. For the purpose of this GHG emissions analysis, GHG emissions committed from existing land uses are not netted out. Therefore, the GHG emissions analysis presents a conservative evaluation of GHG emissions impacts of the Project.

D. Standards of Significance

1. CEQA Appendix G Standards

According to Appendix G of the CEQA Guidelines GHG impacts associated with the proposed Project would be considered significant if it would:

- GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

2. SJVAPCD Significance Criteria

The issue of global climate change is, by definition, a cumulative environmental impact. The SJVAPCD adopted guidance methodology for addressing GHG emissions under CEQA on December 17, 2009.[25] In addition, SJVACPD adopted a Climate Change Action Plan (CCAP) to identify strategies to reduce GHG emissions in the San Joaquin Valley Air Basin.[26] SJVAPCD's methodology includes a tiered approach:

- If a project is exempt from CEQA, individual-level and cumulative GHG emissions are treated as less than significant.
- If the project complies with a GHG emissions reduction plan or mitigation programs that avoid or substantially reduce GHG emissions in the geographic area (i.e. city or county) in which the project is located, individual-level and cumulative GHG emissions are treated as less than significant.

For projects that are not exempt or where no qualifying applicable GHG reduction plans are in place, SJVAPCD requires that a project's GHG emissions be quantified and feasible means of reductions be implemented to reduce a project's emissions. SJVACPD's methodology calculates the amount of GHG emissions from the construction and operation of a project, and then identifies feasible measures – also known as best performance standards (BPS). BPS are defined as the most effective, achieved in-practice means of reducing or limiting GHG emissions from GHG emissions sources, and the focus on measures that improve energy efficiency, increase water efficiency, and reduce vehicle miles traveled (VMT), as well as promoting pedestrian access and public transportation and improving the jobs-housing ratio.

- For projects that can reduce their GHG emissions by 29 percent through the implementation of BPS, then these projects would be determined to

[25] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2009. Guidance for Valley Land-Use Agencies in Addressing GHG Emissions for New Projects.

[26] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2009. Climate Change Action Plan, Final Staff Report, Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act.

have less-than-significant impacts on both an individual and cumulative level.

- For projects that cannot feasibly reduce their GHG emissions by 29 percent through implementation of BPS, then these projects' impacts would be considered significant on both an individual and cumulative level.

For purposes of this analysis, the SJVAPCD thresholds will be used to evaluate the Project's impacts under the first standard of significance.

For purposes of determining whether the Project would have a significant impact under the second standard of significance regarding consistency with plans adopted for the purpose of reducing GHG emissions, this analysis compares the Project to the following:

- Sustainability Action Plan (SAP) for the City of Tracy
- CARB's Scoping Plan
- Attorney General measures
- CAPCOA Guidance

E. Impact Discussion

Following is a description of the methodology used to calculate the Project's GHG emissions for construction and operation.

1. Methodology Used to Calculate the Project's GHG Emissions

a. Construction

Construction emissions were modeled using the California Emissions Estimator Model, Version 2011.1.1 (CalEEMod) with Project-specific inputs, including proposed land use types and sizes. CalEEMod is a computer model developed by the South Coast Air Quality Management District (SCAQMD) to estimate air pollutant and greenhouse gas (GHG) emissions from land use development projects. This modeling assumes that construction equipment and truck emissions will decrease in the future as newer equipment that is required to meet more stringent emission standards, replaces existing equip-

ment. As a result, CalEEMod computes lower emissions for future years. Because the OFFROAD2007 model is integrated in the current version of CalEEMod, the model does not incorporate new regulations adopted after 2007, including the effect of new State regulations that require fleet construction equipment and truck fleet operators to replace or retrofit their fleets to expedite reductions in emissions.

For the purposes of this analysis, construction of the Project is assumed to take place from 2014 to 2034, with the Project being fully built out and operational by 2035. The model default equipment list and phasing schedule were used for computing exhaust emissions rates. For full buildout, the relative default phasing durations were applied to the Project's anticipated construction duration over an approximate 20 year period. Average construction emissions were calculated based on annual emissions over the 20-year construction period.

CalEEMod's default construction equipment mix and schedule are based on surveys of small to mid-sized construction sites conducted by SCAQMD. To be consistent with CARB's OFFROAD2011 modeling methodologies, load factors for equipment usage were reduced by 33 percent. Since the Specific Plan Area is flat and the Project has been designed to reduce mass grading, the Specific Plan Area is assumed to be balanced. CalEEMod input and output worksheets are included in Appendix D.

New road construction and road widening emissions that would occur at full buildout of the Project were modeled using the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Road Construction Emissions Model, RoadMod Version 6.3.2. Proposed road widths and lengths were estimated using information provided in Chapter 6 of the Specific Plan, which is based on the Citywide Roadway and Transportation Master Plan. RoadMod modeling, along with construction emission estimates from CalEEMod modeling of full build out, were computed by traffic analysis zone (TAZ). Under a worst-case scenario, construction that would occur in Phase I of the Project as well as full buildout was modeled to begin in 2014. This is antici-

pated be the earliest year that construction could occur. Full buildout of the Project is assumed to take 20 years. It is assumed that development of the Specific Plan Area would occur over this 20-year period, the rate and timeframe are subject to variation based on market demands, the regional economy, and other socioeconomic factors. The model default schedule, in terms of construction duration, for various construction activities was then applied to the construction start dates of 2014 for each construction TAZ area modeled. Average construction emissions during roadway construction were calculated based on annual emissions over the 20-year construction period. RoadMod output, the default construction equipment list in RoadMod, and other assumptions are contained in Appendix D.

b. Operational Phase

Operational phase emissions resulting from implementation of the land uses associated with the proposed Project were modeled using CalEEMod based on Project-specific inputs , including proposed land uses and sizes, and Project trip generation rates provided by Fehr & Peers (see Appendix L, Traffic Impact Analysis). Model runs were developed for full buildout of the Project. The operational emission estimates for full buildout of the Project were computed for the year 2035.

The methodology for developing the trip estimates is described in Chapter 4.14, Transportation and Traffic. As explained therein, Fehr & Peers developed am and pm peak hour trip generation rates, but provided conversion factors for the air quality and GHG analysis to develop daily trip generation rates for the different land uses. The CalEEMod default vehicle fleet mix was determined to be representative of the expected Project fleet mix. The CalEEMod default traffic mix for the San Joaquin Valley air basin includes 16 percent heavy trucks and 11 percent medium duty trucks, which was considered representative of the Project's operational trip generation as a whole.

The Project's land uses types and sizes were input into CalEEMod, which included commercial uses entered as "Regional Shopping Center," office uses entered as "General Office Building," warehouse uses entered as "Unrefriger-

ated Warehouse-No Rail," Hi-Cube uses entered as "Industrial Park," light industrial uses entered as "General Light Industry," and manufacturing uses entered as "Manufacturing." Because there is no "Hi-Cube" land uses provided in CalEEMod, "Industrial Park" was used as a "dummy" land use allowing user entry of inputs such as trip rates separate from the other warehouse uses. Energy use or Hi-Cube uses were assumed to be the same or less than other warehouse uses, since Hi-Cube is primarily used for the high-capacity storage of goods.

Modeling assumes default energy use (purchased electricity and natural gas) associated with operation of the non-residential buildings, which assumes structures are built to the 2008 Building and Energy Efficiency Standards. Default water/wastewater and waste generation rates from the model were used and off-model calculations were used to scale water/wastewater and waste generation associated with the proposed Project, based on the rates identified in Chapter 4.15, Utilities and Public Service Systems. These calculations can be found in Appendix D.

Operational emissions from existing land uses or the Specfic Plan Area were assumed to be negligible, but in any event, were not subtracted out in order to perform a more conservative analysis. CalEEMod input and output worksheets are included in Appendix D, along with trip generation data.

2. Impact Analysis

a. The Project may generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

The Project's GHG emissions from construction and operation have been calculated for purposes of this analysis, as described more fully below.

i. Construction-Related Emissions

As described in Table 4.7-4, construction of the Project would generate a total of 24,020 MTons/Year. This figure does not assume any mitigation measures have been implemented. Because construction emissions are a temporary

GHG impact, they are not considered alone but as part of the Project's emissions. These one-time emissions are amortized over 20 years.

ii. Operation-Related Emissions

As described in Table 4.7-5 below, operation of the Project at full buildout would generate a total of 286,472 MTons/Year.

Annual GHG emissions from Project-related mobile and stationary sources have been calculated for construction and operation of the Project. These emissions are shown in Table 4.7-5 below. As identified in this table, the proposed Project would generate a substantial increase in GHG emissions compared to baseline environmental conditions. The majority of these emissions are from transportation sources (i.e. passenger vehicles and trucks trips).

b. Reductions of Construction-Related GHG Emission Through Implementation of BPS

i. Construction-Related Impacts

Construction of the Project would generate approximately 480,401 MTons over the course of 20 years. There is no BPS applicable for construction. To address construction impacts of the Project, construction emissions are amortized over a 20-year Project duration and considered as part of the operational analysis. Construction-related GHG emissions would represent a substantial contribution of the Project's GHG emissions impacts and would be *significant*.

ii. Operational-Related Impacts

As noted above, operation of the Project would general a total of 286,472 MTons/Year (with amortized construction emissions). To determine the significance of these construction-related impacts, in accordance with the SJVAPCD methodology, Project-related BPS for operations are identified based on the current SJVAPCD list.

TABLE 4.7-4 **OPERATIONAL-RELATED GREENHOUSE GAS EMISSIONS**

Construction Emissions Year	GHG (MTons/Year)
2014	744
2015	883
2016	22,167
2017	29,233
2018	29,054
2019	28,796
2020	28,673
2021	28,716
2022	28412
2023	28236
2024	28,295
2025	28,047
2026	28,047
2027	28,047
2028	27,940
2029	28,047
2030	27,558
2031	27,558
2032	16,781
2033	716
2034	1,955
Total Development	467,906
RoadMod Emissions	12,495

TABLE 4.7-4 **OPERATIONAL-RELATED GREENHOUSE GAS EMISSIONS**

Construction Emissions Year	GHG (MTons/Year)
Total	480,401
Amortized (20 Years)	24,020

Source: CalEEMod, Version 2011.1.1, and RoadMod, Version 6.3.2 (roadway construction only).

TABLE 4.7-5 **OPERATIONAL-RELATED GREENHOUSE GAS EMISSIONS**

Category	Buildout GHG (MTons/Year)
Energy –Natural Gas and Purchased Electricity	45,255
Transportation[a]	180,829
Waste[b]	34,438
Water/Wastewater[b]	1,930
Total	262,452
Amortized (20 Years)[c]	24,020
Total with Amortized Construction	286,472

[a] Trip rates and fleet mix in CalEEMod based on information provided by Fehr & Peers.
[b] Water/Wastewater and Waste in the CalEEMod output were adjusted to reflect the water generation and waste generation identified in Chapter 4.15, *Utilities and Service Systems.*
[c] Construction emissions are amortized over the 20-year construction period.
Source: CalEEMod, Version 2011.1.1, and RoadMod, Version 6.3.2 (roadway construction only).

Table 4.7-6 is a list of BPS that the proposed Project would incorporate, as well as equivalent points. As describe in Table 4.7-6, incorporation of the BPS would reduce the Project's operational-related GHG emissions by appropriately 11 percent. This figure represents incorporation of all applicable and feasible BPS on SJVAPCD's current list. This figure does not include

TABLE 4.7-6 **SJVAPCD APPLICABLE BEST PERFORMANCE STANDARDS**

Measure No.	Measure Name	Estimated CO_2 Equivalent Point Reductions	Description
Bicycle/Pedestrian/Transit Measures			
1	Bike parking	0.63	The Project would provide short-term facilities at a minimum ratio of one bike rack space per 20 vehicle spaces. The Project would provide long-term facilities with a minimum ratio of one long-term bicycle storage space per 20 employee parking spaces.
4	Proximity to bike path	0.63	The Specific Plan Area is located within ½-mile of an existing Class I or Class II bike lane, and Project design includes a comparable network that connects the Project uses to the existing off-site bike facility. Existing facilities are defined as those that are physically constructed and ready for use prior to the first 20 percent of the Project's occupancy permits being granted. Project design includes a designated bicycle route connecting all uses, bicycle parking facilities, site entrances, and primary building entrances to Class I or Class II bike lane(s). Proposed bicycle routes would connect to all streets contiguous with the Specific Plan Area, and would be compatible with automobile parking and circulation facilities. All streets internal to the Project wider than 75 feet have Class II bicycle lanes on both sides. Class I bike lanes also serve pedestrians. Roads that have Class II bike lanes also have sidewalks on both sides.
5	Pedestrian network	1.0	The Project would provide an integrated pedestrian access network that internally links all uses and connects to existing external streets and pedestrian facilities. Existing facilities are defined as those facilities that are physically constructed and ready for use prior to the first 20 percent of the Project's occupancy permits being granted, which the Project would satisfy as the network would build out concurrently with Project construction.
5a	Pedestrian network	0.5	The Project would provide a pedestrian access network that internally links all uses for connecting to planned external streets and pedestrian facilities (facilities must be included in a pedestrian master plan or equivalent).
6	Pedestrian barriers minimized	1.0	The Project's site design and building placement would minimize barriers to pedestrian access and interconnectivity.
8	Bus shelter for planned transit service	0.25	The Project would provide transit stops with safe and convenient bicycle/pedestrian access, as well as essential transit stop improvements (i.e. shelters, route information, benches, and lighting) in anticipation of future transit service.
9	Traffic calming	0.25	Project design includes a high level of connectivity and accommodations for bicycles and pedestrians to promote pedestrian and bicycle safety and usage. Traffic calming measures are desirable because they facilitate use of these other transit modes. Project roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by featuring traffic-calming measures, which may include, among other things: bike lanes, center islands, closures (cul-de-sacs), diverters, education, forced turn lanes, speed humps, etc.

TABLE 4.7-6 **SJVAPCD APPLICABLE BEST PERFORMANCE STANDARDS**

Measure No.	Measure Name	Estimated CO_2 Equivalent Point Reductions	Description
Parking Measures			
13	Pedestrian pathway through parking	0.5	Project design includes a parking lot design that has clearly marked and shaded pedestrian pathways between transit facilities and building entrances, with pathways connected to all transit facilities internal or adjacent to Specific Plan Area.
Site Design Measures			
17	Orientation toward planned transit, bikeway, or pedestrian corridor	0.25	The Project is oriented towards planned transit, bicycle, or pedestrian corridors consistent with the City's General Plan and the Citywide Roadway and Transportation Master Plan. For example, in the lands covered by General Office use, this part of the Project has been designated to have shorter block lengths, reduced setbacks, and direct connectivity to the Central Green in an effort to create a walkable employment district. Setback distance is minimized. Primary entrances to buildings are located along planned or existing public street frontage. The Project would provide bicycle/pedestrian access to any planned bicycle/pedestrian corridor(s).
Building Component Measures[a]			
23	Suburban mixed-use	3.0	The Project would develop a mix of uses, including commercial, office and business park industrial uses; as well as areas of park, recreational facilities, and open space.
27	Energy Star roof	0.5	Install Energy Star–labeled roof materials. Energy Star–qualified roof products reflect more of the sun's rays, decreasing the amount of heat transferred into a building. The 2008 Building and Energy Efficiency Standards require light-colored "cool" roofs. Individual development projects within the Cordes Ranch Specific Plan would be required to adhere to the California Building Code.
29	Exceed Title 24	1.0	The Project would be required to be constructed to achieve the Building and Efficiency Standards that are effective at the time of construction. At a minimum, buildings would be constructed to achieve the 2013 Building and Energy Efficiency Standards (effective January 1, 2014). The 2013 Building and Energy Efficiency Standards for non-residential buildings are 30 percent higher than 2008 standards, and 15 percent higher than 2008 standards, for non-residential buildings. Because the 2005 Building and Energy Efficiency Standards are the BAU, the Project is considered to be consistent with this BPS.
30	Solar orientation	0.5	The Project would, as feasible, orient buildings to face either north or south (within 30 degrees of N/S) to facilitate solar energy usage. CALGreen requires that site design consider the orientation of buildings to take advantage of sunlight and to reduce heating and cooling costs. Adherence to the mandatory measures of CALGreen would ensure compliance with this measure.

TABLE 4.7-6 **SJVAPCD APPLICABLE BEST PERFORMANCE STANDARDS**

Measure No.	Measure Name	Estimated CO_2 Equivalent Point Reductions	Description
31	Non-roof surfaces	1.0	The Project would provide shade (within 5 years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30 percent of the site's non-roof impervious surfaces, including parking lots, walkways, plazas.
	Total BPS Achieved[b]	11.0	

Notes: The BPS point system is roughly equivalent to the percent reduction achieved from business-as-usual.

[a] SJVAPCD includes a BPS for projects that exceed Title 24 requirements by 20 percent based on the 2005 Building and Energy Standards. Because the Scoping Plan includes emissions reductions from energy efficiency increases that have now been adopted in the California Building Code (e.g., the 2013 Building and Energy Efficiency Standards), these reductions are accounted for in Table 4.7-6.

Source: San Joaquin Valley Air Pollution Control District (SJVAPCD). 2009, December 17. Guidance for Valley Land-Use Agencies in Addressing GHG Emissions for New Projects.

potential additional emission reductions that could occur as a result of locating the Project – a major employment center (36,708 employees at full buildout) – near existing housing, thereby significantly reducing the commute length. While the Project would implement all feasible BPS included on SJVAPCD's current list, the BPS would not be equivalent to a 29 percent reduction. Nonetheless, because of the scope of and nature of the Project, it would not achieve a 29 percent GHG emissions reduction. Consequently, GHG emissions impacts of the Project's operation would be *significant*.

3. Consistency with GHG reduction plans.

The following is an evaluation of the Project's consistency with the applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions, contribution to climate change impacts. As discussed above in the Regulatory Framework, the State of California, through its governor and its legislature, has established a comprehensive framework for the substantial reduction of GHG emissions over the next 40 plus years. This will occur primarily through the implementation of AB 32, Executive Order S-3-05, and SB 375, which are designed to address GHG emissions on a statewide cumulative basis. The City of Tracy has adopted a SAP, which reflects the City's approach to reducing GHGs with the goal of helping to achieve the GHG reduction targets of AB 32. CARB has adopted a scoping plan in accordance with AB 32. In addition, consistency with the CAPCOA and California Attorney General's Office measures to reduce GHG emissions are also considered.

a. CARB Scoping Plan

In accordance with AB 32, CARB developed the Scoping Plan to outline the state's strategy to achieve 1990 level emissions by year 2020. To estimate the reductions necessary, CARB projected year statewide 2020 BAU GHG emissions (i.e. GHG emissions in the absence of statewide emission reduction measures). CARB identified that the state as a whole would be required to reduce GHG emissions by 30 percent from year 2020 BAU. The Scoping Plan defines the future BAU emissions scenario as the absence of the statewide emissions reduction strategies. The Scoping Plan identified several

early action measures to reduce GHG emissions in the State of California. These early action measures included:

- Green Building: Implementation of newer, more energy-efficient California Building Standards within Title 24 of the California Building Code. The new 2008 Building and Energy Efficiency Standards are 15 percent more energy-efficient than the 2005 standards.
- Renewable Energy Portfolio: Requiring that California use renewable energy to represent 33 percent of California's energy portfolio. Renewable energy currently comprises 12 percent of the State's energy portfolio.
- Per-Capita Water Reduction: Reducing per-capita water use by approximately 20 percent. The Final 20X2020 water conservation plan identifies strategies to reduce water use in the State. In addition, plumbing and landscaping codes amended with the new Title 24 result in a 50 percent reduction of water use for new commercial and residential plumbing fixtures.
- Low Carbon Fuel Standard: Adoption of a new Low Carbon Fuel Standard (LCFS). The LCFS requires the carbon content of fuels sold in California to be reduced by 10 percent by year 2020.
- Pavley Fuel Efficiency Standards: Adoption of higher fuel efficiency standards (Pavley Fuel Efficiency Standards). The US EPA granted the waiver to California to implement higher fuel efficiency standards on July 1, 2009. California's fuel efficiency standards require the average fleet fuel economy of cars to be 42.5 miles per gallon (mpg) by year 2020. This results in an increase in fuel efficiency of 42.8 percent from the 2009 24.4 mpg average fleet economy in California.

The proposed Project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan. The Project would comply with then-current provisions of the Green Building Code. For example, proposed buildings would be constructed in conformance with CALGreen, which requires high-efficiency water fixtures for indoor plumbing and water efficient irrigation systems. The Project is not an

energy-generation project, although the Project would use energy derived from PG&E, which is required to comply with the above-reference standard. The Project has been designed to comply with the Citywide Water System Master Plan and the City's Urban Water Management Plan, which incorporate various construction strategies. The Project's plumbing and landscaping areas would be required to comply with Title 24 provisions of the Building Code. The Project would have no ability to modify fuel standards, which would be within the purview of various federal and state governmental agencies, including US EPA and Cal-EPA. Therefore, for the above reasons, the Project can be considered to be consistent with CARB's scoping plan.

b. Consistency with Tracy's SAP

Consistent with the CEQA Guidelines, the proposed Project was evaluated for GHG emissions reduction strategies within the Tracy SAP. This analysis is shown in Table 4.7-7 below.

As identified in the table, the proposed Project would not conflict or otherwise interfere with Tracy's SAP.

c. Conclusion

As identified above, the Project would not conflict with or otherwise interfere with achievement of CARB's Scoping Plan, the City's Sustainability Action Plan, the California Attorney General's Office and the California Air Pollution Control Officer's Association (CAPCOA) applicable measures, as shown in Table 4.7-7 through Table 4.7-9, respectively.

Specific Project design features incorporated into the Cordes Ranch Specific Plan are also identified below:

Design and Construction

- High efficiency lighting and lighting control systems are encouraged.
- The Central Green is connected with a network of roads, bicycle, and pedestrian "spokes" that connect the Project and creates a gathering place for employees.

TABLE 4.7-7 **PROJECT CONSISTENCY WITH TRACY SUSTAINABILITY ACTION PLAN**

Applicable Sustainability Measures	Consistency with Project
E-1: Green Building Ordinance Develop an incentive-based Green Building Ordinance that promotes energy efficient design for new buildings.	While this measure is applicable to the City of Tracy, individual components of this measure are compared to the proposed Project, as follows
E-1.b: Green Building Ordinance Encourage energy efficiency measures for new warehouses and warehousing.	The Specific Plan encourages individual developers in the Specific Plan Area to pursue Leadership in Energy Efficient Design (LEED) certification. Building construction would be designed to meet then-current standards for energy efficiency, such as: ¨ Energy efficient heating and cooling systems. ¨ Energy efficient appliances, equipment, and HVAC control systems. ¨ Water conservation measures, including water-efficient landscaping
E-1.c: Green Building Ordinance Encourage the use of cement substitutes and recycled building materials for new construction.	Locally sourced, salvaged, and recycled materials would be considered for use throughout the landscape and hardscape design.
E-1.d: Green Building Ordinance Encourage the use of energy-efficient appliances that meet Energy Star standards when higher than Title 24 and the use of energy efficient lighting technologies that meet or exceed Title 24 standards.	Energy efficient lighting and control systems would be utilized as part of lighting systems in buildings.
E-1.e: Green Building Ordinance Encourage all new buildings to be constructed to allow for the easy, cost-effective installation of future solar energy systems. "Solar ready" features should include: proper solar orientation; clear access on the south sloped roof; electrical conduit installed for solar electric system wiring; plumbing installed for solar hot water system; and space provided for a solar hot water storage tank.	Buildings constructed in accordance with the 2013 Building and Energy Efficiency Standards, which become effective January 1, 2014 would be required to be constructed so that they are "solar-ready."
E-1.f: Green Building Ordinance Encourage any roof to have a Solar Reflectance Index (SRI) of at least 29.	Light colored "cool" roofs would be required for all new buildings in accordance with California's Building and Energy Efficiency Standards.
E-1.i: Green Building Ordinance Encourage that new or major rehabilitations of commercial, office, or industrial development greater than or equal to 25,000 square feet in size incorporate solar or other renewable energy generation to provide 15 percent or more of the project's energy needs.	As part of the development review process, Project applicants would be encouraged to incorporate solar or other renewable energy generation features, to the extent feasible. In addition, the Project would be required to comply with the 2013 Building and Energy Efficiency Standards (which become effective on January 1, 2014) as it relates to "solar readiness."
E-1.n: Green Building Ordinance Encourage the use of locally-sourced, sustainable, salvaged and recycled-content materials and other materials that have low production energy costs for building materials, hard surfaces, and non-plant landscaping.	Project applicants for individual, site-specific developments would be encouraged to reuse and recycle construction and demolition waste, including soil, vegetation (green waste), concrete, lumber, metal, and cardboard, to the extent feasible. In addition, locally sourced, salvaged, and recycled materials would be considered for use throughout the landscape and hardscape.

TABLE 4.7-7 **PROJECT CONSISTENCY WITH TRACY SUSTAINABILITY ACTION PLAN**

Applicable Sustainability Measures	Consistency with Project
E-2.a: Energy Efficiency in Site Planning and Design Establish measures that reduce energy use through solar orientation by taking advantage of landscaping and sun screens.	Tree species would be chosen based on their large canopy characteristics at maturity, and would be strategically placed to shade paving areas and building elevations to minimize heat gain. Streets within the Project would be oriented on an east-west axis to allow buildings to be sited to take advantage of shade and work with the existing topography. Canopies, awnings, and architectural shade structures would be encouraged as part of the design guidelines. These design elements would be strategically sized to shade paving areas and building elevations and minimize heat gain.
E-2.c: Energy Efficiency in Site Planning and Design Establish guidelines for cool pavements and strategically placed shade trees.	Integrated with the proposed bicycle plan, the street network would have tree-shaded, separated sidewalks on both sides of the streets to provide for safe pedestrian circulation within the Project. Tree species would be chosen based on their large canopy characteristics at maturity, and would be strategically placed to shade paving areas and building elevations to minimize heat gain.
E-2.d: Energy Efficiency in Site Planning and Design Require all new development and major rehabilitation (i.e. additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) projects to incorporate any combination of the following strategies to reduce heat gain for 50 percent of the non-roof impervious site landscape, which includes sidewalks, courtyards, parking lots, and driveways: shaded within five years of occupancy; use of paving materials with a Solar Reflectance Index (SRI) of at least 29; open grid pavement system; or locating parking spaces under deck, under roof, or under a building.	Design guidelines encourage canopies, awnings, and architectural shade structures and these design elements would be strategically sized to shade paving areas and building elevations and minimize heat gain. Furthermore, individual site-specific developments would be required to be in conformance with CALGreen, which requires energy efficiency be considered in site design. Architectural plans and site plans submitted to the City would be required to implement the mandatory measures of CALGreen. In accordance with applicable City standards, 20 percent of the Project's parking areas would be required to be landscaped and 40 percent of the Project's parking areas would be required to be shaded at tree maturity. Tree species would be chosen based on their large canopy characteristics at maturity, and would be strategically placed to shade paving areas and building elevations to minimize heat gain.
E-2.e: Energy Efficiency in Site Planning and Design Require outdoor lighting fixtures to be energy-efficient. Require parking lot light fixtures and light fixtures on buildings to be on full cut-off fixtures, except emergency exit or safety lighting, and all permanently installed exterior lighting shall be controlled by adjustable timers. Prohibit continuous all night outdoor lighting in sports stadiums, construction sites, and rural areas unless they are required for security reasons.	Energy efficient lighting and control systems would be utilized as part of lighting systems in buildings.

TABLE 4.7-7 **PROJECT CONSISTENCY WITH TRACY SUSTAINABILITY ACTION PLAN**

Applicable Sustainability Measures	Consistency with Project
E-4.d Energy-Efficient Products and Retrofits Encourage the installation of programmable thermostat timers.	Building construction would be designed to meet standards for energy efficiency, such as energy efficient heating and cooling systems and energy efficient appliances, equipment, and HVAC control systems. In accordance with California's Building and Energy Efficiency Standards, programmable thermostats would be required.
T-3: Support for Bicycling Promote bicycle usage through the following: a. Continue to require bicycle parking for non-residential and multi-family uses. b. Amend the Zoning Ordinance to require shower facilities and dressing areas for significant new or redevelopment of non-residential uses. c. Create a bicycle-sharing program. d. Provide bicycle parking near transit.	The Project's street pattern and street cross sections would provide for a high level of connectivity throughout the Project, which facilitates the use of biking and pedestrian activity as an alternative to car travel. In addition, adequate bicycle parking would be required near building entrances to promote cyclist safety, security, and convenience. For larger employments, the Specific Plan requires providing facilities that encourage biking, including, for example, locked bicycle storage or covered or indoor bicycle parking.
T-4: Support for Transit Continue to implement the City's program to provide covered and partially enclosed shelters that are adequate to buffer wind and rain and with at least one bench at each existing public transit stop and to provide local public transit information in transit shelters.	The Specific Plan calls for businesses to work with the City to modify and expand bus routes as needed to accommodate demand, and acknowledges that final bus stop locations may require additional right-of-way dedication. The Project anticipates the use of bus stop enclosures at strategic locations to be determined as development occurs.
T-5.a: Smart Growth, Urban Design and Planning Create development standards for commercial, office, and retail zones to promote a principal functional entry that faces a public street.	The Specific Plan proposes to create an office area that is pedestrian oriented, capitalizes on the visibility from Mountain House Parkway and provides pedestrian corridors to the Central Green. This office area would include: wide sidewalks; buildings framing the street with entries from the street
T-13.a: Reduce Commute Trips Support San Joaquin Valley Unified Air Pollution Control District requirements that large employers establish employee trip reduction programs such as Rule 9410.	The Project, at buildout, would provide employment opportunities for 36,708 people in Tracy. By developing a significant employment generator such as the Project, this helps re-out-commuting for Tracy residents. The Project would be required to comply with SJVAPCD Rule 9410, as applicable, to address employee trip reduction programs.
T-13.b: Reduce Commute Trips Promote the San Joaquin Council of Governments Commute Connection program, which provides information about commute options and connects commuters for carpooling, ridesharing and other activities.	Specific Plan Area property owners would coordinate with tenants to promote the San Joaquin County 511 program to organize and promote ridesharing and carpooling between various Cordes Ranch tenants.
T-17.d: Increased Use of Low Carbon Fueled Vehicles Encourage employers to create vanpool or shuttle programs for employees.	See Above: T-13.b: Reduce Commute Trips

TABLE 4.7-7 **PROJECT CONSISTENCY WITH TRACY SUSTAINABILITY ACTION PLAN**

Applicable Sustainability Measures	Consistency with Project
SW-2: Increased Recycling and Waste Diversion Increase recycling and waste diversion in Tracy by expanding marketing efforts to increase participation by residents and businesses.	Interior and exterior storage bins for recyclables and green waste and adequate recycling containers would be located in public areas. Individual, site-specific developments would be encouraged to reuse and recycle construction and demolition waste, including soil, vegetation (green waste), concrete, lumber, metal, and cardboard, to the extent feasible. In addition, locally sourced, salvaged, and recycled materials would be considered for use throughout the landscape and hardscape.
W-1.a: Potable Water Conservation through Development Standards In compliance with SBX7-7, develop water use and efficiency standards in the City's Green Building Ordinance to reduce overall potable water consumption utilizing Method 1 established in the Department of Water Resources'	Buildings would be designed to be water-efficient and would include water-efficient fixtures and appliances. *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* for targets of 202 gallons per capita daily (gpcd) by 2015 and 180 gpcd by 2020 include clear parameters for integrating water efficient infrastructure and technologies, including low-flush toilets, low-flush urinals and low-flow showerheads that are more stringent than the Energy Policy Act of 1992 fixture performance requirements.
W-1.a: Potable Water Conservation through Development Standards Plan for recycled water infrastructure in the Infrastructure Master Plans.	A purple pipe system would be constructed as part of the infrastructure for the Project. Reclaimed water would be utilized for landscape irrigation of public and private landscaped areas, when available.
W-1.e: Potable Water Conservation through Development Standards Require through Ordinance or City standard that all new development and redevelopment install irrigation controllers in landscaping that shall be weather- or soil moisture-based controllers which automatically adjust irrigation in response to changes in plants' needs as weather conditions change in compliance with the City's water efficient landscape ordinance.	The Project would be required to comply with then-current City standards relating to water conservation.
W-2: Water Efficient Landscape Ordinance Develop a water efficient landscape ordinance to be at least as effective as the State Department of Water Resources' (DWR) Model Water Efficient Landscape Ordinance (MWELO), which requires a 12 percent reduction of outdoor potable water use through irrigation efficiency, plant species, recycled wastewater and captured rainwater; and consistent with SBX7-7, utilizing Method 1 targets.	Landscaping would consist of native species that would be selected for water-efficient characteristics and would include drought tolerant planting materials common to the region. The Project landscape design would meet then-current applicable water efficiency landscaping standards and other requirements.
AG-6: Natural Landscape and Minimal Turf in City Parks Amend the Parks Master Plan to minimize turf in City parks and use a natural park landscape whenever possible.	Turf would be minimized and natural landscape would be used in the parks and open spaces whenever possible.

TABLE 4.7-8 **PROJECT CONSISTENCY WITH APPLICABLE PROJECT-LEVEL GHG REDUCTION STRATEGIES IDENTIFIED BY THE CALIFORNIA ATTORNEY GENERAL'S OFFICE**

Applicable Measures	Consistency with Project
Incorporating green building practices and design elements.	Individual developments constructed within the Cordes Ranch Specific Plan would be required to be constructed to meet the California Green Building Standards Code (CALGreen) and the Building and Energy Efficiency Standards in place at the time the Project is approved.
Meeting recognized green building and energy efficiency benchmarks.	Projects would be constructed to achieve the Building and Energy Efficiency Standards in place at the time the Project is approved. The 2008 Standards are 15 percent more energy efficient than the 2005 standards. The new 2013 Standards (effective January 1, 2014) are 30 percent more energy efficient for non-residential buildings that the 2008 Standards. Furthermore, the Specific Plan encourages individual developers in the Specific Plan Area to pursue Leadership in Energy Efficient Design (LEED) certification.
Installing energy-efficient lighting (e.g., light emitting diodes [LEDs], heating and cooling systems, appliances, equipment, and control systems).	Pursuant to CALGreen and the Building and Energy Efficiency Standards, new building would be required to install energy-efficient lighting and heating, ventilation and air conditioning (HVAC) systems. New appliances are required to achieve the energy efficiency standards of Title 25.
Using passive solar design (e.g., orient buildings and incorporate landscaping to maximum passive solar heating during cool seasons, minimize solar heat gain during hot season, and enhance natural ventilation. Design building to take advantage of sunlight.).	CALGreen requires that site design consider the orientation of buildings to take advantage of sunlight and to reduce heating and cooling costs. Adherence to the mandatory measures of CALGreen would ensure compliance with this measure.
Install light colored "cool" roofs and cool pavements.	The Building and Energy Efficiency Standards require the new buildings be designed with a cool roof to increase solar reflectivity and reduce building heating and cooling requirements.
Install efficient lighting (including LEDs) for traffic, street, and other outdoor lighting.	The City of Tracy requires installation of LED lights for new traffic signals and street lights. Other outdoor lighting installed as part of the security/safety lighting within individual developments in the Specific Plan would be required to be energy efficient.
Reduce unnecessary outdoor lighting.	Other outdoor lighting installed as part of the security/safety lighting within individual developments in the Specific Plan would be reviewed by the City and would be required to be energy efficient and to reduce unnecessary outdoor lighting.
Provide education on energy efficiency to residents, customers, and/or tenants.	The Specific Plan requires the Master Owner's Association to implement an educational program regarding the City's water conservation programs, San Joaquin Regional Transit District's transit availability, and PG&E's energy programs.

TABLE 4.7-8 **PROJECT CONSISTENCY WITH APPLICABLE PROJECT-LEVEL GHG REDUCTION STRATEGIES IDENTIFIED BY THE CALIFORNIA ATTORNEY GENERAL'S OFFICE**

Applicable Measures	Consistency with Project
Meet "reach" goals for building energy efficiency and renewable energy use.	The CEC and the California Public Utilities Commission (CPUC) have stated that residential buildings should be zero net energy by 2020, and commercial buildings by 2030. Individual developments constructed within the Cordes Ranch Specific Plan would be required to be constructed to meet the Building and Energy Efficiency Standards in place at the time the Project is approved.
Install solar, wind, and geothermal power systems and solar hot water heaters.	As part of the development review process, Project applicants would be encouraged to incorporate solar or other renewable energy generation features, to the extent feasible. In addition, the Project would be required to comply with the 2013 Building and Energy Efficiency Standards (which become effective on January 1, 2014) as it relates to "solar readiness."
Install solar panels on unused roof and ground space and over carports and parking areas.	As part of the development review process, Project applicants would be encouraged to incorporate solar or other renewable energy generation features, to the extent feasible. In addition, the Project would be required to comply with the 2013 Building and Energy Efficiency Standards (which become effective on January 1, 2014) as it relates to "solar readiness."
Where solar systems cannot feasibly be incorporated into the project at the outset, build "solar ready" structures.	"Solar Ready" structure are required under new 2013 Building Efficiency Standards.
Include energy storage where appropriate to optimize renewable energy generation systems and avoid peak energy use.	As part of the development review process, Project applicants would be encouraged to incorporate solar or other renewable energy generation features, to the extent feasible. In addition, the Project would be required to comply with the 2013 Building and Energy Efficiency Standards (which become effective on January 1, 2014) as it relates to "solar readiness."
Use combined heat and power (CHP) in appropriate applications.	As part of the development review process, Project applicants would be encouraged to incorporate solar or other renewable energy generation features, to the extent feasible. In addition, the Project would be required to comply with the 2013 Building and Energy Efficiency Standards (which become effective on January 1, 2014) as it relates to "solar readiness."
Incorporate water-reducing features into building and landscape design.	In compliance with SBX7-7, the City has adopted a Water Efficient Landscape Ordinance, which requires outdoor landscaping to be water efficient. Indoor fixtures would also meet the low-flow requirements of CALGreen.
Create water-efficient landscapes.	As stated above, outdoor landscaping would meet the City's standards for water conservation.
Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls and use water-efficient irrigation methods.	As stated above, outdoor landscaping would meet the City's standards for water conservation.

TABLE 4.7-8 **PROJECT CONSISTENCY WITH APPLICABLE PROJECT-LEVEL GHG REDUCTION STRATEGIES IDENTIFIED BY THE CALIFORNIA ATTORNEY GENERAL'S OFFICE**

Applicable Measures	Consistency with Project
Make effective use of graywater. (Graywater is untreated household waste water from bathtubs, showers, bathroom wash basins, and water from clothes washing machines. Graywater to be used for landscape irrigation.)	A purple pipe system (recycled water) would be constructed as part of the infrastructure for the Project. Reclaimed water would be utilized for landscape irrigation of public and private landscaped areas, when available.
Implement low-impact development practices that maintain the existing hydrology of the site to manage storm water and protect the environment.	Adherence to the mandatory measures of CALGreen and the City's standard for stormwater control would ensure compliance with this measure.
Devise a comprehensive water conservation strategy appropriate for the project and location.	Individual developments within the Cordes Ranch Specific Plan would be required to ensure that the landscape plans meet the City's standards for water conservation.
Design buildings to be water-efficient. Install water-efficient fixtures and appliances.	Buildings would be required to install low-flow fixture in accordance with the mandatory requirements of CALGreen.
Offset water demand from new projects so that there is no net increase in water use.	While this is not feasible due to the size of the Project, the Project would minimize indoor and outdoor water use to the extent feasible. It should be noted that, in accordance with the Department of Water Conservation's 20X2020 Plan, urban water use is projected to decrease by 20 percent per capita by 2020. The City of Tracy' 2010 Urban Water Management Plan outlines strategies to reduce per capita water use citywide.
Provide education about water conservation and available programs and incentives.	The Specific Plan requires the Master Owner's Association to implement an educational program regarding the City's water conservation programs, San Joaquin Regional Transit District's transit availability, and PG&E's energy programs.
Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).	The mandatory provisions of CALGreen (effective Jan. 1, 2011) require projects to divert a minimum of 50 percent of construction waste.
Integrate reuse and recycling into residential industrial, institutional, and commercial projects.	Senate Bill 1018 (SB 1018, 2012) and Assembly Bill 341 (AB 341, 2011) require that businesses that generate 4 cubic yards or more of commercial solid waste per week include recycling; the Project would be required to adhere to this mandate.
Provide easy and convenient recycling opportunities for residents, the public, and tenant businesses.	Businesses within the Cordes Ranch Specific Plan would be required to adhere to the mandatory recycling requirements of SB 1018 and AB 341.
Provide education and publicity about reducing waste and available recycling services.	In accordance with AB 341, the City of Tracy provides educational information to residents and business in the City for recycling.
Incorporate public transit into the project's design.	Applicants for individual, site-specific development projects located along existing and planned transit routes shall coordinate with the San Joaquin Regional Transit District to ensure that bus pads and shelters are incorporated, as necessary.

TABLE 4.7-8 **PROJECT CONSISTENCY WITH APPLICABLE PROJECT-LEVEL GHG REDUCTION STRATEGIES IDENTIFIED BY THE CALIFORNIA ATTORNEY GENERAL'S OFFICE**

Applicable Measures	Consistency with Project
Preserve and create open space and parks. Preserve existing trees, and plant replacement trees at a set ratio.	The riparian corridor would be protected and enhanced. The riparian corridor would include landscaping in accordance with any conditions required by the appropriate resource agencies. The Project would meet federal, state, and regional regulations for habitat and species protection.
Include pedestrian and bicycle facilities within projects and ensure that existing non-motorized routes are maintained and enhanced.	The Project has been designed to comply with the Citywide Transportation Master Plan. Class I and II pathways have been incorporated into the streets to allow for increased linkages between uses and to provide additional safety for bicyclists by separating them from truck traffic. Bikeways may also be incorporated within the PG&E easements, along the open space/linear corridor and along the West Side Irrigation District Easements to allow additional points of access.
Meet an identified transportation-related benchmark.	The City of Tracy does not have an established VMT benchmark. If established, such a benchmark would be applicable to passenger vehicle trips from the Project.
Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation.	The Specific Plan requires implementation of an employee commute trip reduction (CTR) program to reduce single-passenger vehicle use and encourage use of transit in accordance with Rule 9410, as applicable.
Build or fund a major transit stop within or near the development.	The Specific Plan requires projects located along existing and planned transit routes to coordinate with the San Joaquin Regional Transit District to ensure that bus pads and shelters are incorporated, as necessary.
Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers.	The Specific Plan requires implementation of an employee commute trip reduction (CTR) program to reduce single-passenger vehicle use and encourage use of transit in accordance with Rule 9410, as applicable.
Promote "least polluting" ways to connect people and goods to their destinations.	The Specific Plan requires implementation of an employee commute trip reduction (CTR) program to reduce single-passenger vehicle use and encourage use of transit in accordance with Rule 9410, as applicable. In addition, the Specific Plan requires the Master Owner's Association to implement an educational program regarding the San Joaquin Regional Transit District's transit availability.
Incorporate bicycle lanes, routes, and facilities into street systems, new subdivisions, and large developments.	Class I and/or II bicycle paths are included on all streets wider than 75 feet, and within a quarter mile of all uses within the Project so that destinations can be reached conveniently by alternatives to vehicle trips.
Require amenities for non-motorized transportation, such as secure and convenient bicycle parking.	Adequate bicycle parking will be required near building entrances and large employers will provide facilities that encourage bicycle commuting, including, e.g., locked bicycle storage, or covered or indoor bicycle parking.

TABLE 4.7-8 **PROJECT CONSISTENCY WITH APPLICABLE PROJECT-LEVEL GHG REDUCTION STRATEGIES IDENTIFIED BY THE CALIFORNIA ATTORNEY GENERAL'S OFFICE**

Applicable Measures	Consistency with Project
Ensure that the project enhances, and does not disrupt or create barriers to, non-motorized transportation.	The road network and bicycle and pedestrian paths have all been designed create connectivity with the Central Green, the street frontages along Mountain House Parkway, Capital Parks Drive, and New Schulte Road include additional landscaping to create corridors or "spokes" to provide for Class I bike paths and pedestrian sidewalks. The Central Green is connected with a network of roads, bicycle, and pedestrian "spokes" that connect the Project
Institute teleconferencing, telecommute and/or flexible work hour programs to reduce unnecessary employee transportation.	The Specific Plan requires implementation of an employee commute trip reduction (CTR) program to reduce single-passenger vehicle use and encourage use of transit in accordance with Rule 9410, as applicable.
Provide information on alternative transportation options for consumers, residents, tenants, and employees to reduce transportation-related emissions.	The Specific Plan requires implementation of an employee commute trip reduction (CTR) program to reduce single-passenger vehicle use and encourage use of transit in accordance with Rule 9410, as applicable. In addition, the Specific Plan requires the Master Owner's Association to implement an educational program regarding the San Joaquin Regional Transit District's transit availability.
Educate consumers, residents, tenants and the public about options for reducing motor vehicle-related greenhouse gas emissions. Include information on trip reduction; trip linking; vehicle performance and efficiency (e.g., keeping tires inflated); and low or zero-emission vehicles.	The Specific Plan requires implementation of an employee commute trip reduction (CTR) program to reduce single-passenger vehicle use and encourage use of transit in accordance with Rule 9410, as applicable. In addition, the Specific Plan requires the Master Owner's Association to implement an educational program regarding the San Joaquin Regional Transit District's transit availability.
Purchase, or create incentives for purchasing, low, or zero-emission vehicles.	The Specific Plan requires preferential parking space locations to be provided for electric vehicles and compressed natural gas vehicles and it encourage employees to use low- or zero-emissions vehicles.
Create a ride sharing program. Promote existing ride sharing programs e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles, and providing a web site or message board for coordinating rides.	The Specific Plan requires implementation of an employee commute trip reduction (CTR) program to reduce single-passenger vehicle use and encourage use of transit in accordance with Rule 9410, as applicable. In addition, the Specific Plan requires the Master Owner's Association to implement an educational program regarding the San Joaquin Regional Transit District's transit availability.
Create or accommodate car sharing programs, e.g., provide parking spaces for car share vehicles at convenient locations accessible by public transportation.	The Specific Plan requires implementation of an employee commute trip reduction (CTR) program to reduce single-passenger vehicle use and encourage use of transit in accordance with Rule 9410, as applicable. In addition, the Specific Plan requires the Master Owner's Association to implement an educational program regarding the San Joaquin Regional Transit District's transit availability.

TABLE 4.7-8 **PROJECT CONSISTENCY WITH APPLICABLE PROJECT-LEVEL GHG REDUCTION STRATEGIES IDENTIFIED BY THE CALIFORNIA ATTORNEY GENERAL'S OFFICE**

Applicable Measures	Consistency with Project
Provide a vanpool for employees.	The Specific Plan requires implementation of an employee commute trip reduction (CTR) program to reduce single-passenger vehicle use and encourage use of transit in accordance with Rule 9410, as applicable. In addition, the Specific Plan requires the Master Owner's Association to implement an educational program regarding the San Joaquin Regional Transit District's transit availability.
Create local "light vehicle" networks, such as neighborhood electric vehicle systems.	Neighborhood electric vehicles (NEVs) are allowed on streets with speed limits 35 mile per hour or less. Major arterials within and proximate to the Specific Plan Area would be designed to accommodate higher travel speeds; and therefore, use of NEVs on these streets would be prohibited.
Enforce and follow limits idling time for commercial vehicles, including delivery and construction vehicles.	Applicants for individual, site specific developments shall be required to adhere to applicable CARB rules regarding signage to enforce idling time limits. For example, commercial vehicles, delivery trucks, and construction vehicles would be required to adhere to CARB's airborne toxics control measures that restrict non-essential idling to no more than five minutes. Applicants for individual, site-specific projects with truck delivery and loading areas, and truck parking spaces, shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with California Air Resources Board Rule 2845.
Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles.	The Specific Plan requires preferential parking space locations to be provided for electric vehicles and compressed natural gas vehicles and it encourage employees to use low- or zero-emissions vehicles.
Preserve forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, groundwater recharge areas and other open space that provide carbon sequestration benefits.	Sophisticated designs with simple plant palettes, such as rows and masses of native and climate adapted grasses and orchard style tree plantings are encouraged. The use of native, climate adapted and large stature species is encouraged to promote/create habitat, minimize use of water, fertilizers, and pesticides, promote biodiversity, and sequester carbon.
Protect existing trees and encourage the planting of new trees. Adopt a tree protection and replacement ordinance.	Trees shall be provided at a ratio of an average of at least one tree for every 1,000 square feet of landscape/hardscape area, not including required parking lot trees.

Source: California Attorney General's Office, 2010. Addressing Climate Change at the Project Level, http://www.ag.ca.gov/globalwarming/pdf/GW_mitigation_meaures.pdf.
Notes: Land use measures for residential, mixed-use, school, agricultural, and recreational/open space developments are not included in this table because they are not applicable to the proposed non-residential Project.

Table 4.7-9 **CAPCOA APPLICABLE GHG EMISSIONS REDUCTION MEASURES**

Applicable CAPCOA GHG Reduction Measures	Cordes Ranch Specific Plan
Alternative Modes of Transportation - Bicycles Bike Parking End of Trip Facilities Proximity to Bike Paths/Bike Lanes	The Project would include construction of Class I and II pathways to allow for increased linkages between uses and to provide additional safety for bicyclists by separating them from truck traffic.
Alternative Modes of Transportation - Walking Pedestrian Network Pedestrian Barriers Minimized Pedestrian Pathway through Parking	The Project would include construction of sidewalks on both sides of all streets within the Project include to promote pedestrian access and connectivity between uses.
Alternative Modes of Transportation - Transit Bus Shelter for Existing/Planned Transit Service	The Project would be designed to phase public transportation. The City will explore the needs based on construction phasing and will evaluate appropriate routes to serve multiple businesses.
Traffic TMA Membership Services Operational EV Charging Facilities Neighborhood Electric Vehicle Access	The Specific Plan requires implementation of an employee commute trip reduction (CTR) program to reduce single-passenger vehicle use and encourage use of transit. The Specific Plan requires preferential parking space locations to be provided for electric vehicles and compressed natural gas vehicles and it encourages employees to use low- or zero-emissions vehicles.
Parking Paid Parking (Parking Cash Out) Minimum Parking Parking Reduction Beyond Code/Shared Parking Parking Area Tree Cover Preferential Parking for EVs/CNG Vehicles	Parking lot trees should be provided at a minimum of one tree per 5 spaces. Large scale, high branching shade trees should be used in all parking areas.
Water Use Landscaping Low Water Use Appliances	Future development within the Cordes Ranch Specific Plan would be required to adhere to the low-flow, water efficiency requirements of the California Green Building Code (CALGreen). In addition, the City of Tracy has adopted a landscaping ordinance that requires use of efficient irrigation sprinklers and California-friendly plant palette.

Table 4.7-9 **CAPCOA APPLICABLE GHG EMISSIONS REDUCTION MEASURES**

Applicable CAPCOA GHG Reduction Measures	Cordes Ranch Specific Plan
Energy Consumption High-Efficiency Pumps Low-Energy Cooling Programmable Thermostats Energy Star Roof Cool Roof Solar Orientation Non-Roof Surfaces Green Roof Shading Mechanisms Day Lighting Systems Passive Heating and Cooling Systems Light-Colored Paving Exceed Title 24 Onsite Renewable Energy System LEED Certification	Individual, site specific developments within the Cordes Ranch Specific Plan would be built to achieve the Building and Energy Efficiency Standards in effect at the time of development. The Cordes Ranch Specific Plan also includes requirements for use of High efficiency lighting, such as LED, for traffic, street, and other outdoor lighting. Energy efficiency is required to be achieved through building design, Energy efficient heating, and cooling systems. Energy efficient appliances, equipment, and HVAC control systems. Light colored "cool" roofs will be required for all new buildings.
Education GHG Emission Reduction Education Enhanced Recycling/Waste Reduction, Reuse, Composting	Businesses constructed and operated under the Cordes Ranch Specific Plan would be encouraged to locate interior and exterior storage bins for recyclables and green waste and adequate recycling containers in public areas.
Construction CARB Certified Diesel Equipment Alternative Fuel Equipment Salvage/Recycling of C&D Debris Local or Green Building Materials	Individual developers of projects will be encouraged to reuse and recycle construction and demolition waste, including soil, vegetation (green waste), concrete, lumber, metal, and cardboard, to the extent feasible. CALGreen also requires recycling and/or salvaging of construction and demolition material.

- Locally sourced, salvaged, and recycled content materials in the landscape, including recycled content concrete are encouraged.
- The use of renewable energy in the landscape such as photovoltaic and wind turbines is encouraged.
- The use of native, climate adapted and large stature species is encouraged to promote/create habitat, minimize use of water, fertilizers, and pesticides, promote biodiversity, and sequester carbon.
- Turf should be minimized in the landscape, except where needed for recreational purposes. The use of turf for solely decorative purposes is strongly discouraged.
- Stormwater Best Management Practices, such as rain gardens, bioswales and rainwater harvesting, should be incorporated into the landscape to maximize on-site infiltration of stormwater, to the extent possible.
- High-efficiency, weather based irrigation systems should be used.
- Recycled water/greywater should be used for landscape irrigation wherever feasible.
- Appropriate placement of landscape materials should provide summer shade on buildings, parking spaces, drives, and paths.
- Streets within Cordes Ranch are on an east/west axis to allow buildings to be sited to take advantage of shade and work with the existing topography.
- The site has been designed to reduce mass grading to the extent feasible and to decrease the use of earth moving equipment needed to grade the site.
- Large warehouse and logistic buildings will utilize sloped floors that will better conform to the existing topography. The reduction in grading and earth movement will decrease the total emissions from construction equipment.

- A pre-construction meeting and information pamphlet will be prepared and distributed outlining the idling procedures for all construction vehicles.
- Individual developers of projects will be encouraged to reuse and recycle construction and demolition waste, including soil, vegetation (green waste), concrete, lumber, metal, and cardboard, to the extent feasible.
- Low-impact development practices will be implemented to the extent feasible, to maintain the existing hydrologic character of the drainage and manage and treat storm water to protect the environment.
- Energy efficient lighting and control systems will be utilized as an integral part of lighting systems in all buildings.
- Architectural guidelines in Chapter 4 encourage the use of daylight or clerestory windows as a means of providing natural light and reducing the need for lighting during day light hours.
- Light colored "cool" roofs will be required for all new buildings.
- Tree species will be chosen based on their large canopy characteristics at maturity, and will be strategically placed on the west and east portions of the site to shade paving areas and building elevations to minimize heat gain.
- Canopies, awnings, and architectural shade structures are encouraged as part of the design guidelines. These design elements will be strategically sized to shade paving areas and building elevations and minimize heat gain.
- Locally sourced, salvaged, and recycled materials will be considered for use throughout the landscape and hardscape design.
- High efficiency lighting, such as LED, will be utilized for traffic, street, and other outdoor lighting.
- All exterior lighting will be required to be controlled by timers, and only lighting required for security will be provided at night.

- Building construction in the Project shall meet applicable standards for energy efficiency such as:
  - Energy efficient heating and cooling systems;
  - Energy efficient appliances, equipment, and
  - HVAC control systems;
- The landscape palette includes a large number of native and climate adapted species in an effort to optimize biodiversity, to sequester carbon, and create habitat and minimize resource use (water, fertilizers, and pesticides/herbicides).
- The Specific Plan strongly encourages that individual developers consider the merits of LEED certification not only as a means to conserve energy but also to promote stewardship of the environment and green business practices.

Transportation and Land Use

- Class I and/or II bicycle paths are included on all streets wider than 75 feet, and within a quarter mile of all uses within the Project so that destinations can be reached conveniently by alternatives to vehicle trips.
- All streets within the Project include sidewalks on both sides to promote pedestrian access and connectivity between uses.
- Street designs are based on a grid system instead of cul-de-sacs to promote shorter travel distances and encourage pedestrian and bicycle connectivity.
- Street design will incorporate pedestrian and bicycle-friendly intersections and crossings. This includes sidewalks on both sides of all streets, Class 1 bike paths, median crossing Islands, accessible pedestrian signals, and street trees and planting islands.
- It is anticipated that the City of Tracy will take a phased approach to providing public transportation to the Project. The City will explore the needs based on construction phasing and will evaluate appropriate routes to serve multiple businesses. The businesses in Cordes Ranch will work

cooperatively with the City to modify and expand routes as necessary to efficiently accommodate demand.

- Electrical service connections will be required at all loading docks for plug in of refrigerated trailers to reduce idling time and emissions.
- Delivery and loading areas and truck parking spaces will include signage as a reminder to limit idling of vehicles while parked to load and/or unload.
- Adequate bicycle parking will be required near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including locked bicycle storage or covered or indoor bicycle parking.
- Sidewalks have been included on both sides of all streets. Trails and sidewalks may also be included within the open spaces and PG&E easements. These proposed improvements will make the Project walkable and will provide connections to adjacent development.
- The Master Owners Association will coordinate with economic development staff and the WorkNet program to facilitate job placement for City of Tracy residents
- The Master Owners Association in coordination with the City economic development staff will develop information to provide prospective business with a skills and education inventory of Tracy residents. Information will be used to market potential tenants within Cordes Ranch as a means of improving the city's jobs/housing match.

Solid Waste

- Individual developers of projects will be encouraged to locate interior and exterior storage bins for recyclables and green waste and adequate recycling containers in public areas.

Water

- Landscaping will consist of native species selected for water-efficient characteristics and will include drought tolerant planting materials common to the region.
- Turf will be discouraged and minimized throughout the Project.
- Irrigation systems and devices will be water efficient and will include satellite soil moisture based irrigation controls and systems.
- A purple pipe system will be constructed as part of the infrastructure for the Project. Reclaimed water will be utilized for landscape irrigation of public and private landscaped areas when available.
- Watering of non-vegetated surfaces and practices for cleaning outdoor surfaces and vehicles will be restricted and included in the CC & R's.
- Buildings will be designed to be water-efficient and will include water-efficient fixtures and appliances.

F. Impacts and Mitigation Measures

Impact GHG-1: Despite the incorporation of numerous sustainability measures, GHG emissions generated by the proposed Project (both construction and operational-related) would exceed the applicable threshold set forth in SJVAPCD's guidance because the Project's GHG emissions cannot feasibly be reduced to 29 percent below BAU. This would be a *significant* impact.

Mitigation Measure GHG-1a: Applicants for individual, site-specific developments shall conform to the then-applicable requirements of the California Building Code, including the Green Code's provisions relating to "solar readiness." Applicants will be encouraged to utilize or otherwise facilitate the use of alternative energy generation technologies, as feasible, to offset their energy consumption, by, for example, ensuring that roof structures are built such that they can accommodate the weight of solar panels in accordance with the California Building and Energy Standards;

providing for energy storage within their buildings; and installing electrical switch gears to facilitate solar usage.

Mitigation Measure GHG-1b: Prior to issuance of a building permit for an individual, site-specific development that requires or is intended to accommodate refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plug-in of the anticipated number of refrigerated trailers to reduce idling time and emissions.

Mitigation Measure GHG-1c: Applicants for individual, site-specific developments with truck delivery and loading areas, and truck parking spaces, shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with California Air Resources Board Rule 2845 (13 CCR Chapter 10 §2485).

Mitigation Measure GHG-1d: Applicants for individual, site-specific developments shall identify in the grading plans that non-essential idling of construction equipment and vehicles shall be restricted to no more than 5 minutes in accordance with California Air Resources Board Rule 2485 (13 CCR Chapter 10 §2485).

Significance After Mitigation: Despite the implementation of the above mitigation measures, the impact would remain *significant and unavoidable.*