5.6 GREENHOUSE GAS EMISSIONS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the City of Industry General Plan Update (proposed project) to cumulatively contribute to greenhouse gas (GHG) emissions. Because individually 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.

The 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 Southern California Association of Governments (SCAG) to reduce vehicle miles traveled (VMT) in the region, in accordance with Senate Bill 375 (SB 375). This chapter also considers policies and mitigation suggested by the California Attorney General and the California Air Pollution Control Officer's Association (CAPCOA) to reduce GHG emissions. GHG modeling is included in Appendix C.

5.6.1 Environmental Setting

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 GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,[1] carbon (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, perfluorocarbons, and chlorofluorocarbons (IPCC 2001). The major GHGs are briefly described below. Table 5.6-1 lists the GHG applicable to the proposed project and their relative global warming potentials (GWP) compared to CO_2. The major GHGs are briefly described below the table.

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.

[1] 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 5.6-1
Greenhouse Gases and Their Relative Global Warming Potential Compared to CO_2

GHG	Atmospheric Lifetime (years)	Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	50 to 200	1
Methane (CH_4)[2]	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

Source: USEPA 2008, IPCC 2001.
[1] Based on 100-Year Time Horizon of the Global Warming Potential (GWP) of the air pollutant relative to CO_2.
[2] 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.

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 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, 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 than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.

- *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 (USEPA 2008a).

California's GHG Sources and Relative Contribution

California is the second largest emitter of GHG in the United States, only surpassed by Texas, and the tenth largest GHG emitter in the world. 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) (CEC 2006).

CARB's latest update to the statewide GHG emissions inventory was conducted in 2010 for year 2008 emissions.[2] In 2008, California produced 478 MMTons of CO_2-equivalent (CO_2e) GHG emissions.[3] 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 the state's total emissions. Other major sources of GHG emissions include commercial and residential, recycling and waste, high global warming potential GHGs, agriculture, and forestry (CARB 2010).

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHG 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 (IPCC 2007). 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 (CAT 2006).

Climate-change scenarios are affected by varying degrees of uncertainty. IPCC's 2007 IPCC 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°C (2.5 to 10.4°F). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, 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 (CAT 2006).

[2] 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).
[3] 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.

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 is 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 (CAT 2006). 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 5.6-2), 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 5.6-2 and include public health impacts, water resources impacts, agricultural impacts, coast sea level impacts, forest and biological resource impacts, and electricity impacts. Specific climate change impacts that could affect the proposed project include health impacts from a reduction in air quality, water resources impacts from a reduction in water supply, and increased energy demand.

Table 5.6-2
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	• Increasing risk and severity of wildfires • Lengthening of the wildfire season • Movement of forest areas • Conversion of forest to grassland • Increasing threats from pest and pathogens • Declining forest productivity • Shifting vegetation and species distribution • Altered timing of migration and mating habits • Loss of sensitive or slow-moving species
Electricity	• Potential reduction in hydropower • Increased energy demand

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

Regulatory Setting

Regulation of GHG Emissions on a National Level

The U.S. Environmental Protection Agency (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 U.S. 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 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 (EPA 2009).

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 (the first three are applicable to the proposed project).

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.

Regulation of GHG Emissions on a State Level

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32, the Global Warming Solutions Act, and Executive Order S-03-05. 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, signed June 1, 2005. Executive Order S-03-05 set the following GHG reduction targets for the state:

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

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 million metric tons (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) (CARB 2008).[4]

[4] 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.

Since release of the 2008 Scoping Plan, CARB has updated the statewide GHG emissions inventory to reflect GHG emissions in light of the economic downturn and measures not previously considered within the 2008 Scoping Plan baseline inventory. The updated forecast predicts emissions to be 507 MMTons by 2020. The new inventory identifies that an estimated 80 MMTons of reductions are necessary to achieve the statewide emissions reduction of AB 32 by 2020, 15.7 percent of the projected emissions compared to BAU in year 2020 (i.e., 15.7 percent of 507 MMTons) (CARB 2012).

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. Key elements of CARB's GHG reduction plan 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;
- Developing a California cap-and-trade program that links with other Western Climate Initiate partner programs to create a regional market system for large stationary sources;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- 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),[5]
- Creating target fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

Table 5.6-3 shows the proposed reductions from regulations and programs outlined in the Scoping Plan. 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 play in the 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 (CARB 2008).

[5] On December 29, 2011, the U.S. 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. In January 2012, CARB appealed the decision and on April 23, 2012, the Night Circuit Court granted CARB's motion for a stay of the injunction while it continues to consider CARB's appeal of the lower court's decision.

Table 5.6-3
Scoping Plan Greenhouse Gas Reduction Measures and Reductions toward 2020 Target

Recommended Reduction Measures	Reductions Counted toward 2020 Target of 169 MMT CO_{2e}	Percentage of Statewide 2020 Target
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets[1]	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	**146.7**	**87%**
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	**27.3**	**16%**
Total Reductions Counted toward 2020 Target	**174**	**100%**
Other Recommended Measures – Not Counted toward 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations	To Be Determined	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted toward 2020 Target	**42.8**	**NA**

Source: CARB 2008.

Notes: The percentages in the right-hand column add up to more than 100 percent because the emissions reduction goal is 169 MMTons and the Scoping Plan identifies 174 MMTons of emissions reductions strategies.

$MMTCO_{2e}$: million metric tons of CO_{2e}

[1] Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target.

[2] According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 million metric tons of CO_{2e} (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 target.

Energy Conservation Standards

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]). Title 24 requires 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.

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.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). 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.

Renewable Power Requirements

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. CARB has now approved an even higher goal of 33 percent 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.

Vehicle Emission Standards/Improved Fuel Economy

Vehicle GHG emission standards were enacted under AB 1493 (Pavley I) and the LCFS. 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. 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.

Regulation of GHG Emissions on a Regional Level

In 2008, SB 375 was adopted and was intended to represent the implementation mechanism necessary to achieve the GHG emissions reductions targets established in the Scoping Plan for the transportation sector as it relates to local land use decisions that affect travel behavior. Implementation is intended 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 with local land use planning to reduce vehicle miles traveled and vehicle trips. Specifically, SB 375 requires CARB to establish GHG emissions reduction targets for each of the 17 regions in California managed by a metropolitan planning organization (MPO). Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG is the MPO for the southern California region, which includes the counties of Los Angeles, Orange, San Bernardino County, Riverside, Ventura, and Imperial. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035.

The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's existing transportation network. The proposed targets would result in 3 MMTons of GHG reductions by 2020 and 15 MMTons of GHG reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

SB 375 requires the MPOs to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plan. For the SCAG region, the Draft SCS was released in December 2011 and is anticipated to be adopted by April 2012 (SCAG 2011). The SCS will set forth a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. If the SCS is unable to achieve the regional GHG emissions reduction targets, the MPO is required to prepare an Alternative Planning Strategy that shows how the GHG emissions reduction target could be achieved through other development patterns, infrastructure, and/or transportation measures.

Existing Communitywide GHG Emissions

An existing emissions inventory of the City of Industry was conducted based on the existing land uses and is shown in Table 5.6-4. The existing GHG emissions were calculated using CalEEMod, OFFROAD2007, and EMFAC2011.

Table 5.6-4
Existing Community-Wide GHG Emissions

Source	GHG Emissions MTons/Year	Percent of Inventory
Transportation[1]	822,480	62%
Energy[2]	273,750	21%
Waste[3]	104,270	8%
Industrial[4]	73,060	6%
Area[5, 6, 7]	41,460	3%
Water[2]	10,130	1%
Total	1,325,150	**100%**
Total without Industrial[8]	1,252,090	—
Service Population[9]	69,244	—
Emissions per Service Population	1,064,277	—
GHG Target Emissions by 2020[10]	1,074,545	—

Source: CalEEmod Version 2011.1.1, OFFROAD2007, EMFAC2011. Inventory rounded to the tens.
[1] Daily VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with the California Air Resources Board's (CARB) statewide GHG emissions inventory methodology (CARB 2008). Modeled using EMFAC2011 based on fleet mix derived from daily segment counts conducted by LLG.
[2] Modeled using CalEEMod.
[3] Existing 2008 waste disposal for the City of Industry (excluding the Sphere of Influence), reported by CalRecycle, is 122,385 tons per year including Alternative Daily Cover (ADC). However, for this EIR, waste disposal rates are calculated using land use specific rates from CalRecycle, which overestimates waste disposal in the City for existing and General Plan Update theoretical buildout (post-2035 scenario).
[4] Fuel usage from permitted sources provided by SCAQMD, excludes landfill gas generated by the Puente Hills Landfill within the County of Los Angeles.
[5] Excludes all emissions from the Union Pacific Railroad (UPRR) rail yard within the City including trains and yard equipment. These emissions are under the jurisdiction of UPRR and separate agreements with CARB have been made for air pollutant emissions reductions associated with trains and yard equipment.
[6] Includes areas sources associated with truck idling. Truck idling is based on 10 minutes per trip.
[7] Includes unpermitted sources: transport refrigeration units, light commercial, industrial and other portable equipment from Offroad2007, proportioned based on City vs. County employment data. Also includes construction emissions from Offroad2007 proportioned based on City vs. County acreage.
[8] GHG reduction targets for the City of Industry exclude permitted sources.
[9] Service population based on 68,741 employees in the City and Sphere and 503 residents.
[10] Based on CARB's Scoping Plan which identifies that cities should reduce GHG emissions by 15 percent from existing (defined as years 2005 to 2008) levels.

5.6.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

GHG-1 Generate greenhouse gas 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 greenhouse gases.

South Coast Air Quality Management District

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) held in September 2010, SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

Tier 1 If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

Tier 2 If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD is proposing a screening-level threshold of 3,000 MTons annually for all land use types or the following land-use-specific thresholds: 1,400 MTons for commercial projects, 3,500 MTons for residential projects, or 3,000 MTons for mixed-use projects. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions.

Tier 3 If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

Tier 4 If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

SCAQMD is proposing to adopt an efficiency target for projects that exceed the screening threshold. The current recommended approach is per capita efficiency targets. SCAQMD is not recommending use of a percent emissions reduction target. Instead, SCAQMD proposes a 2020 efficiency target of 4.8 MTons per year per service population (MTons/year/SP) for project-level analyses and 6.6 MTons/year/SP for plan level projects (e.g., program-level projects such as general plans).[6] For the purpose of this project, SCAQMD's plan-level thresholds are used since this is a General Plan Update. If projects exceed these per capita efficiency targets, GHG emissions would be considered potentially significant in the absence of mitigation measures.

5.6.3 Environmental Impacts

On December 30, 2009, the Natural Resources Agency adopted amendments to the CEQA Guidelines. These amendments became effective on March 18, 2010. The amendments to the CEQA Guidelines include new requirements to evaluate GHG emissions. Pursuant to the amended CEQA Guidelines, a lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

[6] It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.

1. The extent to which the project may increase (or reduce) GHG emissions compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.[7]

The City of Industry's community-wide GHG emissions inventory includes the following sectors:

Transportation: Transportation emissions were modeled using CARB's EMFAC2011. Model runs were base trips provided by LLG and average trip length for light and medium vehicles and heavy duty trucks derived from the SCAG 2012 Regional Transportation Plan (RTP) model provided by SCAG. Fleet mix for the City of Industry was based on segment counts conducted by LLG. VMT was separated into trips to/from Industry to areas outside of the City (external trips) and trips internal to the City. Pursuant to the recommendations of the Regional Transportation Advisory Committee (RTAC), only 50 percent of the trip length for external trips is considered to be the responsibility of the City of Industry for the purpose of GHG emissions reductions.[8]

Area Sources. CalEEMod was used to estimate criteria air pollutant emissions from landscape maintenance equipment and consumer products such as aerosol sprays. An estimate of commercial and industrial equipment use in the City (including transport refrigeration use) and construction equipment use is included based on OFFROAD2007 and proportioned to the City based on County-level data. The area source emissions inventory also includes an estimate of truck idling using idle emission rates from CARB's EMFAC2011 based on trip generation provided by LLG.

Industrial. GHG emissions from permitted sources in the City are based on information provided by SCAQMD. Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the Preferred Land Use Plan would require permitting and would be subject to further study pursuant to SCAQMD Rule 1401. Because of the nature of those emissions, future emissions levels cannot be determined at this time. New stationary sources are subject to additional review as part of their permitting requirements. Existing emissions are reported where available and are assumed to have no change for the 2035 inventory.

Energy: CalEEMod was used to estimate natural gas used for heating and cooking associated with land uses in the City.

Water/Wastewater: CalEEMod was used to estimate GHG emissions associated with water use and wastewater treatment associated with land uses in the City.

[7] OPR recommendations include a requirement that such a plan be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.
[8] RTAC was formed to establish GHG reduction target methodology under Senate Bill 375 (SB 375). RTAC recommends that in scenarios where employment trips are split between jurisdictional boundaries, only 50 percent of the trip length be included as part of that region's GHG inventory. What this means is that vehicle trips may originate outside of the City of Industry, where employees live, but end in the City of Industry, where they work. Therefore, the City considers only 50 percent of the trip length and trip to be associated with the City's community-wide GHG emissions inventory.

Waste: CalEEMod was used to estimate GHG emissions from waste disposal in the City based on waste generation rates from CalRecycle.

Life cycle emissions are not included in this analysis because not enough information is available for the proposed project, and therefore life cycle GHG emissions would be speculative.[9]

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.6-1: THEORETICAL BUILDOUT OF THE CITY OF INDUSTRY PURSUANT TO MAXIMUM LEVEL ALLOWED BY THE LAND USE DESIGNATIONS OF THE GENERAL PLAN UPDATE LAND USE PLAN WOULD GENERATE A SUBSTANTIAL INCREASE IN GHG EMISSIONS OVER EXISTING CONDITIONS. [THRESHOLDS GHG-1 AND GHG-2]

Impact Analysis: The theoretical buildout of the City of Industry at maximum levels in a post-2035 scenario would contribute to global climate change through direct and indirect GHG emissions.

For the purpose of the following analysis, it is important to note that, based on the requirements of CEQA, this analysis is based on a comparison to existing land uses and does not address the differences that would result from a comparison with the existing General Plan land use map, from which there is little variation when compared to the proposed General Plan land use map.

It is also important to note that the General Plan Update is a regulatory document that sets forth the framework for future growth and development and does not directly result in development in and of itself. Before any development can occur in the City, all such development is required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and state requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

Post-2035 Community-Wide GHG Emissions

The community-wide GHG emissions inventory for the City compared to existing conditions is included in Table 5.6-5. As shown in this table, the theoretical buildout of the General Plan Update would result in a substantial increase in GHG emissions. The City would not achieve the proposed per capita efficiency threshold. Therefore, GHG emissions are considered to be substantial enough to result in a significant cumulative impact relative to GHG emissions.

[9] Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative.

Table 5.6-5
Annual Operational Phase GHG Emissions at Theoretical Buildout

Source	GHG Emissions MTons/Year		
	Existing 2008	General Plan Theoretical Buildout Post-2035	Total Net Increase
Transportation[1]	822,480	781,810	-40,670
Energy[2]	273,750	323,480	49,730
Waste[3]	104,270	117,390	13,120
Industrial[4]	73,060	73,060	0
Area[5, 6, 7]	41,460	78,180	36,720
Water[2]	10,130	11,950	1,820
Total	1,325,150	1,385,860	60,710
Total without Industrial[8]	1,252,090	1,312,800	60,710
Service Population[9]	69,244	110,178	—
Emissions per Service Population	18.3	11.9	—
SCAQMD Proposed Plan-Level Efficiency Metric	6.6	6.6	—
GHG Target Emissions by 2020[10]	1,074,545	—	—

Sources: CalEEmod Version 2011.1.1; OFFROAD2007; EMFAC2011.
Notes: Inventory rounded to the tens.
[1] Daily VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with the California Air Resources Board's (CARB) statewide GHG emissions inventory methodology (CARB 2008). Modeled using EMFAC2011 based on fleet mix derived from daily segment counts conducted by LLG.
[2] Modeled using CalEEMod. Only new structures are assumed to be built to the 2008 Building and Energy Efficiency Standards. Electricity and natural gas use does not assume future code updates to Title 24 standards. The adjusted inventory does not reflect SCE's 33% RPS in 2020.
[3] Existing 2008 waste disposal for the City of Industry (excluding the Sphere of Influence), reported by CalRecycle, is 122,385 tons per year including Alternative Daily Cover (ADC). However, for this DEIR, waste disposal rates are calculated using land-use-specific rates from CalRecycle, which overestimates waste disposal in the City for existing and General Plan Update theoretical buildout (post-2035 scenario).
[4] Fuel usage from permitted sources provided by SCAQMD, excludes landfill gas generated by the Puente Hills Landfill within the County of Los Angeles. Existing emissions are reported where available and are assumed to have no change for the 2035 inventory.
[5] Excludes all emissions from the Union Pacific Railroad (UPRR) railyard within the City including trains and yard equipment. These emissions are under the jurisdiction of UPRR and separate agreements with CARB have been made for air pollutant emissions reductions associated with trains and yard equipment.
[6] Includes area sources associated with truck idling. Truck idling is based on 10 minutes per trip.
[7] Includes unpermitted sources: transport refrigeration units, light commercial, industrial and other portable equipment from Offroad2007, proportioned based on City vs. County employment data. Also includes construction emissions from Offroad2007 proportioned based on City vs. County acreage.
[8] GHG reduction targets for the City of Industry exclude permitted sources.
[9] Service population based on 68,741 employees and 503 residents in the City and Sphere of Influence for existing conditions and 109,715 employees and 463 residents in the City and Sphere of Influence for post-2035 conditions.
[10] Based on CARB's Scoping Plan, which identifies that cities should reduce GHG emissions by 15 percent from existing (defined as years 2005 to 2008) levels.

Consistency with Statewide and Regional GHG Reduction Plans

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 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 28.5 percent from year 2020 BAU to achieve the targets of AB 32 (CARB 2008). The City of Industry has not yet adopted a qualified GHG reduction plan.

Statewide strategies to reduce GHG emissions include the LCFS, California Appliance Energy Efficiency regulations, California Building Standards (e.g., CALGreen and the 2008 Building and Energy Efficiency Standards), California RPS, changes in the corporate average fuel economy standards (e.g., Pavley I and Pavley II [Advanced Clean Cars]), and other measures that would ensure the state is on target to achieve the GHG emissions reduction goals of AB 32. Statewide GHG emissions reduction measures that are being implemented over the next 10 years would assist the City in reducing its community-wide GHG emissions. However, even with statewide measures, the City would fall short of the state goal to reduce existing emissions by 15 percent. Therefore, impacts would be significant.

5.6.4 Relevant General Plan Policies

The following are relevant policies of the General Plan Update that assist in reducing GHG emissions. Policy number references are provided in parentheses.

Land Use Element

- Support the use of energy-saving designs and equipment in all new development and rehabilitation or reconstruction programs (LU2-6).
- Minimize impacts (including noxious fumes, air pollutants, excessive noise, and hazardous materials) to non-business uses through the use of land use regulations, site planning, and design controls (LU3-1).
- Support the surrounding population through the sponsorship and/or provision of education-and community-building programs (LU3-2).
- Maintain clear development standards but allow flexibility in their application to achieve the Vision (LU4-1).
- Allow flexibility in the application of development standards for those uses that support the Vision and when necessary to minimize the impacts on surrounding land uses (LU4-2).
- Maintain a high quality appearance and functionality of public lands, properties, and rights-of-way, including sidewalks, street trees/landscaping, curbs, and street lighting (LU5-1).
- Design new and, when necessary, retrofit existing streets and public rights-of-way to maintain a high quality, professional appearance (LU5-2).

Circulation Element

- Roadways in the City of Industry will:
  - Comply with federal, state, and local design and safety standards
  - Meet the needs of multiple transportations modes and users
  - Reflect the context and desired character of the surrounding land uses
  - Be maintained in accordance with best practices and City standards (C1-1)
- Maintain a peak-hour LOS D at intersections identified of the Roadway Classification Plan (C1-2).

- Maintain and rehabilitate the circulation system as necessary and funding is available, with a focus on identifying and improving roadways and intersections that are approaching or have reached unacceptable levels of service (C1-3).

- Coordinate with Caltrans, SCAG, neighboring jurisdictions, and other to identify, fund, and implement needed improvements to roadways identified in the roadway classification plan (C1-5).

- Maintain a multimodal system of trails that connect businesses, schools, and other key destination points (C2-1).

- Provide and designate off-street multipurpose sidewalks and trails as the primary paths of bicycle travel (C2-2).

- Explore opportunities to expand the pedestrian and bicycle networks. This includes consideration of utility easements, drainage corridors, road rights-of-ways, and other potential options. (C2-4)

- Encourage and facilitate the use of public transportation to reduce emissions associated with the use of automobiles (C2-5).

- Maintain a proactive working partnership with Metro and Foothill Transit to ensure the continued improvement of transit services provided to the City of Industry. Encourage the extension of Metro and/or Foothill Transit service lines to provide a direct stop at the Industry Metrolink Station (C2-6).

- If dictated by Metro or Foothill Transit, require new development to provide transit facilities, such as bus shelters, transit bays, and turnouts (C2-7).

- Encourage the development and expansion of the Metro Rail Gold Line, Metrolink, and high –speed rail systems that would enhance regional mobility in Southern California and serve the City of Industry (C2-8).

- Encourage the use of ride sharing and public transit for persons employed in the City to reduce traffic congestion and the need for off-street parking in the City (C3-1).

- Help identify and implement feasible solutions to long-term regional transportation problems (C3-2).

- Coordinate with the railroads, Caltrans, ACSG, Metro, ACE, and other transportation agencies when necessary to design, fund, and complete regional projects (C3-3).

- Work with Caltrans, the Metro, and surrounding jurisdictions to implement the RTP, Master Plan of Arterial highways, and CMP (C3-4).

- Continue to coordinate with the rail companies to provide for efficient rail service that minimizes impacts on the local street system (C4-2).

- Continue to pursue grade separation for railroad crossings on designated streets (C4-3).

Resource Management Element

- Encourage the use of recycled water (RM1-2).

- Encourage the conservation of water resources through the use of drought-tolerant plants and water-saving irrigation systems (RM1-3).
- Comply with state building codes relative to indoor air quality (RM2-1).
- Support efforts to reduce pollutants to meet State and Federal Clean Air Standards (RM2-2).
- Collaborate with the CARB and other agencies within the South Coast Air Basin to improve regional air quality and achieve GHG reduction targets (RM2-3).
- Prohibit siting of sensitive land uses within distances defined by CARB unless sufficient mitigation is provided (RM2-4).
- Continue the City's street planting and tree maintenance programs (RM3-5).
- Meet or exceed AB 939 requirements (RM4-1).

Safety Element

- Comply with and enforce applicable building codes when reviewing plans and issuing building permits (S3-1).
- Discourage new sensitive land uses from locating near existing sites that use, store, or generate large quantities of hazardous materials (S4-3).

5.6.5 Existing Regulations

- AB 32: California Global Warming Solutions Act
- Executive Order S-3-05: Greenhouse Gas Emission Reduction Targets
- Pavley Fuel Efficiency Standards (AB1493). Establishes fuel efficiency ratings for new cars.
- California Building Code. Establishes energy efficiency requirements for new construction.
- Title 20 California Code of Regulations (Appliance Energy Efficiency Standards). Establishes energy efficiency requirements for appliances.
- Title 17 California Code of Regulations (Low Carbon Fuel Standard). Requires the carbon content of fuel sold in California to be 10 percent less by 2020.
- California Water Conservation in Landscaping Act of 2006 (AB 1881). Requires local agencies to adopt the Department of Water Resources updated Water Efficient Landscape Ordinance or equivalent by January 1, 2010 to ensure efficient landscapes in new development and reduced water waste in existing landscapes.
- Statewide Retail Provider Emissions Performance Standards (SB 1368). Requires energy generators to achieve performance standards for GHG emissions.

- Renewable Portfolio Standards (SB 1078). Requires electric corporations to increase the amount of energy obtained from eligible renewable energy resources to 20 percent by 2010 and 33 percent by 2020.California Code of Regulations, Title 24: Energy Efficiency Standards

5.6.6 Level of Significance Before Mitigation

Without mitigation, the following impact would be **potentially significant**:

- Impact 5.6-1 Theoretical buildout of the City of Industry pursuant to the maximum allowed by the land use designations of the General Plan Udpate Land Use Plan would generate a substantial increase in GHG emissions over existing conditions.

5.6.7 Mitigation Measures

Mitigation Measure 6-1 outlines the City of Industry's commitment to funding, commits the City to community-wide GHG reduction targets, and requires implementation of actions to reduce GHG emissions within the City.

6-1 The City of Industry will prepare a Climate Action Plan (CAP) within 24 months after adopting the General Plan Update. The goal of the CAP will be to reduce GHG emissions from activities where the City has jurisdictional control within the City boundaries to support the State's efforts under Assembly Bill 32 and to mitigate the impact of climate change. The CAP will include the following:

- **Emission Inventories:** The City will establish GHG emissions inventories including emissions from all sectors within the City that the City has jurisdictional control over, using methods approved by, or consistent with guidance from, the California Air Resources Board (CARB); the City will update inventories every five years or as determined by state standards to incorporate improved methods, better data, and more accurate tools and methods, and to assess progress. If the City is not on schedule to achieve the GHG reduction targets, additional measured will be implemented, as identified in the CAP.

- **Emission Targets:** The City will develop a plan to reduce or encourage reductions in community-wide GHG emissions consistent with the GHG reduction goals of AB 32 (i.e., 15 percent below existing emissions or percent reduction below business as usual based on the current state 2020 emissions forecasts).

- **GHG Reduction Measures:** The CAP will include specific measures to achieve the GHG emissions reduction targets. The CAP will quantify the approximate greenhouse gas emissions reductions of each measure and measures will be enforceable. Measures listed below, along with others, will be considered during the development of the CAP. Once adopted, the City of Industry Planning Department will require that applicants for new development projects incorporate feasible mitigation measures to reduce GHG during operational activities. Potential measures may include:

  - *Area Sector*. Implement a Truck Idling Emissions Reduction Program, which includes:
    - Requiring diesel emission reduction strategies, such as electrifying docking bays, to eliminate and/or reduce idling at truck stops, warehouses, and distribution facilities throughout the City.

  - Monitoring of the California Air Resources Board's five-minute nonessential idling restrictions for trucks and locomotive idling restrictions.
  - Evaluation of strategies to reduce truck idling during the peak hour period of the roadway network, such as staggered work/delivery schedules, truck routes, and/or intersection improvements.

- *Transportation and Area Sector*. Support and promote the use of low- and zero-emission vehicles, by:
  - Encouraging the necessary infrastructure to facilitate the use of zero- emission vehicles and clean alternative fuels, such as electric vehicle charging facilities and conveniently-located alternative fueling stations.
  - Encouraging new construction to include vehicle access to properly wired outdoor receptacles to accommodate zero emission vehicles (ZEV) and/or plug-in electric hybrids (PHEV).
  - Encouraging transportation fleet standards to achieve the lowest emissions possible, using a mix of alternate fuels, partial ZEV, or newer fleet mixes.

- *Transportation Sector*. Coordinate with the Union Pacific Railroad to encourage commercial facilities to utilize rail for long haul.

- *Transportation Sector*. Require employers with more than 20 employees—which is equivalent to 9,000 square feet of retail space, 17,000 square feet of big-box retail space, 7,000 square feet of office space, 19,00 square feet of manufacturing spaces, 30,000 square feet of warehousing and distribution, or 16,000 square feet of light industrial—to implement an Employee Commute Trip Reduction Program that may include the following measures:
  - Ride-share programs
  - Discounted transit programs
  - End-of-trip facilities (e.g., showers and lockers)
  - Telecommuting

- *Energy Sector*. Require new developments to achieve the Tier 1 California Green Building Code (CALGreen) standards, which include requirements that new buildings exceed the current Title 24 Building and Energy Efficiency Standards by 15 percent.

- *Energy Sector*. Establish green building requirements and standards for new development and redevelopment projects, and work to provide incentives for green building practices and remove barriers that impede their use.

- *Energy Sector*. Encourage the performance of energy audits of buildings prior to completion of sale, and that audit results and information about opportunities for energy efficiency improvements be presented to the buyer.

- *Energy Sector*. Work with utility providers to identify large users of energy and encourage existing land owners to conduct a free energy audit that will provide information about opportunities for energy efficiency improvements, including:
  - Energy-efficient heating, ventilation, and air conditioning (HVAC) units.
  - Energy-efficient boilers.
  - Co-generation/combined heat and power systems.

- *Energy Sector*. Establish policies and programs that facilitate the siting of new renewable energy generation.
  - Review and revise building and development codes, design guidelines, and zoning ordinances to remove renewable energy production barriers.
  - Work with related agencies, such as fire, water, health, and others, that may have policies or requirements that adversely impact the development or use of renewable energy technologies.
  - Develop protocols for safe storage of renewable and alternative energy products with the potential to leak, ignite, or explode, such as biodiesel, hydrogen, and/or compressed air.
  - Promote and encourage renewable energy generation and co-generation projects where feasible and appropriate.

- *Water and Wastewater.* Establish programs and policies to increase the use of recycled water, including promoting the use of recycled water for industrial and irrigation purposes.

- *Other.* Recognize businesses in the City that reduce GHG emissions (e.g., reduced energy use) to encourage GHG reductions and recognize success.

- *Other.* Promote reductions in GHG emissions by using the City's purchasing power when choosing suppliers of its goods and services.

5.6.8 Level of Significance After Mitigation

A consistency evaluation was conducted with CAPCOA's GHG reduction measures (see Table 5.6-6) to ensure the Climate Action Plan considers all feasible measure to achieve the GHG reduction targets, including transportation-related GHG reduction measures. GHG emissions generated by land uses in the City of Industry are atypical compared to traditional cities within the State of California because the City is almost fully composed of industrial, commercial (including warehousing), and office land uses. Transportation makes up the single largest GHG emissions sector (56 percent of total GHG emissions). The City's fleet mix carries a disproportionately high percentage of truck traffic compared to the general statewide fleet mix. Future land uses are anticipated to continue to support goods movement throughout southern California. Truck trip length averages approximately 32 miles per trip for the City of Industry (SCAG 2012). VMT generated by truck traffic is not anticipated to decrease, and the number of trucks needed to support demand for goods is anticipated to increase. Therefore, unlike passenger vehicle trip length, which is anticipated to decrease as a result of proximity of jobs to housing, increased density, and transit service, few strategies are feasible that can realistically decrease the amount of trucks and/or VMT anticipated to be generated by land uses within the City. Therefore, additional reduction measures included as part of the State's Goods Movement Action Plan were also considered as part of Mitigation Measure 6-1. Despite implementation of mitigation measures requiring the City to prepare and implement a plan to align the City's GHG reduction goals with the GHG reduction targets of AB 32, Impact 5.6-1 would remain significant and unavoidable.

Table 5.6-6
CAPCOA GHG Emissions Model Policies in General Plan

Applicable CAPCOA GHG Reduction Measures	Consistency
By 2020, the City/County will reduce GHG emissions from within its boundaries to a level 30 percent less than the level that would otherwise occur if all activities continued under a "business as usual" scenario, or to a level 15 percent less than [existing] levels.	***Included.*** Mitigation Measure 6-1 requires the City to prepare a Climate Action Plan that aligns the City's GHG reduction target with the GHG reduction goal established as part of AB 32.
The City/County will ensure that its local Climate Action, Land Use, Housing, and Transportation Plans are aligned with, support, and enhance any regional plans that have been developed consistent with state guidance to achieve reductions in GHG emissions.	***Included.*** Section 5.9, *Land Use and Planning*, compares the General Plan Update to the regional goals and policies. The General Plan Update is internally consistent.
The City/County will adopt and implement a development pattern that enhances non-automobile transportation.	***Included.*** The circulation plan of the General Plan Update is consistent with the legislative requirements of Assembly Bill 1358 (AB 1358 – the Complete Streets Act) to plan for a balanced, multi-model transportation system that meets the needs of all users of the streets, roads, and highways for safe and convenient travel.
Promote infill, mixed-use, and higher density development, and provide incentives to support the creation of affordable housing in mixed-use zones.	***Not Included.*** The land use plan of the General Plan Update provides for intensification of commercial, office, and industrial land uses, some of which may be incompatible for residential development. The City does not include new residential land uses. Therefore, residential densification and affordable housing is not directly applicable to the City. However, one cannot view Industry alone since on a regional basis it serves as an employment base for the residents of the surrounding communities. Roughly, 70 percent of the employees in the City live in east, southwest and upper San Gabriel Valley and in the City of Whittier.
Promote greater linkage between land uses and transit, as well as other modes of transportation.	***Included.*** Policies C2-1 through C2-8 identify the City's policies that promote a greater linkage between land uses and transit. Policy C2-1 requires the City to maintain a multimodal system of trails that connects business, schools, and other key destinations in the City.
Promote development and preservation of neighborhood characteristics that encourage walking and bicycle riding in lieu of automobile-based travel.	***Included.*** AB 1358 requires that roadways meet the needs of all users of the street. Pursuant to Policy C1-1, roadways in the City will be designed to comply with existing regulations and meet the needs of multiple transportation modes and users. Policies C2-1 through C2-8 and C3-1 identify specific policies that encourage walking, bicycling, and transit use as an alternative means of travel to the automobile.

Table 5.6-6
CAPCOA GHG Emissions Model Policies in General Plan

Applicable CAPCOA GHG Reduction Measures	Consistency
Review fee structures and other opportunities to provide financial and administrative incentives to support desired land uses, development patterns, and alternative modes of transportation.	***Not Included.*** Policy LU1-1 specifically states that business and employment land uses are the primary land uses within the City. Residential land uses and policies that encourage developers to build at maximum residential density are not applicable for the City of Industry. ***Included.*** However, Policies C2-1 through C2-8 and C3-1 encourage walking, bicycling, and transit use as alternative means of travel to the automobile. The circulation plan of the General Plan Update is designed to meet the needs of all users of the street. Future roadway projects would be funded through development impact fees and other funding programs.
The City/County will mitigate climate change by decreasing heat gain from pavement and other hard surfaces associated with infrastructure.	***Included.*** The City, through Policy LU2-6, supports the use of energy-saving designs in all new development and rehabilitation or reconstruction projects. The 2008 Building and Energy Efficiency Standards and the CALGreen require light-colored roofing materials and other hard surfaces to increase the albedo (i.e., reflectivity) and decrease the heat gain. In addition, Mitigation Measure 6-1 requires the City to consider additional measures for building design and energy efficiency as part of the proposed Climate Action Plan.
The City/County will reduce VMT-related emissions by encouraging the use of public transit through adoption of new development standards that will require improvements to the transit system and infrastructure, increase safety and accessibility, and provide other incentives.	***Included.*** As discussed previously, there are few feasible measures that can affect the length of truck trips generated by land uses in the City because of the role the City plays in southern California's goods movement. However, the City has identified several policies to provide opportunities for and encourage use of alternative modes of transportation to reduce VMT. Policies C2-1 through C2-8 and C3-1 encourage walking, bicycling, and transit use as an alternative means of travel to the automobile.
The City/County will implement traffic and roadway management strategies to improve mobility and efficiency, and reduce associated emissions.	***Included.*** Policies C3-2 through C4-3 identify regional strategies proposed by the City to effectively move traffic through the City to reduce delay and idling time. Policies C1-1 through C1-5 identify the City's policies regarding the roadway management strategies the City would undertake to improve mobility and efficiency.
The City/County will reduce VMT-related emissions by implementing and supporting trip reduction programs.	***Included.*** As discussed previously, there are few feasible measures that can affect the length of truck trips generated by land uses in the City because of the role the City plays in southern California's goods movement. However, the City has identified several policies to provide opportunities for and encourage use of alternative modes of transportation to reduce VMT. Policies C2-1 through C2-8 and C3-1 encourage walking, bicycling, and transit use as alternative means of travel to the automobile. In addition, Mitigation Measure 6-1 includes consideration of Employee Commute Trip Reduction Programs for larger employers.

Table 5.6-6
CAPCOA GHG Emissions Model Policies in General Plan

Applicable CAPCOA GHG Reduction Measures	Consistency
The City/County will support bicycle use as a mode of transportation by enhancing infrastructure to accommodate bicycles and riders, and providing incentives.	***Included.*** In accordance with Policy C2-2, the circulation plan of the General Plan Update designates off-street multipurpose sidewalks and trails for bicycle travel. Policy C2-4 also allows for consideration of utility corridors as a potential way to expand bicycle trails within the City.
The City/County will establish parking policies and requirements that capture the true cost of private vehicle use and support alternative modes of transportation.	***Included.*** AB 1358 requires that roadways meet the needs of all users of the street. Pursuant to Policy C1-1, roadways in the City will be designed to comply with existing regulations and meet the needs of multiple transportation modes and users. Policies C2-1 through C2-8 and C3-1 identify specific policies that encourage walking, bicycling, and transit use as alternative means of travel to the automobile.
The City/County will support and promote the use of low and zero emissions vehicles, and alternative fuels, and other measures to directly reduce emissions from motor vehicles.	***Included.*** Mitigation Measure 6-1 requires the City to consider use of low and zero emission vehicles for municipal services.
The City/County will establish green building requirements and standards for new development and redevelopment projects, and will work to provide incentives for green building practices and remove barriers that impede their use.	***Included.*** Mitigation Measure 6-1 requires the City to consider requiring new buildings to exceed the current Building and Energy Efficiency Standards. This mitigation measure also requires the City to consider measures that establish green building requirements and standards for new development and redevelopment projects, and work to provide incentives for green building practices and remove barriers that impede their use.
The City/County will establish policies and standards to increase energy efficiency at new developments.	***Included.*** Mitigation Measure 6-1 requires the City to consider requiring new buildings to exceed the current Building and Energy Efficiency Standards.
The City/County will establish policies and standards to reduce exterior heat gain and heat island effects.	***Included.*** Mitigation Measure 6-1 requires the City to consider requiring new buildings to exceed the current Building and Energy Efficiency Standards. In addition, Policy LU-2 supports the use of energy-saving designs and equipment in all new development and rehabilitation or reconstruction programs.
The City/County will pursue policies and programs to improve energy-efficiency of existing buildings.	***Included.*** Policy LU-2 supports the use of energy-saving designs and equipment in rehabilitation or reconstruction programs. Mitigation Measure 6-1 requires the City to consider measures that encourage the performance of energy audits of buildings prior to completion of sale, and that audit results and information about opportunities for energy efficiency improvements be presented to the buyer. Additionally, the City complies with state streamlining requirements for solar projects and has approved numerous building permits at a staff level for the installation of solar panels on existing buildings.

Table 5.6-6
CAPCOA GHG Emissions Model Policies in General Plan

Applicable CAPCOA GHG Reduction Measures	Consistency
The City/County will establish policies and programs that facilitate the siting of new renewable energy generation. The City/County will promote and require renewable energy generation, and co-generation projects where feasible and appropriate. The City/County will promote, support, and require, as appropriate, the development of solar energy. The City/County will pursue and provide economic incentives and creative financing for renewable energy projects, as well as other support for community members or developers seeking funding for such projects. The City/County will implement measures to support the purchase and use of renewable and alternative energy. The City/County will enhance renewable energy generation, and implement programs for load management and demand response.	***Included.*** Mitigation Measure 6-1 requires the City to consider measures that promote and encourage renewable energy generation and co-generation projects, and that establish policies and programs that facilitate the siting of new renewable energy generation. In addition, the City recently implemented solar energy panels over new carports that were constructed at the Industry Metrolink Station. The panels will generate approximately 2,000 kilowatts (2 megawatts) in photovoltaic solar energy, which is enough renewable, clean energy to power 1,000 homes. In addition to the solar panels, the City also installed 64 Level II electrical vehicle charging stations, which can potentially service up to 800 electric vehicles.
The City/County will enhance the energy efficiency of its facilities.	***Included.*** Policy LU-2 supports the use of energy-saving designs and equipment in rehabilitation or reconstruction programs. Mitigation Measure 6-1 requires the City to consider measures that encourage the performance of energy audits of buildings prior to completion of sale, and that audit results and information about opportunities for energy efficiency improvements be presented to the buyer.
The City/County will improve efficiency at municipal systems and reduce GHG emissions from vehicle and equipment engines.	***Included.*** Policy LU-2 supports the use of energy-saving designs and equipment in rehabilitation or reconstruction programs, which include municipal buildings. In addition, Mitigation Measure 6-1 requires the City to consider use of low and zero emission vehicles for municipal services.
The City/County will implement measures to reduce employee vehicle trips and to mitigate emissions impacts from municipal travel.	***Included.*** The City has identified several policies to provide opportunities for and to encourage use of alternative modes of transportation to reduce VMT, which also apply to municipal operations. Policies C2-1 through C2-8 and C3-1 encourage walking, bicycling, and transit use as an alternative means of travel to the automobile. In addition, Mitigation Measure 6-1 includes consideration of Employee Commute Trip Reduction Programs for larger employers.
The City/County will manage its vegetation inventory to reduce GHG emissions	***Included.*** The City of Industry is mostly developed, with the exception of the vacant Industry Business Center site at the east end of the City and small, isolated parcels scattered throughout the City. Areas designated Recreation and Open Space (see Figure 3-6, *Proposed Land Use Plan*) would be conserved. Policy RM1-3 encourages the conservation of water resources through the use of drought-tolerant plants and water-saving irrigation systems, which indirectly reduce GHG emissions. Policy RM3-5 identifies continuation of the City's street planting and maintenance programs.

Table 5.6-6
CAPCOA GHG Emissions Model Policies in General Plan

Applicable CAPCOA GHG Reduction Measures	Consistency
The City/County will use its purchasing power to promote reductions in GHG emissions by the suppliers of its goods and services.	***Included.*** Mitigation Measure 6-1 requires the City to consider other GHG reduction strategies, including using the City's purchase power when selecting suppliers of goods and services.
The City/County will improve emissions control at waste handling facilities.	***Not Included.*** The City does not own any landfills or waste handling facilities. This policy is not applicable.
The City/County will implement enhanced programs to divert solid waste from landfill operations.	***Included.*** The City complies with the waste reduction goals of Assembly Bill 939 (AB 939). There are 15 solid waste diversion programs in the City, including the Puente Hills Material Recovery Facility; construction and demolition waste diversion, and public education programs (CalRecycle 2012). The City's Municipal Code requires recycling bins and enclosed storage areas. New development would also be required to comply with CALGreen, which includes construction waste reduction, material selection, and natural resource conservation. Additionally, Policy RM4-1 identifies that the City will continue to meet or exceed AB 939 programs.
The City/County will enhance regional coordination on waste management.	***Included.*** Policy RM4-1 states that the City will continue to meet or exceed AB 939 programs. The City coordinates with local waste haulers to ensure continued recycling service is available.
The City/County will adopt and implement a comprehensive strategy to increase water conservation and the use of recycled water.	***Included.*** Policy RM1-2 encourages the use of recycled water while Policy RM1-3 encourages the conservation of water resources through the use of drought-tolerant plants and water-saving irrigation systems. New development in the City is required to comply with Chapter 13.18 of the City's Municipal Code, also known as the Water Efficiency Landscape Ordinance.
The City/County will ensure that building standards and permit approval processes promote and support water conservation.	***Included.*** Policies RM1-2 and RM1-3 encourage the use of recycled water and the conservation of water resources through the use of drought-tolerant plants and water-saving irrigation systems. New development in the City is also required to comply with Chapter 13.18 of the City's Municipal Code, known as the Water Efficiency Landscape Ordinance.
The City/County will establish programs and policies to ensure landscaping and forests are installed and managed to optimize their climate benefits.	***Included.*** No forest lands are within the City. In addition to the water conservation policies described above, Policy RM3-5 identifies continuation of the City's street planting and maintenance programs. The City also requires property owners to establish and maintain private landscaped areas pursuant to the City's Municipal Code.

Table 5.6-6
CAPCOA GHG Emissions Model Policies in General Plan

Applicable CAPCOA GHG Reduction Measures	Consistency
The City/County will establish policies and programs to develop and preserve conservation areas, including forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, and groundwater recharge areas, that remove and sequester carbon from the atmosphere.	***Included.*** The City is mostly developed, with the exception of the vacant Industry Business Center at the eastern end of the City and small, isolated parcels scattered throughout the City. Areas designated Recreation and Open Space (see Figure 3-6, *Proposed Land Use Plan*) would be conserved. Policy R3-1 states that the City would cooperate with regional efforts to upgrade the resource and recreational value of the San Gabriel River. The City also complies will all applicable state and federal regulations, including those set forth by SCAQMD.
The City/County will establish a coordinated, creative public outreach campaign, including publicizing the importance of reducing GHG emissions and steps community members can take to reduce their individual impacts.	***Included.*** As part of the City's Climate Action Plan, required as part of Mitigation Measure 6-1, the City would meet with stakeholder groups, including business and major GHG emitters within the City.
The City/County will work with local businesses and energy providers on specific, targeted outreach campaigns and incentive programs.	***Included.*** As part of the City's Climate Action Plan, required as part of Mitigation Measure 6-1, the City would meet with stakeholder groups, including business and major GHG emitters within the City.
The City/County will organize events and workshops to promote GHG-reducing activities.	***Included.*** As part of the City's Climate Action Plan, required as part of Mitigation Measure 6-1, the City would meet with stakeholder groups, including business and major GHG emitters within the City.
The City/County will sponsor competitions and awards to encourage GHG reductions and recognize success.	***Included.*** Mitigation Measure 6-1 requires the City to consider other GHG reduction strategies, including recognizing those businesses within the City that make a conscious effort to reduce GHG emissions.

Source: CAPCOA 2009. Based on Table 2, Worksheet for Model Policies Evaluation.