

4.7 GREENHOUSE GAS EMISSIONS

This chapter describes and examines the greenhouse gas (GHG) emissions impacts associated with the proposed Project. This chapter is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD) for project-level review. 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. This chapter evaluates the potential for the proposed Project to cumulatively contribute to GHG emissions impacts in California. The transportation sector analysis is based on average daily vehicle trips and vehicle miles traveled (VMT) provided by Fehr & Peers. The GHG emissions are modeled using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2. The GHG emissions modeling is included in Appendix C of this EIR.

4.7.1 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. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor, carbon dioxide (CO₂), methane (CH₄), and ozone (O₃)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.^{1,2,3} Table 4.7-1 lists the GHG applicable to the proposed Project and their relative global warming potentials (GWP) compared to CO₂.

¹ Intergovernmental Panel on Climate Change (IPCC), 2001. *Third Assessment Report: Climate Change 2001*. New York: Cambridge University Press.

² Water vapor (H₂O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant.

³ Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities. California Air Resources Board (CARB), 2013. Climate Change Scoping Plan First Update, http://www.arb.ca.gov/cc/scopingplan/2013_update/discussion_draft.pdf.

GREENHOUSE GAS EMISSIONS

TABLE 4.7-1 GREENHOUSE GASES AND THEIR RELATIVE GLOBAL WARMING POTENTIAL COMPARED TO CO₂

GHGs	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 ₂ O)	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 ₂ F ₆)	10,000	9,200
Perfluorobutane (C ₄ F ₁₀)	2,600	7,000
Perfluoro-2-methylpentane (C ₆ F 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 CO₂. Intergovernmental Panel on Climate Change (IPCC), 2001. *Third Assessment Report: Climate Change 2001*. New York: Cambridge University Press.

b. The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO₂ is not included.

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

GREENHOUSE GAS EMISSIONS

The major GHGs are briefly described below.

- **Carbon dioxide** (CO₂) 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** (CH₄) 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** (N₂O) 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 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 [CF₄] and perfluoroethane [C₂F₆]) 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 used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.
- **Sulfur Hexafluoride** (SF₆) is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF₆ 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.^{4,5,6}

⁴ United States Environmental Protection Agency (USEPA), 2012. Greenhouse Gas Emissions. <http://www.epa.gov/climatechange/ghgemissions/gases.html>.

⁵ Intergovernmental Panel on Climate Change (IPCC), 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press.

⁶ Intergovernmental Panel on Climate Change (IPCC), 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

GREENHOUSE GAS EMISSIONS

California's Greenhouse Gas 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.⁷ However, California also has over 12 million more people than the state of Texas. Because of more stringent air emission regulations, in 2001 California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO₂ emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services).⁸

CARB's latest update to the statewide GHG emissions inventory was conducted in 2012 for year 2009 emissions.⁹ In 2009, California produced 457 million metric tons (MMT) of CO₂-equivalent (CO₂e) GHG emissions. California's transportation sector is the single largest generator of GHG emissions, producing 37.9 percent of the State's total emissions. Electricity consumption is the second largest source, comprising 22.7 percent. Industrial activities are California's third largest source of GHG emissions, comprising 17.8 percent of the state's total emissions. Other major sectors of GHG emissions include commercial and residential, recycling and waste, high global warming potential GHGs, agriculture, and forestry.^{10,11}

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 CO₂ 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. 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

⁷ California Energy Commission (CEC), 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.

⁸ California Energy Commission (CEC), 2006. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004. Report CEC-600-2006-013-SF.

⁹ 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).

¹⁰ CO₂-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.

¹¹ California Air Resources Board (CARB), 2012. *California Greenhouse Gas Inventory for 2000–2009. By Category as Defined by the Scoping Plan.*

¹² Intergovernmental Panel on Climate Change (IPCC), 2007. *Fourth Assessment Report: Climate Change 2007.* New York: Cambridge University Press.

¹³ California Climate Action Team (CAT), 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

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 time frame but within a human lifetime.¹⁴

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, 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 4.13-1), 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 to California are shown in Table 4.7-2 and include public health impacts, water resources impacts, agricultural impacts, coastal sea level impacts, forest and biological resource impacts, and energy impacts. Specific climate change impacts that could affect the Project include health impacts from a deterioration in air quality, water resources impacts from a reduction in water supply, and increased energy demand.

4.7.1.2 REGULATORY FRAMEWORK

Federal Laws and Regulations

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.¹⁶

The EPA's endangerment finding covers emissions of six key GHGs—CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, and SF₆—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).

¹⁴ Intergovernmental Panel on Climate Change (IPCC), 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

¹⁵ California Climate Action Team (CAT), 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

¹⁶ United States Environmental Protection Agency (EPA), 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>.

GREENHOUSE GAS EMISSIONS

TABLE 4.7-2 SUMMARY OF GREENHOUSE GAS EMISSION 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
Coastal 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 (CEC), 2006. Our Changing Climate, Assessing the Risks to California, 2006 Biennial Report, California Climate Change Center, CEC-500-2006-077; California Energy Commission (CEC), 2008. The Future Is Now, An Update on Climate Change Science, Impacts, and Response Options for California, CEC-500-2008-0077.

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 (MT) or more of CO₂ per year are required to submit an annual report.

Executive Order S-03-05

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

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

State 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.

Assembly Bill 32, the Global Warming Solutions Act (2006)

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. 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 the California Resources Board (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 MMTCO₂e. In December 2007, CARB approved a 2020 emissions limit of 427 MMTCO₂e (471 million tons) for the State. The 2020 target requires a total emissions reduction of 169 MMTCO₂e, 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 MMTCO₂e).^{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 MT of CO₂ 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.

CARB 2008 Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. Key elements of CARB's GHG reduction plan that may be applicable to the proposed Project include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards (adopted and cycle updates in progress);
- Achieving a mix of 33 percent for energy generation from renewable sources (anticipated by 2020);
- A California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system for large stationary sources (adopted 2011);

¹⁷ California Air Resources Board (CARB), 2008. *Climate Change 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.

GREENHOUSE GAS EMISSIONS

- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted);
- Adopting and implementing measures pursuant to State laws and policies, including California's clean car standards (amendments to the Pavley Standards adopted 2009, Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (LCFS) (adopted 2009).¹⁹
- 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 (in progress).

Though 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 MMTCO_{2e}, 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.²⁰ 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.²¹

Update to the 2008 Scoping Plan

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 of measures not previously considered in the 2008 Scoping Plan baseline inventory. The updated forecast predicts emissions to be 507 MMTCO_{2e} by 2020. The new inventory identifies that an estimated 80 MMTCO_{2e} of reductions are necessary to achieve the statewide emissions reduction of AB 32 by 2020, 15.6 percent of the projected emissions compared to BAU in year 2020 (i.e., 15.6 percent of 507 MMTCO_{2e}).²²

CARB is in the process of completing a five-year update to the 2008 Scoping Plan, as required by AB 32. A discussion draft of the 2013 Scoping Plan was released on October 1, 2013. The 2013 Scoping Plan update defines CARB's climate change priorities for the next five years and lays the groundwork to reach post-2020 goals in Executive Orders S-3-05 and B-16-2012. The update includes the latest scientific findings related to climate change

¹⁹ 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 enjoined 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 Ninth Circuit Court granted CARB's motion for a stay of the injunction while it continued to consider CARB's appeal of the lower court's decision. On July 15, 2013, the State of California Court of Appeals held that the LCFS would remain in effect and that CARB can continue to implement and enforce the 2013 regulatory standards while it corrects certain aspects of the procedures by which the LCFS was adopted. Accordingly, CARB is continuing to implement and enforce the LCFS while addressing the court's concerns.

²⁰ The Scoping Plan references a goal for local governments to reduce community GHG emissions by 15 percent from current (interpreted as 2008) levels by 2020, but it does not rely on local GHG reduction targets established by local governments to meet the State's GHG reduction target of AB 32.

²¹ California Air Resources Board (CARB), 2008. *Climate Change Scoping Plan, a Framework for Change*.

²² California Air Resources Board (CARB). 2012. California Greenhouse Gas Inventory for 2000–2009. By Category as Defined by the Scoping Plan.

GREENHOUSE GAS EMISSIONS

and its impacts, including short-lived climate pollutants. The GHG target identified in the 2008 Scoping Plan is based on IPCC's GWPs identified in the Second and Third Assessment Reports (see Table 4.7-1). IPCC's Fourth Assessment Report identified more recent GWP values based on the latest available science. CARB recalculated the 1990 GHG emission levels with these updated GWPs, and the 427 MMTCO_{2e} 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher, at 431 MMTCO_{2e}.²³

The 2013 update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As identified in the 2013 Scoping Plan update, California is on track to meeting the goals of AB 32. However, the 2013 Scoping Plan also addresses the state's longer-term GHG goals within a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a midterm target. According to the 2013 Scoping Plan update, reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit.²⁴

Senate Bill 375

In 2008, Senate Bill 375 (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 17 regions in California managed by a metropolitan planning organization (MPO). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. MTC's targets are a 7 percent per capita reduction from 2005 by 2020, and 15 percent per capita reduction from 2005 by 2035.²⁵

Plan Bay Area, Strategy for a Sustainable Region

The MTC and Association of Bay Area Government's (ABAG) *Plan Bay Area* is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). The *Plan Bay Area* was adopted July 18, 2013.²⁶ The SCS sets 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) beyond the per capita reduction targets identified by CARB. According to *Plan Bay Area*, the Plan meets a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions. In 2008, MTC and ABAG initiated a regional effort (FOCUS) to link local planned

²³ California Air Resources Board (CARB). 2013. *Climate Change Scoping Plan First Update*, http://www.arb.ca.gov/cc/scopingplan/2013_update/discussion_draft.pdf.

²⁴ California Air Resources Board (CARB). 2013. *Climate Change Scoping Plan First Update*, http://www.arb.ca.gov/cc/scopingplan/2013_update/discussion_draft.pdf.

²⁵ California Air Resources Board (CARB), 2010. Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375.

²⁶ It should be noted that the Bay Area Citizens, Communities for a Better Environment, the Building Industry Association, and the Post-Sustainability Institute filed lawsuits on MTC's and ABAG's adoption of *Plan Bay Area*.

GREENHOUSE GAS EMISSIONS

development with regional land use and transportation planning objectives. Through this initiative, local governments identified Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs). PDAs and PCAs form the implementing framework for *Plan Bay Area*. There is one PDAs identified in *Plan Bay Area* in the City of Walnut Creek: Walnut Creek West Downtown PDA.²⁷ The Project site is within this PDA.

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). 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. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the CEC, the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate zero-emissions vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directs the number of zero-emission vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero-emission by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

Executive Order S-01-07

On January 18, 2007, the State set a new Low Carbon Fuel Standard (LCFS) for transportation fuels sold within the State. 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.

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. CARB has now approved an even higher goal of 33 percent by 2020. In 2011, the State Legislature adopted this higher standard in SBX1-2. Executive Order S-14-08 was signed in November

²⁷ Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), 2013. *Plan Bay Area*. <http://geocommons.com/maps/141979>.

GREENHOUSE GAS EMISSIONS

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.

California Building Code

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (CEC) in June 1977 and most recently revised in 2008 (Title 24, Part 6, of the California Code of Regulations [CCR]).²⁸ 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. On May 31, 2012, the CEC adopted the 2013 Building and Energy Efficiency Standards, which go into effect on January 1, 2014. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.²⁹ The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011.

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. Though 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.

Local Regulations and Policies – City of Walnut Creek Climate Action Plan

The City of Walnut Creek approved its Climate Action Plan (CAP) on April 17, 2012. The City's CAP identifies provides energy use, transportation, land use, and solid waste strategies to reduce Walnut Creek's GHG emissions levels to 15 percent below 2005 levels by 2020.³⁰

²⁸ Although new building energy efficiency standards were adopted in April 2008, these standards did not go into effect until 2009.

²⁹ The green building standards became mandatory in the 2010 edition of the code.

³⁰ Walnut Creek, City of. 2012. *City of Walnut Creek Climate Action Plan*.

GREENHOUSE GAS EMISSIONS

4.7.1.3 EXISTING CONDITIONS

The existing Project site is developed with 4 single-family residences and 17 multi-family dwelling units. The existing residential uses generate criteria air pollutants from vehicle trips, use of natural gas used for heating and cooling, and other area sources on-site (e.g., refrigerants, aerosols, etc.). According to the traffic study prepared by Fehr & Peers, the existing residences generate 213 daily vehicle trips (640 VMT). Existing GHG emissions generated by the land uses on-site is summarized in Table 4.7-3.

TABLE 4.7-3 EXISTING GHG EMISSIONS INVENTORY

Pollutant	2013 Existing Emissions (MTCO ₂ e/Year)	
	MTCO ₂ e	Percent
Area Sources	<1	<1
Energy Use	44	34
Mobile Sources	75	58
Waste Generation	6	4
Water/Wastewater	4	3
Total	129	100%
Total without Waste Generation ^a	124	NA
MTCO ₂ e/Service Population (SP)	2.9	NA

a. Waste emissions are not included in the per capita emissions computation. BAAQMD did not include solid waste emissions when developing the per capita significance thresholds. However, if these emissions are included in the analysis for the existing, existing per capita emissions would be 3.0 MTCO₂e/SP/yr.
Source: CalEEMod 2013.2.2. Based on the trip generation and VMT provided by Fehr & Peers.

4.7.2 STANDARDS OF SIGNIFICANCE

4.7.2.1 CEQA THRESHOLDS

The GHG impacts associated with the proposed Project would be considered significant if the Project would:

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

4.7.2.2 BAAQMD THRESHOLDS

The BAAQMD adopted CEQA Guidelines in June 2010, which were revised in May 2011.³¹ The Guidelines include methodology and thresholds for Plan-Level and Project-Level GHG analyses. The proposed Project is evaluated under BAAQMD's Project-Level criteria.

Project-Level Greenhouse Gas Criteria

The BAAQMD has a tiered approach for assessing GHG emission impacts of a project. If a project is within the jurisdiction of an agency that has a “qualified” GHG reduction strategy, the project can assess consistency of its GHG emissions impacts with the reduction strategy outlined. The City of Walnut Creek has prepared a CAP. However, BAAQMD has not identified Walnut Creek's CAP as a “qualified” GHG reduction plan.³² However, measures in the City's CAP represent the City's GHG reduction strategy; therefore, the project is evaluated for consistency with the GHG reduction measures in this planning document.

In the absence of an applicable qualified GHG reduction strategy, BAAQMD has adopted screening criteria and significance criteria for development projects that would be applicable for the proposed Project. If a project exceeds the Guidelines' GHG screening-level sizes, the project would be required to conduct a full GHG analysis using the following BAAQMD's significance criteria:

- 1,100 MT of CO₂e per year; or
- 4.6 MT of CO₂e per service population (SP).

Land use development projects include residential, commercial, industrial, and public land use facilities. Direct sources of emissions may include on-site combustion of energy, such as natural gas used for heating and cooking, emissions from industrial processes (not applicable for most land use development projects), and fuel combustion from mobile sources. Indirect emissions are emissions produced off-site from energy production, water conveyance due to a project's energy use and water consumption, and non-biogenic emissions from waste disposal.

³¹ BAAQMD's CEQA Guidelines were reposted without the screening and significance thresholds tables in 2012 after the March 5, 2012, trial court ruling in *California Building Industry Association v. Bay Area Air Quality Management District* (Superior Court Case No. RG10548693). However, on August 13, 2013, the Court of Appeals reversed the trial court ruling and found that promulgation of thresholds of significance by a public agency is not a “project” subject to CEQA review. However, the California Supreme Court recently granted limited review of the case, so BAAQMD has not reinstated its previously adopted thresholds. Although BAAQMD is still not recommending its original thresholds, the thresholds are supported by appropriate studies and analysis (see <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>). Accordingly, pursuant to its discretion under State CEQA Guidelines section 15064 (b) (“lead agencies may exercise their discretion on what criteria to use”) and the recent holding in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 335-336 (“The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data.”), the City has decided to apply the BAAQMD CEQA thresholds to the Project.

³² CEQA Guidelines Section 15185.5, Tiering and Streamlining the Analysis of Greenhouse Gas Emissions, states that at a minimum, a plan for the reduction of GHG emissions would need to include: “1) An inventory of GHG emissions from both existing and projected over a specified time period; 2) A target level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable; 3) To identify and analyze the GHG emissions resulting from specific actions or categories within the geographic area; 4) To specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level; and 5) Be adopted in a public process following environmental review.”

GREENHOUSE GAS EMISSIONS

Biogenic CO₂ emissions are not included in the quantification of a project's GHG emissions, because biogenic CO₂ is derived from living biomass (e.g., organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels. Although GHG emissions from waste generation are included in the GHG inventory for the proposed Project, the efficiency threshold of 4.6 MTCO_{2e} per service population identified above does not include the waste sector and therefore are not considered in the evaluation.

BAAQMD does not have thresholds of significance for construction-related GHG emissions, but requires quantification and disclosure of construction-related GHG emissions. However, GHG emissions from construction activities are short term and therefore not assumed to significantly contribute to cumulative GHG emissions impacts of the proposed Project.

4.7.3 IMPACT DISCUSSION

4.7.3.1 METHODOLOGY

GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2. Transportation emissions are based on trip generation and VMT provided by Fehr & Peers. Construction emissions are based on the construction schedule, preliminary list of construction equipment, demolition volumes, and haul volumes provided by the applicant.

This section discusses the GHG emissions impacts of the proposed Project. This discussion is organized by and responds to each of the potential impacts identified in the Standards of Significance.

GHG-1	The Project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment.
--------------	--

A project does not generate enough GHG emissions on its own to influence global climate change; therefore, the GHG chapter measures a project's contribution to the cumulative environmental impact. The development contemplated by the proposed Project would contribute to global climate change through direct emissions of GHG from on-site area sources and vehicle trips generated by the project, and indirectly through off-site energy production required for on-site activities, water use, and waste disposal. Annual GHG emissions were calculated for construction and operation of the Project. BAAQMD does not have thresholds of significance for construction-related GHG emissions. GHG emissions from construction activities are short term and therefore not assumed to significantly contribute to cumulative GHG emissions impacts of the proposed Project. Construction emissions (total and amortized over a 30-year duration) are provided for informational purposes. The total and net increases in GHG emissions associated with the Project are shown in Table 4.7-4.

As shown in this table, the net increase GHG emissions generated by the proposed Project would not exceed the bright-line significance criteria of 1,100 MTCO_{2e}. Additionally, GHG emissions associated with operation of the proposed Project were compared to the efficiency metric of 4.6 MTCO_{2e}/SP/yr. The proposed Project would

GREENHOUSE GAS EMISSIONS

generate 2.1 MTCO₂e/SP/yr and would not exceed the efficiency criteria. Consequently, GHG emissions impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

TABLE 4.7-4 PROJECT GREENHOUSE GAS EMISSIONS INVENTORY

Pollutant	GHG Emissions (MTCO ₂ e/Year)		
	Existing	Project	Change in Emissions
Total Construction	NA	1,561	1,561
30-Year Amortized Construction	NA	52	52
Area Sources	<1	2	2
Energy Use	44	415	371
Mobile Sources	75	361	286
Waste Generation	6	37	32
Water/Wastewater	4	27	24
Total	129	843	714
Total without Waste Generation ^a	124	806	683
MTCO ₂ e/Service Population (SP) ^b	2.9	2.1	—
Threshold	NA	4.6	1,100
Exceeds Threshold	NA	No	No

^a Waste emissions are not included in the per capita emissions computation. BAAQMD did not include solid waste emissions when developing the per capita significance thresholds. However, if these emissions are included in the analysis for the existing, existing emissions would be 130 MTCO₂e/yr and per capita emissions would be 3.0 MTCO₂e/SP/yr; for the Project, Project emissions would be 843 MTCO₂e/yr and per capita emissions would be 2.2 MTCO₂e/SP/yr.

^b Service population (SP) is based on 43 residents (existing) and 381 residents (Project).

Source: CalEEMod 2013.2.2. Trip generation and VMT based on data provided by Fehr & Peers.

GREENHOUSE GAS EMISSIONS

GHG-2	The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.
-------	--

CARB's 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 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 32.³³ The revised BAU 2020 forecast shows that the State would have to reduce GHG emissions by 21.6 percent from BAU without Pavley and the 33 percent RPS or 15.7 percent from the adjusted baseline (i.e., with Pavley and 33 percent RPS).³⁴

Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard, California Appliance Energy Efficiency regulations; California Building Standards (i.e., CALGreen and the 2008 Building and Energy Efficiency Standards); California Renewable Energy Portfolio standard (33 percent RPS); changes in the corporate average fuel economy standards (e.g., Pavley I and Pavley II); 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 seven years would reduce the Project's GHG emissions.

New structures would meet the 2013 Building and Energy Efficiency Standards, which become effective January 1, 2014. The 2013 Standards are 25 percent more energy efficient than the 2008 standards for residential buildings while the 2008 standards were 15 percent more energy efficient than the 2005 Standards. The new buildings would also be constructed in conformance with CALGreen, which requires high-efficiency water fixtures for indoor plumbing and water efficient irrigation systems. The proposed Project would not conflict with statewide programs adopted for the purpose of reducing GHG emissions. Impacts would be *less than significant*.

MTC's Plan Bay Area

To achieve MTC's sustainable vision for the Bay Area, the Plan Bay Area land use concept plan for the region concentrates the majority of new population and employment growth within the region in PDAs. PDAs are transit-oriented, infill development opportunity areas within existing communities. Overall, well over two-thirds of all regional growth by 2040 is allocated within PDAs. PDAs are expected to accommodate 80 percent (or over 525,570 units) of new housing and 66 percent (or 744,230) of new jobs.³⁵ Consequently, an overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth in outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle VMT and associated GHG emissions reductions.

³³ California Air Resources Board (CARB), 2008. *Climate Change Scoping Plan, a Framework for Change*.

³⁴ California Air Resources Board (CARB), 2012. Status of Scoping Plan Recommended Measures. http://www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf.

³⁵ Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), 2013. *Plan Bay Area, Strategy for a Sustainable Region*.

GREENHOUSE GAS EMISSIONS

The Project Site is within the Walnut Creek West Downtown PDA. The Project would be consistent with the overall goals of the MTC Plan Bay Area because it would increase land use intensity proximate to major transportation infrastructures, including the BART station, within this PDA. Existing pedestrian facilities are available on both sides of Lacassie Avenue, Ygnacio Valley Road, and North California Boulevard. However, there is a gap in the sidewalk fronting the Project on Lacassie Avenue. Crosswalks are provided on all four approaches of the intersections adjacent the Project site, with the exception of the Ygnacio Valley Road/Oakland Boulevard intersection, which has crosswalks on three legs of the intersection (except the westbound leg). The Walnut Creek BART Station is located within walking distance of the Project site and is accessible by walking or biking from the Project site. To facilitate use of alternative transportation, the Project would improve pedestrian/bike access by constructing a 10-foot sidewalk along the Lacassie frontage. As identified in the Traffic Impact Analysis prepared for the Project, use of alternative modes of transportation would reduce the trip generation of the Project. Therefore, the proposed Project is consistent with land use concept plan for the City of Walnut Creek identified in the Plan Bay Area to reduce region-wide VMT. Therefore, impacts would be *less than significant*.

Local Greenhouse Gas Reduction Plans

The City of Walnut Creek prepared a CAP to reduce community-wide and government GHG emissions. The measures identified in the City’s CAP represent the City’s actions to achieve the GHG reduction targets of AB 32 and the long-term goals of Executive Order S-03-05. A consistency analysis of the Project to the applicable community-wide actions in the City’s CAP is shown in Table 4.7-5. As identified in the table, the proposed Project is consistent with the City’s CAP and therefore, impacts are *less than significant*.

The proposed Project would require incorporation of energy efficiency and alternative transportation design features in order to ensure that the Project would not conflict with plans adopted for the purpose of reducing GHG emissions.

Significance Without Mitigation: Less than significant.

4.7.4 CUMULATIVE IMPACTS

GHG-3	The Project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact with respect to GHG emissions.
--------------	--

As described above, GHG emissions related to the proposed Project are not confined to a particular air basin but are dispersed worldwide. The global increase in GHG emissions that has occurred and will occur in the future is the result of the actions and choices of individuals, businesses, local governments, states, and nations. Therefore, the analysis in Section 4.7.3, Impact Discussion, addresses cumulative impacts. Impact GHG-1 identifies that the proposed Project would not represent a substantial increase in GHG emissions. These GHG emissions would not exceed the BAAQMD thresholds and impacts would be *less than significant*.

GREENHOUSE GAS EMISSIONS

Existing federal, State, and local regulations and policies, including the City’s GHG Reduction Program, described throughout this chapter serve to reduce GHG emissions. Continued compliance with these regulations and implementation of existing regulations would reduce impacts to the maximum extent practicable.

Significance Without Mitigation: Less than significant.

TABLE 4.7-5 CONSISTENCY WITH CITY OF WALNUT CREEK’S COMMUNITY-WIDE GREENHOUSE GAS REDUCTION MEASURES

Measure #	Applicable Measures	Consistency
EU 3.1	Green Building Ordinance. Adopt CALGreen Tier 1 by 2014 to exceed Title 24 energy efficiency standards by 15%, and adopt CALGreen Tier 2 by 2017 to exceed Title 24 energy efficiency standards by 30%.	These standards are directed at the City of Walnut Creek to take action to adopt CALGreen standards by certain timeframes, but are not directed at individual projects. Tier 1 is currently voluntary in the City of Walnut Creek. The proposed Project would be constructed to achieve the 2013 Building and Energy Efficiency Standards. The 2013 Building and Energy Efficiency Standards are 25 percent more energy efficient for residential buildings than the 2008 standards, which are 15 percent more energy efficient than the 2005 standards. Because the proposed Project complies with current requirements, it is consistent with this measure.
EU 3.2	Urban Forestry. Increase tree cover throughout the city, with special emphasis on shading east and west walls of structures and parking lots.	The proposed Project requires a Site Development Permit and would necessitate review by the Design Review Commission for landscaping and irrigation. Review of the proposed Project by the Design Review Commission would ensure sufficient tree coverage, consistent with the Walnut Creek Climate Action Plan, is provided.
EU 4.1	Water Conservation. Work with EBMUD and CCWD to ensure that the Walnut Creek community achieves regional and statewide water reduction targets, including a 20% reduction as established by the State’s 20X2020 plan.	This measure directs the City to work with EBMUD and CCWD to achieve reduction targets, so is not directly applicable to individual projects. However, it should be noted that the proposed Project is required to adhere to the current standards for indoor and outdoor plumbing and landscape water efficiency in accordance with California Building Code.
TLU 1.1	Low-Emission Vehicle Facilities. Facilitate the use of low-emission vehicles by coordinating with regional and state agencies for region-wide low-emission vehicle infrastructure improvements and networks.	Measure TLU 1.1 requires that the City of Walnut Creek coordinate with regional and state agencies to implement region-wide infrastructure improvements or networks. It is not intended to require action on a project level, so the proposed Project is consistent with this Measure.
TLU 1.2	Transportation Demand Management (TDM). Promote ridesharing and TDM programs with the CMA and 511.org to reduce use of traditional motor vehicles. Create a citywide car-sharing program to achieve further reductions in vehicle miles traveled.	The proposed Project is located adjacent to the BART parking structure, which is a potential key location to promote the citywide car sharing program identified in Measure TLU 1.2. The City is working with BART to carry out Measure TLU 1.2. By increasing residential density in close proximity to BART, the proposed Project will help to reduce use of traditional motor vehicles and is consistent with Measure TLU 1.2.
TLU 1.3	Traffic Calming. Install street design features such as landscaped medians and roundabouts in order to reduce vehicle speeds, volumes,	The measure description in the City of Walnut Creek’s CAP identifies the creation of incentives for developers that provide pedestrian and bicycle-friendly facilities. The project site is

GREENHOUSE GAS EMISSIONS

TABLE 4.7-5 CONSISTENCY WITH CITY OF WALNUT CREEK’S COMMUNITY-WIDE GREENHOUSE GAS REDUCTION MEASURES

Measure #	Applicable Measures	Consistency
	and idling.	designed to ensure internal connectivity between the residential, office, and retail areas to the BART transit station. In addition, the project site plans show pedestrian connectivity from the project site to off-site areas.
TLU 1.4	Anti-Idling Efficient Traffic Signal Timing. Reduce vehicle emissions through an effective traffic signal synchronization program.	MTC has recently completed traffic synchronization improvements in Walnut Creek through the Program for Arterial System Synchronization (PASS) project. Traffic synchronization was conducted in 2010 and 2011. Traffic signals in the City are synchronized through the City’s Intelligent Transportation System (ITS) and signals along Ygnacio Valley Road are operated with adaptive technology. The City Traffic Engineer would review project-related circulation and improvement plans to ensure local roadways continue to operate efficiently.
TLU 2.1	Smart Growth. Achieve higher-density, mixed-use, infill development through updated regulations and new incentives.	The proposed Project is an infill project that would increase density at the project site.
TLU 2.3	Affordable Housing. Support and expand affordable housing development through implementation of the City’s Housing Element and new programs.	The project applicant is required to comply with the City’s Inclusionary Housing Ordinance, which currently requires payment of an in-lieu for rental apartments or inclusion of affordable units on-site.
TLU 3.1	Bicycle Planning. Implement the City’s Bicycle Master Plan and incorporate bicycle lanes and routes into street systems, new subdivisions, and large developments.	To ensure consistency with Measure TLU 3.1, the project would require circulation plans to identify bicycle storage and connectivity to off-site bicycle lanes and routes to the satisfaction of the City of Walnut Creek. As previously stated the proposed Project will dedicate a 5 foot bike lane along Lacassie Avenue and the site is accessible via the existing bicycle routes on Ygnacio Valley Road and Oakland Boulevard and is in close proximity to existing bicycle lanes on North California Boulevard. Additionally, per the Walnut Creek Bicycle Plan, future bicycle lanes and routes are proposed to connect these existing routes and lanes to a wider network.
TLU 3.3	Bicycle Parking. Increase the number and locations of bicycle parking by requiring new development or redevelopment to provide adequate short- and long-term bicycle parking facilities.	The proposed Project would provide 22 bicycle parking stalls, as required by the City of Walnut Creek.

Source: Walnut Creek, City of. 2012, April. City of Walnut Creek Climate Action Plan.

4.7.5 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

The proposed Project would not result in any significant Project-specific or cumulative impacts related to greenhouse gas emissions and, therefore, no mitigation measures are required.

GREENHOUSE GAS EMISSIONS