

4.9 GREENHOUSE GAS EMISSIONS

This section describes the potential effects on greenhouse gas (GHG) emissions associated with implementation of The Village at Loomis Project (proposed project).

A comment letter from the Placer County Air Pollution Control District (PCAPCD) was received in response to the Notice of Preparation (NOP). The comment letter notes that impacts from GHG emissions/climate change should be addressed in the environmental impact report (EIR). The letter also includes recommended sources for adopted thresholds to assess the proposed project's GHG-related impacts and potential to interfere with GHG reduction goals. The NOP and comments received in response to the NOP are provided in Appendix A.

The information provided in this section was obtained from review of the following documents:

- *Town of Loomis General Plan* (Town of Loomis 2001)
- California Emissions Estimator Model (CalEEMod) modeling for the proposed project (provided in Appendix G)

4.9.1 Environmental Setting

The Earth's climate is determined by the balance between energy received from the sun and energy emitted back to space from the Earth and its atmosphere. Certain gases in the atmosphere, such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), water vapor, and others, trap some of the outgoing energy, retaining heat in the Earth's atmosphere. Such gases are considered GHGs. The best understood GHGs emitted by human activities are CO₂, CH₄, N₂O, and certain fluorinated compounds. The increase in atmospheric concentrations of GHGs has resulted in more heat being held within the atmosphere, which is the accepted explanation for global climate change.

Changes in GHG emissions are influenced by many long-term factors, including population and economic growth, land use, energy prices, technological changes, and interannual temperatures. On an annual basis, combustion of fossil fuels, which accounts for most GHG emissions in the United States, generally fluctuates in response to changes in general economic conditions, energy prices, weather, and the availability of nonfossil alternatives.

Global Warming Potential

Global warming potential (GWP) is one type of simplified index (based on radiative properties) that can be used to estimate the potential future impacts of emissions of various gases. According to the U.S. Environmental Protection Agency (EPA), the GWP of a gas, or aerosol, to trap heat in the atmosphere is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas (EPA 2013).

The reference gas for comparison is CO₂. GWP is based on a number of factors, including the heat-absorbing ability of each gas relative to that of CO₂, as well as the decay rate of each gas relative to that of CO₂. The GWP of each gas is determined by comparing the radiative forcing associated with emissions of that gas versus the radiative forcing associated with emissions of the same mass of CO₂. CH₄ gas, for example, is estimated by the EPA to have a comparative GWP 21 times greater than that of CO₂, as shown in Table 4.9-1.

Table 4.9-1
Global Warming Potential and Atmospheric Lifetimes of Select GHGs

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
CO ₂	50–200	1
CH ₄	12±3	21
N ₂ O	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: CF ₄	50,000	6,500
PFC: C ₂ F ₆	10,000	9,200
SF ₆	3,200	23,900

Source: EPA 2013.

HFC = hydrofluorocarbon; PFC = perfluorocarbon; CF₄ = tetrafluoromethane; C₂F₆ = hexafluoroethane; SF₆ = sulfur hexafluoride

At the extreme end of the scale, sulfur hexafluoride (SF₆) is estimated to have a comparative GWP 23,900 times that of CO₂. The “specified time horizon” is related to the atmospheric lifetimes of such GHGs, which are estimated by the EPA to vary from 50 to 200 years for CO₂ to 50,000 years for tetrafluoromethane. Longer atmospheric lifetimes allow GHG to build up in the atmosphere; therefore, longer lifetimes correlate with the GWP of a gas. The common indicator for GHGs is expressed in terms of CO₂ equivalents (CO₂E) (EPA 2013).

According to the EPA, the United States accounts for nearly one-fifth of the total global emissions of CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and SF₆. The primary GHG emitted by human activities is CO₂, which accounted for 83% of U.S. GHG emissions in 2009. The next largest components, CH₄ and N₂O, represented 10% and 4% of the total U.S. GHG emissions in 2009, respectively. The primary sources of CH₄ emissions include domestic livestock sources, decomposition of wastes in landfills, and releases of natural gas systems, coal mine seepage, and manure management. The main human activities producing N₂O are agricultural soil management, fuel combustion in motor vehicles, nitric acid production, manure management, and stationary fuel combustion (EPA 2013).

Emissions of GHG by economic sector indicate that energy-related activities account for the majority of U.S. emissions. Electricity generation is the largest single-source, which accounted for 32% of all U.S. GHG emissions in 2009. Transportation is the second largest source, followed by industrial activities. The agricultural, commercial, and residential sectors account for the remainder of emissions. Emissions of GHG are offset by uptake of carbon and sequestration in forests, trees in urban areas, agricultural soils, and landfilled yard trimmings and food scraps (EPA 2013).

Uncertainty Regarding Global Climate Change

The scientific community has largely agreed that the Earth is warming and that humans are contributing to that change (IPCC 2007). However, the Earth's climate is composed of many complex mechanisms, including ocean currents, cloud cover, the jet stream, and other pressure/temperature weather guiding systems. These systems are, in turn, influenced by changes in ocean salinity, changes in the evapotranspiration of vegetation, the reflectivity (albedo) of ground cover, and numerous other factors. Some changes have the potential to reduce climate change, while others could form a feedback mechanism that would speed the warming process beyond what is currently projected. The climate system is inherently dynamic; however, the overall trend is toward a gradually warming planet.

Global Climate Change Analysis

Analyzing global warming presents several unique challenges, largely because of its “global” nature. Global warming presents the considerable challenge of analyzing the relationship between local and global activities. Typically, air quality analyses examine the project-specific impacts that a particular project is likely to generate on a local or regional level. With regard to global warming, however, the magnitude of global warming effects is so substantial and the contribution of an individual project to global warming is so small that direct impacts would be highly unlikely. Accordingly, the issue of global climate change is different from any other areas of air quality impact analysis. A global climate change analysis must be conducted on a global level, rather than the typical local or regional setting, and requires consideration of not only emissions from the proposed project under consideration, but also the extent of the displacement, translocation, and redistribution of emissions. In the usual context, where air quality is linked to a particular location or area, it is appropriate to consider the creation of new emissions in that specific area to be an environmental impact whether or not the emissions are truly “new” emissions to the overall globe. In fact, the approval of a new developmental plan or project does not necessarily create new automobile drivers, which are the primary source of a land use project's emissions. Rather, a new land use project may simply redistribute existing mobile emissions; accordingly, the use of models that measure overall emissions increases without accounting for existing emissions will substantially overstate the impact of the development project on global warming. Thus, an accurate analysis of GHG emissions substantially differs

from other air quality impacts, and the addition of redistributed emissions to a new locale can make a substantial difference to overall air quality in that area.

4.9.2 Regulatory Setting

GHG emissions are monitored through the efforts of various international, federal, state, regional, and local government agencies. The agencies work jointly and individually to reduce GHG emissions through legislation, regulations, planning, policy making, education, and a variety of programs. The agencies responsible for regulating and improving the air quality within the Town of Loomis (Town) are discussed in the following text.

International Regulations

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

Federal Regulations

U.S. Environmental Protection Agency

The EPA is responsible for enforcement of the National Ambient Air Quality Standards for atmospheric pollutants. The EPA regulates emission sources that are under the exclusive authority of the federal government, including emissions of GHGs. To track the national trend in emissions and removals of GHG since 1990, the EPA develops the official U.S. GHG inventory each year. The national GHG inventory is submitted to the United Nations in accordance with the Framework Convention on Climate Change. The EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was signed into law in 1970. Congress substantially amended the CAA in 1977 and again in 1990.

Federal Clean Air Act

On December 7, 2009, the EPA issued findings under Section 202(a) of the CAA, concluding that GHGs are pollutants that could endanger public health. Under the so-called Endangerment Finding, the EPA found that the current and projected concentrations of the six key, well-mixed GHGs—CO₂, CH₄, N₂O, PFCs, SF₆, and HFCs—in the atmosphere threaten the public health and welfare of current and future generations. These findings do not, by themselves, impose any requirements on industry or other entities.

State Regulations

Assembly Bill 32

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Climate Solutions Act of 2006. AB 32 delegated the authority for its implementation to the California Air Resources Board (CARB) and directs CARB to enforce the statewide cap that would begin phasing in by 2012. Among other requirements, AB 32 required CARB to (1) identify the statewide level of GHG emissions in 1990 to serve as the emissions limit to be achieved by 2020, and (2) develop and implement a scoping plan to be implemented by January 1, 2012. Accordingly, CARB has prepared the Climate Change Scoping Plan (scoping plan) for California, which was approved in 2008. The scoping plan provides the outline for actions to reduce California's GHG emissions. Based on the reduction goals called for in the 2008 scoping plan, a 29% reduction in GHG levels relative to a business-as-usual (BAU) scenario would be required to meet 1990 levels by 2020. A BAU scenario is a baseline condition based on what could or would occur on a particular site in the year 2020 without implementation of a proposed project or any required or voluntary GHG reduction measures (CARB 2008). A project's BAU scenario is project- and site-specific and varies from project to project. For example, if a project is proposed on a site that has existing operations that are currently emitting GHGs, the current GHG emissions would be the baseline or BAU condition and would be compared to the proposed project's GHG emissions (i.e., the BAU levels would be subtracted from the proposed project levels to determine the proposed project's net increase in GHG emissions).

In 2011, the baseline, or projected 2020 BAU, level for the scoping plan was revised to account for the economic downturn and state regulation emission reductions (i.e., Pavley, Low Carbon Fuel Standard, and Renewable Portfolio Standard). Again, the projected 2020 BAU condition is project- and site-specific and varies. The projected 2020 BAU scenario is based on what could or would occur on a particular site in the year 2020 without implementation of a proposed project or consideration of any state regulation emission reductions or voluntary GHG reduction measures. Accordingly, the scoping plan emission reduction target from projected 2020 BAU levels required to meet 1990 levels by 2020 was modified from 29% to 21% (where projected 2020 BAU levels are based on 2010 levels) or 16% (where the projected 2020 BAU levels are based on 2010 levels including accounting for percentages of emission reductions captured for implementation of AB 1493 and the Renewable Portfolio Standard). The amended scoping plan was reapproved August 24, 2011. The first update to the scoping plan was approved on May 22, 2014 (CARB 2014).

Assembly Bill 1493

AB 1493, known as Pavley, was enacted on July 22, 2002. AB 1493 requires that CARB develop and adopt regulations that achieve “the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state.” On June 30, 2009, the EPA granted a waiver of CAA preemption to California for the state’s GHG emission standards for motor vehicles, beginning with the 2009 model year. Pursuant to the CAA, the waiver allows for the state to have special authority to enact stricter air pollution standards for motor vehicles than the federal government’s. CARB estimates that the regulation would reduce GHG emissions from the light-duty passenger vehicle fleet by an estimated 18% in 2020 and by 27% in 2030.

Executive Order S-3-05

In 2005, Governor Schwarzenegger signed Executive Order S-3-05, which established total GHG emission targets. Specifically, emissions are to be reduced to year 2000 levels by 2010, 1990 levels by 2020, and to 80% below 1990 levels by 2050. The Executive Order directed the secretary of the California Environmental Protection Agency to coordinate a multiagency effort to reduce GHG emissions to the target levels. The secretary is also directed to submit biannual reports to the governor and state legislature describing (1) progress made toward reaching the emission targets, (2) impacts of global warming on California’s resources, and (3) mitigation and adaptation plans to combat these impacts.

To comply with the Executive Order, the secretary of the California EPA created a Climate Action Team made up of members from various state agencies and commissions. In March 2006, the Climate Action Team released its first report. In addition, the Climate Action Team has released several white papers addressing issues pertaining to the potential impacts of climate change on California.

Executive Order S-01-07

On January 18, 2007, Governor Schwarzenegger signed Executive Order S-01-07, which mandates that a statewide goal be established to reduce the carbon intensity of California’s transportation fuels by at least 10% by 2020. The Executive Order also requires that a Low Carbon Fuel Standard for transportation fuels be established for California.

Executive Order B-30-15

On April 29, 2015, Governor Jerry Brown signed Executive Order B-30-15, setting an interim target to cut California’s GHG emissions to 40% below 1990 levels by 2030. The new interim target is consistent with the recommendation of CARB in its first update to the scoping plan (2014)

(discussed previously under AB 32). The Executive Order requires CARB to update the scoping to express the 2030 target in terms of million metric tons of CO₂E. All state agencies with jurisdiction over GHG emission sources must implement measures to achieve the 2030 and 2050 targets. In addition, the California Natural Resources Agency is to update the state's climate adaptation strategy, the Safeguarding California Plan, every 3 years and to ensure that its provisions are fully implemented. The Safeguarding California Plan will help California adapt to climate change by identifying vulnerabilities by sector (e.g., vulnerabilities to the water supply, the energy grid, the transportation network); outlining primary risks of these vulnerabilities to people, property, and natural resources; specifying priority actions needed to reduce the risks; and identifying lead agencies to spearhead the adaptation efforts for each sector. Each sector was then responsible for preparing an implementation plan outlining adaptation actions, and must report back to the Natural Resources Agency by June 2016 on the actions taken. The Executive Order also requires state agencies to take climate change into account in their planning and investment decisions and employ full life-cycle cost accounting to evaluate investments and alternatives.

Senate Bill 375

In September 2008, Governor Schwarzenegger signed Senate Bill (SB) 375, which is intended to build on AB 32 by attempting to control GHG emissions by curbing sprawl. SB 375 enhances CARB's ability to reach goals set by AB 32 by directing CARB to develop regional GHG emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035. In addition, CARB will work with the state's 18 metropolitan planning organizations, including the Sacramento Area Council of Governments, to align their regional transportation, housing, and land use plans and to prepare a Sustainable Communities Strategy to reduce the amount of vehicle miles traveled in their respective regions and demonstrate the region's ability to attain its GHG reduction targets. SB 375 provides incentives for creating walkable and sustainable communities and revitalizing existing communities and allows home builders to get relief from certain environmental reviews under the California Environmental Quality Act (CEQA) if they build projects consistent with the new sustainable community strategies. Furthermore, SB 375 encourages the development of alternative transportation options, which will reduce traffic congestion. The Sacramento Area Council of Governments adopted its Sustainable Communities Strategy in April 2012.

California Code of Regulations, Title 17, Sections 95100–95133

On December 6, 2007, CARB approved a regulation mandating the reporting of GHG emissions from major sources, pursuant to the California Global Warming Solutions Act of 2006. California Code of Regulations, Title 17, Sections 95100–95133, includes mandatory reporting that applies to major sources, including cement plants, refineries, and electricity generating facilities.

California Building Code

The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The CBC is adopted every 3 years by the California Building Standards Commission (CBSC). In the interim, the CBSC adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may amend a CBC standard if the jurisdiction makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

Green Building Standards

In essence, green buildings standards are indistinguishable from any other building standards. Both are contained in the CBC and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance (CBSC 2010).

AB 32, which mandates the reduction in GHG emissions in California to 1990 levels by 2020, increased the urgency around the adoption of green building standards. In the scoping plan for the implementation of AB 32, CARB identified energy use as the second largest contributor to California's GHG emissions, constituting roughly 25% of all such emissions. In recommending a green building strategy as one element of the scoping plan, CARB estimated that green building standards would reduce GHG emissions by approximately 26 million metric tons of CO₂E by 2020 (CBSC 2010).

2010 Green Building Code

On January 12, 2010, the CBSC adopted the 2010 California Green Building Standards Code, otherwise known as the CALGreen Code. In addition to the new statewide mandates, CALGreen encourages local governments to adopt more stringent voluntary provisions, known as Tier 1 and Tier 2 provisions, to further reduce emissions, improve energy efficiency, and conserve natural resources. If a local government adopts one of the tiers, the provisions become mandated for all new construction within that jurisdiction. The most significant features of the 2010 CALGreen Code include the following (CBSC 2010):

- Twenty percent mandatory reduction in indoor water use, with voluntary goal standards for 30%, 35%, and 40% reductions. Separate indoor and outdoor water meters to measure nonresidential buildings' indoor and outdoor water use with a requirement for moisture-sensing irrigation systems for larger landscape projects

- Diversion of 50% of construction waste from landfills, increasing voluntarily to 65% and 75% for new homes and 80% for commercial projects
- Mandatory periodic inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies
- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board

CEQA Guidelines Amendments of 2010

The California Natural Resources Agency, with input from the Governor’s Office of Planning and Research, amended the CEQA Guidelines (14 CCR 15000 et seq.), effective March 18, 2010, to provide guidance for public agencies regarding the analysis and mitigation of GHG emissions and the effects of GHG emissions in draft CEQA documents. Legal principles for determining the significance of impacts from GHG emissions are provided in the amendments in addition to other directives on determining thresholds of significance. These CEQA Guidelines suggest a careful judgment be made by the lead agency that should make a good-faith effort, based on available information to describe, calculate, or estimate the amount of GHG emissions resulting from a project. A lead agency can use a model or methodology to quantify GHG emissions from a project or rely on a qualitative analysis or performance-based standards. When assessing the significance of impacts from GHG emissions on the environment, lead agencies can consider the extent to which the proposed project may increase or reduce GHG as compared to the existing environmental setting, whether the proposed project emissions exceed a threshold of significance determined applicable to the proposed project and/or the extent to which the proposed project complies with adopted regulations or requirements to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. When adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.

If GHG emissions of a project are determined to be significant, feasible means of mitigating GHG emissions may include the following:

- Measurement of the reduction of emissions required as part of the lead agency’s decision
- Reductions in emissions resulting from the project through project features, design, or other measures
- Off-site measures, including offsets, to mitigate a project’s emissions
- Measures that sequester GHG gases

If a GHG reduction plan, ordinance, regulation, or other similar plan is adopted, mitigation may include project-by-project measures or specific measures or policies found in the plan that reduces the cumulative effect of emissions.

Local Regulations

Placer County Air Pollution Control District

The PCAPCD's CEQA Air Quality Handbook recommends that the threshold of significance for GHG emissions selected by lead agencies be related to compliance with AB 32 reduction goals (PCAPCD 2012). Thus, in accordance with the revised 2020 reduction goals set forth in the amended 2011 scoping plan, the PCAPCD recommends a quantitative GHG analysis for development projects to demonstrate that a project would promote sustainability and implement operational GHG emission reduction strategies that would reduce GHG emissions to meet the statewide GHG emission reduction target of 21% (where projected 2020 BAU levels are based on 2010 levels) or 16% (where the projected 2020 BAU levels are based on 2010 levels, including accounting for percentages of emission reductions captured for implementation of Pavley and Renewable Portfolio Standard) (see Appendix C of the CEQA Air Quality Handbook; PCAPCD 2012).

PCAPCD and other Air Pollution Control Districts in the Sacramento region developed a recommended GHG threshold of 1,100 metric tons per year. Emission reduction measures for GHG could include compliance with local, state, or federal plans or strategies for GHG reductions, on-site and off-site mitigation recommendations from the Office of the Attorney General, and project design features.

Town of Loomis General Plan

The Town's General Plan provides goals and policies adopted by the Town to help guide the direction of future development. The following are goals and policies from the General Plan that are relevant to the GHG impacts of the proposed project (Town of Loomis 2001):

Community Development and Land Used Element: Community Design and Character

Policy 5: Design projects to minimize the need to use automobiles for transportation.

- a. Emphasize pedestrian and bicycle circulation in all projects.
- b. Give individual attention to each mode of transportation with potential to serve a project and the Town, including pedestrian, bicycle, transit, rail, and automobile.
- c. Plan for trail systems, where appropriate to connect areas of development with natural and recreational resources.

Circulation Element: Issues, Goals, Policies and Implementation Measures – Bicycle Facilities

Policy 1: The Town shall promote bicycle travel, as appropriate, and shall pursue all available sources of funding for the development and improvement of bicycle facilities.

Policy 2: Bicycle facilities shall be provided in compliance with the *Placer County Bikeways Master Plan* (Placer County Transportation Commission 1988) or subsequent amended versions of that document, as well as on other appropriate routes at the discretion of the Town Council.

Circulation Element: Issues, Goals, Policies and Implementation Measure – Transit Service

Policy 1: The Town will promote and support a safe, efficient, and coordinated public transit system that meets residents’ needs, reduces congestion, improves the environment, and helps provide a viable non-automotive means of transportation in and through the Town.

4.9.3 Impacts

This section identifies and discusses the environmental impacts resulting from the proposed project and suggests mitigation measures to reduce the level of impact. A detailed discussion of mitigation measures is included in Section 4.9.4, Mitigation Measures.

Methods of Analysis

The CalEEMod modeling program was used to estimate the proposed project’s GHG emissions from all project sources, including in-home energy use, water consumption, and wastewater generation; mobile source emissions; and landfill emissions associated with solid waste generated at the site.

Significance Criteria

The significance criteria for evaluating GHG impacts associated with the implementation of the proposed project are as follows. Would the proposed project:

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

Impact Discussion

IMPACT 4.9-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

SIGNIFICANCE: Significant

MITIGATION: Mitigation Measure 4.9

RESIDUAL SIGNIFICANCE: Significant and Unavoidable

Dudek prepared an analysis of GHG emissions for the proposed project using CalEEMod; the analysis and modeling output files are provided in Appendix G to this EIR. As shown in Table 4.9-2, the proposed project would generate between 251 and 1,811 tons per year of GHGs during project construction and 8,060 tons per year of GHGs during project operation. This amount reflects reductions in emissions attributed to compliance with the 2014 Title 24 requirements (the unmitigated values in the CalEEMod modeling reflects compliance with the 2008 Title 24 requirements), use of energy-efficient lighting (to reduce overall lighting energy demands by 10%), and the characteristics of the proposed project that reduce vehicle miles traveled (mixture of land uses, proximity to downtown Loomis, inclusion of a diversity of housing including multifamily units), installation of energy-efficient appliances, and provisions to reduce water demand. **Mitigation Measure 4.9** establishes requirements to ensure that these measures are implemented during project construction.

**Table 4.9-2
GHG Emissions (tons per year)**

Source	GHG Emissions	
	Unmitigated	Mitigated
Construction 2016	581.16	N/A
Construction 2017	1,811.146	N/A
Construction 2018	747.216	N/A
Construction 2019	251.15	N/A
<i>Operational Emissions</i>		
Area sources	5.40	5.40
Energy demand	1,830.17	1,665.01
Mobile sources	6,800.41	6,085.27
Waste	209.07	209.07
Water consumption	105.01	96.01
Total Operational	8,950.06	8,060.76
<i>Air Pollution Control District Thresholds</i>		<i>1,100</i>

As the proposed project would generate more than 1,100 tons per year of GHG emissions during construction in the year 2017 and throughout project operation, the proposed project would have a **significant** impact related to GHG emissions. The proposed project has incorporated design measures to minimize GHG emissions. Further reductions could be achieved by increasing the energy efficiency of each home and business, as required by **Mitigation Measure 4.9**. However, it would not be feasible to reduce emissions to less than 1,100 tons per year, and the impact would remain **significant and unavoidable**.

IMPACT 4.9-2:	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of greenhouse gases.
SIGNIFICANCE:	Significant
MITIGATION:	Mitigation Measure 4.9
RESIDUAL SIGNIFICANCE:	Significant and Unavoidable

The Town has not adopted any plans or policies for the purpose of reducing GHG emissions. Because PCAPCD’s thresholds for GHG emissions were developed in concert with other Air Pollution Control Districts with the intention of reducing GHG emissions to meet state and federal requirements, compliance with the PCAPCD’s GHG threshold of 1,100 tons per year is considered compatible with regulations related to GHG emissions reductions for a project-level analysis.

As the proposed project would generate more than 1,100 tons per year of GHG emissions during construction in the year 2017 and throughout project operation, the proposed project would have a **significant** impact related to GHG emissions. The proposed project has incorporated design measures to minimize GHG emissions. Further reductions could be achieved by increasing the energy efficiency of each home and business, as required by **Mitigation Measure 4.9**. However, it would not be feasible to reduce emissions to less than 1,100 tons per year, and the impact would remain **significant and unavoidable**.

4.9.4 Mitigation Measures

- 4.9** The project shall incorporate the following requirements for all residences within the project site:
- a. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application for each residence within the approved subdivision shall show that each residence includes a whole house ceiling fan.

- b. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application for each residence within the approved subdivision shall show that each residence includes energy-efficient lighting (both indoor and outdoor).
- c. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application for each residence within the approved subdivision shall show that each residence includes Energy Star appliances (e.g., stoves, dishwashers, and any other appliances typically included with the initial installation by the builder).
- d. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application for each residence within the approved subdivision shall show that each residence includes an energy-efficient air-conditioning unit that exceeds the Seasonal Energy Efficiency Ratio by a minimum of two points at the time of building permit issuance.
- e. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application for each residence within the approved subdivision shall show that each residence includes heating, ventilation, and air conditioning duct sealing and that the ductwork shall be pressure balanced prior to the issuance of a certificate of occupancy.
- f. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application for each residence within the approved subdivision shall show that each residence shall only use programmable thermostat timers.
- g. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application for each residence within the approved subdivision shall show that each residence shall only use low-flow water fixtures, such as low-flow toilets, faucets, showers, and others.
- h. Prior to approval of Improvement Plans, the applicant shall only show energy-efficient lighting for all street, parking, and area lighting associated with the project, including all on-site and off-site lighting.

Additionally, the project shall incorporate the following requirements for all nonresidential buildings within the project site:

- i. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application shall

- show that each structure within the project includes “Energy Star” rated (or greater) roofing materials.
- j. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application shall show that each structure within the project includes energy-efficient lighting (both indoor and outdoor).
 - k. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application shall show that each structure within the project includes an energy-efficient air-conditioning unit that exceeds the minimum required Seasonal Energy Efficiency Ratio, as determined by the Federal Regional Standards for air conditioners, by at least of two points at the time of building permit issuance.
 - l. Prior to the issuance of a building permit, the plans submitted in conjunction with the building permit application shall show that each structure within the project includes heating, ventilation, and air conditioning duct sealing, and that the ductwork shall be pressure balanced prior to the issuance of a certificate of occupancy.
 - m. Prior to the issuance of a building permit, the floor plans and/or exterior elevations submitted in conjunction with the building permit application shall show that each structure within the project shall include an energy-efficient heating system.
 - n. Prior to the issuance of a building permit, the plans submitted in conjunction with the building permit application shall show that each structure within the project shall only use programmable thermostat timers.
 - o. Prior to the issuance of a building permit, the plans submitted in conjunction with the building permit application shall show that each structure shall only use low-flow water fixtures, such as low-flow toilets, faucets, showers, and others.
 - p. Prior to approval of Improvement Plans, the applicant shall only show energy-efficient lighting for all street, parking, and area lighting associated with the project, including all on-site and off-site lighting.

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