APPENDIX A:
GREENHOUSE GAS MEMO

PLACEWORKS

MEMORANDUM

DATE August 21, 2018

TO Thai-Chau Le, Planner, Environmental Planning, Planning, Building & Code Enforcement
200 E Santa Clara St, San José, CA 95113

FROM John Vang, Senior Associate
Alexis Whitaker, Project Scientist

SUBJECT Greenhouse Gas Emissions Technical Memorandum for Campbell Union High School District General Plan Amendment Project

1. Introduction

This Greenhouse Gas (GHG) Emissions Technical Memorandum evaluates the potential impacts from GHG emissions that would result from construction and operation of potential future development project of an infill, mixed-use development project on a 12.12-acre site situated between 3235 Union Avenue and 2223 Camden Avenue in western San José. This memorandum was prepared on behalf of the Campbell Union High School District (CHUSD) for the City of San José (City) to support the City's environmental documentation under the California Environmental Quality Act (CEQA). The analysis was prepared consistent with the current methodology of the Bay Area Air Quality Management District (BAAQMD).

1.1 PROJECT LOCATION

The project site is currently developed with the Camden Community Day School located at 2223 Camden Avenue and the CUHSD Administrative and Maintenance offices located at 3235 Union Avenue in the City of San José, Santa Clara County, California. The project site is assigned Assessor Parcel Numbers 414-25-001 and -020 and is designated Public/Quasi-Public (PQP) under the current *Envision San José 2040 General Plan* (General Plan). The project site is bordered by single-family homes and a church to the north, CUHSD Administrative and Maintenance offices and the California Sports Center to the east, Camden Community Center and single-family homes to the south, and single-family homes off of Camden Avenue to the west.

1.2 PROJECT DESCRIPTION

The proposed project entails an amendment to the General Plan Land Use/Transportation Diagram to facilitate potential future development of an infill, mixed-use development project that could occur in one of two scenarios. Under Scenario 1, approximately 6 acres of the project site would be redesignated as Residential Neighborhood (RN) and 3 acres would be redesignated as Combined Industrial/Commercial (CIC). Under Scenario 2, approximately 9 acres of the project site would be redesignated as CIC.

2. Greenhouse Gases and Climate Change

The primary source of GHG emissions is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and O_3—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Three of the four major GHGs that are considered pollutants are briefly described as follows:[1]

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

Other GHGs identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydro fluorocarbons, perfluorocarbons, and chlorofluorocarbons.[2]

3. Methodology

The analysis of the proposed project's GHG emissions impacts follows the guidance, methodologies, and significance thresholds in BAAQMD's *2017 California Environmental Quality Act Air Quality Guidelines*.[3] CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess project-related GHG emissions impacts. Projected-related GHG emissions are calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2.25.

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[1] 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, but part of the feedback loop rather than a primary cause of change.

[2] 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 PM emitted from burning fuels. 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. However, State and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

[3] Bay Area Air Quality Management District (BAAQMD). 2017 California Environmental Quality Act Air Quality Guidelines.

4. CEQA Thresholds

4.1 CEQA GUIDELINES APPENDIX G GREENHOUSE GAS EMISSIONS THRESHOLDS

Consistent with Appendix G of the CEQA Guidelines, the proposed project would have a significant effect on the environment with respect to GHG emissions if it would:

GHG-1 Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2 Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

4.2 BAAQMD SIGNIFICANCE THRESHOLDS

The BAAQMD is the regional air quality management agency for the San Francisco Bay Area Air Basin (SFBAAB), which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.

The BAAQMD has a tiered approach for assessing GHG emissions 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. 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 nonbiogenic emissions from waste disposal. Biogenic CO_2 emissions are not included in the quantification of a project's GHG emissions, because biogenic CO_2 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. In addition, "life cycle" emissions that would occur as a result of the project are not applicable and are not included in the analysis.[4]

[4] Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).

4.2.1 Assembly Bill 32 Goal: 2020

The BAAQMD has adopted screening criteria and significance criteria for development projects that would be applicable for the proposed project. If a project exceeds the BAAQMD Guidelines' GHG screening-level sizes, the project would be required to conduct a full GHG analysis using one of the following BAAQMD significance criteria:

- 1,100 MT of CO_2e per year.
- 4.6 MT of CO_2e per service population (SP) for year 2020.[5]

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for California: 2000 levels by 2010, 1990 levels by 2020, 80 percent below 1990 levels by 2050. Assembly Bill (AB) 32 requires the statewide GHG emission to be reduced to 1990 levels by 2020, in line with the targets established in Executive Order S-03-05. On a per-capita (per-person) basis, that means reducing the annual emissions of 14 tons of carbon dioxide for every man, woman, and child in California down to about 10 tons per person by 2020.[6] Hence, BAAQMD's per capita significance threshold is calculated based on the land use sector emissions inventory for California prepared by the California Air Resources Board (CARB) and the demographic forecasts for the State's Climate Change Scoping Plan (originally adopted in 2008, and updated as recently as 2017), herein referred to as "CARB Scoping Plan". As identified in Appendix D of the BAAQMD CEQA Guidelines the land use sector GHG emissions for 1990 were estimated by BAAQMD to be 295.53 million metric tons of CO_2 equivalent ($MTCO_2e$)[7] and the 2020 California service population was estimated to be to be 64.3 million. Therefore, the significance threshold that would ensure consistency with the GHG reduction goals of AB 32 is estimated at 4.6 metric tons of CO_2 per service population ($MTCO_2e$/SP) for year 2020.[8] Based on the updated emissions inventory prepared for 2017 update to the CARB Scoping Plan and the latest available service population data, the efficiency metric significance threshold is 5.2 $MTCO_2e$/SP for year 2020.

4.2.2 Post 2020 Efficiency Targets

For projects that would be implemented beyond year 2020, the GHG emissions reduction target is extrapolated based on the 2030 goal of Senate Bill (SB) 32 and the 2050 climate stabilization goals of Executive Order S-03-05. The plan-level GHG threshold is based on the trajectory needed as shown in Table 1 to achieve the year 2030 GHG reduction target under SB 32 (40 percent below 1990 levels by 2030) and Executive Order S-03-05 (80 percent below 1990 levels by 2050) for the horizon year of the projects.

As shown in the Table 1, the 2040 GHG estimated plan-level efficiency target would be 2.7 $MTCO_2e$/SP per year. The proposed project would be deemed to have a significant GHG emissions impact if it does

[5] The efficiency threshold for 2020 does not include the waste sector.

[6] California Air Resources Board (CARB). 2008, October. Climate Change Proposed Scoping Plan, a Framework for Change.

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

[8] Bay Area Air Quality Management District (BAAQMD). 2017 California Environmental Quality Act Air Quality Guidelines.

not meet this efficiency target. Furthermore, per the California Supreme Court ruling in *Cleveland National Forest Foundation (CNFF) v. San Diego Association of Governments (SANDAG), (2017) 3 Cal. 5th 497*, as data and methods become available, projects should evaluate consistency in meeting the year 2050 GHG reduction goal established under Executive Order S-03-05.

TABLE 1 POST-2020 GHG REDUCTION TARGETS

Scenario Year[a]	GHG Efficiency Target
CARB Scoping Plan 2030 Target	**260 MMTCO2e**
2030 Population[b]	43,939,250
2030 Employment[c]	16,454,761
2030 Service Population	60,394,011
2030 Efficiency Target	4.3 $MTCO_2e$/SP
CARB Scoping Plan 2050 Target	**86 $MMTCO_2e$**
2050 Population[b]	49,077,801
2050 Employment[c]	19,579,840
2050 Service Population	68,657,641
2050 Efficiency Target	1.3 $MTCO_2e$/SP
Estimated 2040 Target[d]	**173 $MMTCO_2e$**
2040 Population[b]	46,804,202
2040 Employment[c]	17,973,632
2040 Service Population	64,777,834
2040 Efficiency Target	2.7 $MTCO_2e$/SP

a. Source: California Air Resources Board, November, 2017 update to the CARB Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.
b. Source: California Department of Finance (CDOF), 2018, March 8, Report P-1 (County): State and County Total Population Projections, 2010-2060 (1 -year increments).http://www.dof.ca.gov/Forecasting/Demographics/Projections/.
c. California Department of Transportation (Caltrans). 2017. Long-Term Socio-Economic Forecasts by County, http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html.
d. The 2040 Efficiency target is based on interpolating the 2030 land use emissions target (40 percent below 1990 levels by 2030) and the 2050 land use emissions target (80 percent below 1990 levels by 2050), which equates to approximately 60 percent below 1990 levels by 2040.

5. Impact Assessment

This section analyzes the proposed project's contribution to global climate change impacts through an analysis of project-related GHG emissions.

5.1 IMPACT DISCUSSION

GHG-1) Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough GHG emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact.

Development permitted under the proposed project would contribute to global climate change through direct and indirect emissions of GHG from transportation sources, energy (natural gas and purchased energy), water use and wastewater generation, and solid waste generation. In addition, construction activities would generate a short-term increase in GHG emissions. The total and net increase in GHG emissions associated with the proposed project are shown in Table 2.

Short-Term Impacts

The BAAQMD does not have thresholds of significance for construction-related GHG emissions, however, the BAAQMD advises that the lead agency should quantify and disclose GHG emissions that would occur during construction and make a determination on the significance of these construction-generated GHG emissions in relation to meeting AB 32 GHG reduction goals. Because the GHG emissions from future construction activities would be one-time, short-term emissions, they would not significantly contribute to long-term cumulative GHG emissions impacts of the potential future development on the project site. One-time, short-term emissions are converted to average annual emissions by amortizing them over the service life of a building. For buildings in general, it is reasonable to look at a 30-year timeframe, since this is a typical interval before a new building requires the first major renovation.[9] As shown in Table 2, when amortized over a 30-year project lifetime, average annual construction emissions from future development on the project site would represent a nominal source of GHG emissions and would not exceed BAAQMD's threshold of 1,100 metric tons of carbon dioxide equivalent per year ($MTCO_2e$/year).

Long-Term Impacts

As shown in the Table 2, development of the proposed project would result in a net increase of GHG emissions of 118 $MTCO_2e$/year under Scenario 1, and 927 $MTCO_2e$/year under Scenario 2. Accordingly, the proposed project would not exceed BAAQMD's bright-line threshold of 1,100 $MTCO_2e$/year. The impact is less than significant and no mitigation measures are required.

[9] International Energy Agency, 2008, Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings, March.

TABLE 2 PROJECT GHG EMISSIONS

Category	GHG Emissions ($MTCO_2e$/Year)			
	Existing Emissions 2018	Project Emissions 2040	Percent of Total (Project)	Net Change from Existing
Proposed Scenario 1 – GHG Emissions				
Area	<1	6	1%	6
Energy	264	333	44%	68
On-Road Mobile Sources	339	330	43%	-8
Waste	22	53	7%	31
Water/Wastewater	20	26	3%	6
Amortized Construction	N/A	15	2%	15
Total	**645**	**764**	**100%**	**118**
Proposed Scenario 2 – GHG Emissions				
Area	<1	<1	<1%	<1
Energy	264	708	45%	444
On-Road Mobile Sources	339	655	42%	316
Waste	22	115	7%	94
Water/Wastewater	20	75	5%	55
Amortized Construction	N/A	18	1%	18
Total	**645**	**1,572**	**100%**	**927**
BAAQMD Emissions Threshold ($MTCO_2e$)		**1,100**		**1,100**
Exceeds BAAQMD Thresholds?	**N/A**	**No**	**N/A**	**No**

Note: Emissions may not total to 100 percent due to rounding. New buildings would be constructed to the 2016 Building & Energy Efficiency Standards (effective January 1, 2017). N/A = not applicable.
Source: CalEEMod 2016.3.2.25.

GHG-2) Would the proposed project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Applicable state and regional plans adopted for the purpose of reducing GHG emissions include the CARB Scoping Plan and associated updates, the Metropolitan Transportation Commission (MTC)/Association of Bay Area Government's (ABAG) Plan Bay Area, and the City's Climate Plan. A consistency analysis with these state, regional, and local plans is presented below.

CARB Scoping Plan

In accordance with AB 32 and SB 32, the CARB Scoping Plan to outline the State's strategy to achieve 1990 level emissions by year 2020 and a 40 percent reduction from 1990 emissions by year 2030. The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the CARB Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts. The 2017 update to the CARB Scoping Plan was prepared to address the new interim GHG emissions target under SB 32, which requires the state to reduce its GHG emissions by 40 percent below 1990 levels by the year 2030. The 2017 update to the CARB Scoping Plan provides the strategies for the state to meet the 2030 GHG reduction target as established under SB 32.

Statewide strategies to reduce GHG emissions in the Scoping Plan include the following:

- implementing SB 350, which expands the Renewables Portfolio Standard to 50 percent by 2030 and doubles energy efficiency savings;
- expanding the Low Carbon Fuel Standard to 18 percent by 2030;
- implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks;
- implementing the Sustainable Freight Action Plan;
- implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons 40 percent below 2013 levels by 2030 and black carbon emissions 50 percent below 2013 levels by 2030;
- continuing to implement SB 375;
- creating a post-2020 Cap-and-Trade Program; and
- developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.[10]

Statewide GHG emissions reduction measures that are being implemented as a result of the CARB Scoping Plan would reduce the proposed project's GHG emissions. Future development on the project site would be constructed to achieve the standards in effect at the time of development and would not conflict with statewide programs adopted for the purpose of reducing GHG emissions. While measures in the CARB Scoping Plan apply to state agencies and not directly to the proposed project, the GHG emissions from future construction and operation of development on the project site would be reduced from compliance with statewide measures that have been adopted following AB 32 and SB 32. Therefore, the proposed project would not obstruct implementation of the CARB Scoping Plan.

MTC/ABAG's Plan Bay Area

Plan Bay Area, most recently updated in 2040, is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). To achieve MTC/ABAG'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 in the region in Priority Development Areas (PDAs). PDAs are

[10] California Air Resources Board. 2017, January 20. The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

transit-oriented, infill development opportunity areas within existing communities. An overarching goal of the regional Plan Bay Area is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle, vehicle miles traveled, and associated GHG emissions reductions. While the proposed project is not within a PDA, it would facilitate an infill mixed-used development within approximately 0.1 miles (450 feet) of the Bascom Urban Village PDA to the north and 0.2 miles (1,000 feet) of the Camden Urban Village to the south.[11] Additionally, the proposed project would be improving an existing project site rather than constructing new growth in outlying areas. Therefore, the proposed project would not obstruct implementation of the Plan Bay Area.

Climate Smart San José

The City Council unanimously adopted Climate Smart San José on February 27, 2018, herein referred to as "the Climate Plan".[12] The Climate Plan identifies a series of GHG emissions reduction measures to be implemented by development projects that would allow the City to achieve its GHG reduction goals. The strategies outlined in the Climate Plan are designed to reduce GHG emissions and also provide energy, fuel, water, and monetary savings while improving the quality of life in San José. In the Climate Plan, the City aims to achieve the GHG reduction goals of the Paris Agreement, which is slightly more aggressive than the targets required by the State's Executive Order S-3-05 and Executive Order B-30-15 as laid out in AB 32 and SB 32. The Climate Plan sets a target of 3.4 million metric tons of carbon-dioxide equivalent per year ($MTCO_2e$) in 2030 and 1.1 million $MTCO_2e$ in 2050. To achieve the City's GHG reduction target, the Climate Plan outlines nine strategies that would be implemented in the city. As shown in Table 3 below, the future development on the project site would not conflict with the applicable sustainability strategies and GHG reduction measures in the Climate Plan.

[11] Association of Bay Area Governments (ABAG). 2013. Priority Development Area (PDA) and Transit Priority Area (TPA) Map for CEQA Streamlining. https://www.planbayarea.org/pda-tpa-map, Accessed April 9, 2018.

[12] San Jose, City of. 2018, May. Climate Smart San Jose. http://www.sanjoseca.gov/DocumentCenter/View/750.

TABLE 3 CLIMATE SMART SAN JOSÉ MEASURES

Applicable Goals	Consistency Analysis
A Sustainable and Climate Smart City	
Strategy 1.1. Transition to a Renewable Energy Future.	**Consistent**. Tenants of the proposed project could elect to use renewable energy provided by San José's Community Choice Energy program once commercial service begins in 2019. Additionally, residential buildings proposed under Scenario 1 would be required to comply with Title 24 solar ready requirements. While the requirements under Title 24 do not require installation of solar-energy systems, the buildings are built to accept the installation of such a system.
Strategy 1.2. Embrace Our Californian Climate.	**Consistent.** Future development as a result of the proposed project would be required to comply with all California Green Building Standards Code (California Code of Regulations, Title 24, Part 11) and incorporate appropriate water efficient mechanisms.
A Connected City of Vibrant and Focused Growth	
Strategy 2.1. Densify Our City to Accommodate Our Future Neighbors.	**Consistent.** The proposed project would facilitate an urban infill, mixed-use development located in a highly built-out portion of San José.
Strategy 2.2. Make Homes Efficient and Affordable for Our Residents.	**Consistent.** Residences constructed under Scenario 1 of the proposed project would be required to comply with applicable energy efficiency measures, including all Title 24 requirements at the time of construction.
Strategy 2.4. Develop Integrated, Accessible Public Transport Infrastructure.	**Consistent.** The proposed project would locate residences and/or businesses near public transit infrastructure as a means of getting around the city. The project site is within 1,000 feet of eight bus stops along Camden Avenue and Union Avenue.
An Economically Inclusive City of Opportunity	
Strategy 3.1. Create Local Jobs in Our City to Reduce Vehicle Miles Traveled.	**Consistent**. The future construction of commercial or industrial buildings under both Scenarios 1 and 2 would create jobs close to residential land uses thereby supporting the reduction of vehicle miles traveled.
Strategy 3.2. Improve Our Commercial Building Stock.	**Consistent**. Commercial buildings would be permitted on the project site through implementation of the proposed project. The future construction of these buildings would be required to comply with applicable energy efficiency measures, including all Title 24 requirements applicable at the time of construction.

Source: City of San José, 2018.

Technical Appendix for the Greenhouse Gas Emissions Technical Memorandum for the Campbell Union High School District General Plan Amendment Project

REGULATORY FRAMEWORK

Federal Laws

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.[1]

The EPA's endangerment finding covers emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world The first three are applicable to the proposed project because they constitute the majority of GHG emissions from the onsite land uses, and per BAAQMD guidance are the GHG emissions that should be evaluated as part of a GHG emissions inventory.

US MANDATORY REPORTING RULE FOR GREENHOUSE GASES (2009)

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 CO_2 per year are required to submit an annual report.

UPDATE TO CORPORATE AVERAGE FUEL ECONOMY STANDARDS (2010/2012)

The current Corporate Average Fuel Economy (CAFE) standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon [mpg] by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be considered to be in compliance with State requirements. The federal government issued new standards in 2012 for model years 2017–2025, which will require a fleet average of 54.5 mpg in 2025. However, the EPA is reexamining the 2017 to 2025 emissions standards.

EPA REGULATION OF STATIONARY SOURCES UNDER THE CLEAN AIR ACT (ONGOING)

Pursuant to its authority under the Clean Air Act (CAA), the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to President Obama's 2013 Climate Action Plan, the EPA was directed to also develop regulations for existing stationary sources. However, the EPA is reviewing the Clean Power Plan under President Trump's Energy Independence Executive Order.

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

State Laws

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05, Executive Order B-30-15, Assembly Bill 32, Senate Bill 32, and Senate Bill 375.

EXECUTIVE ORDER S-03-05

Executive Order S-03-05, signed June 1, 2005. Executive Order S-03-05 set the following GHG reduction targets for the State:

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

ASSEMBLY BILL 32, THE GLOBAL WARMING SOLUTIONS ACT

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32. 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-03-05.

CARB 2008 SCOPING PLAN

The final Scoping Plan was adopted by CARB on December 11, 2008. The *2008 Scoping Plan* identified that GHG emissions in California are anticipated to be 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state.[2] 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 $MTCO_2e$ 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.

FIRST UPDATE TO THE SCOPING PLAN

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan, adopted at the May 22, 2014, board hearing, highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, are slightly higher at 431 $MMTCO_2e$.[3]

As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update also addresses the state's longer-term GHG goals in 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 Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals.[4] CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean

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

[3] California Air Resources Board. 2014, March 24. California Greenhouse Gas Inventory for 2000–2012: By Category as Defined by the Scoping Plan, http://www.arb.ca.gov/cc/inventory/data/data.htm.

[4] Ibid.

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.[5]

EXECUTIVE ORDER B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

SENATE BILL 32 AND ASSEMBLY BILL 197

In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan Update

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 14, 2017, CARB adopted the *2017 Climate Change Scoping Plan Update*. The *2017 Climate Change Scoping Plan Update* includes the regulations and programs to achieve the 2030 target, including strategies consistent with AB 197 requirements. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[6]

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning, to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and TACs emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZE buses and trucks;
- Low Carbon Fuel Standard, with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.

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[5] Ibid.

[6] California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZE trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydroflurocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to the statewide strategies listed above, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the state's long-term GHG reduction goals and identified local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally appropriate goals that align with the statewide per capita targets and the state's sustainable development objectives, and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the state's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have the discretion to develop evidence-based numeric thresholds (mass emissions, per capita, or per service population) consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions in the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.[7]

The Scoping Plan scenario is set against what is called the business-as-usual yardstick—that is, what GHG emissions would look like if the state did nothing beyond the existing policies that are required and already in place to achieve the 2020 limit, as shown in Table 1. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. As shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 1 2017 Climate Change Scoping Plan Emissions Reductions Gap

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	260
Gap to 2030 Target with Known Commitments	60

[7] Ibid.

Table 1 2017 Climate Change Scoping Plan Emissions Reductions Gap

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$

Source: California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

Table 2 provides estimated GHG emissions by sector, showing the range of GHG emissions for each sector estimated for 2030 compared to 1990 levels, as identified in the 2017 Scoping Plan Update.

Table 2 2017 Scoping Plan Emissions Changes by Sector to Achieve the 2030 Target

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24-25	-8% to -4%
Residential and Commercial	44	38-40	-14% to -9%
Electric Power	108	30-53	-72% to -51%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-15% to -8%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-32% to -27%
Net Sink[1]	-7	TBD	TBD
Sub Total	431	294-339	-32% to -21%
Cap-and-Trade Program	NA	24-79	NA
Total	431	260	-40%

Source: California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.
Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
[1] Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

SENATE BILL 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter (PM) produced during incomplete combustion of fuels. SB 1383 requires the state board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030, as specified. The bill also establishes targets for reducing organic waste in landfill. In April 2016, CARB adopted the *Proposed Short-Lived Climate Pollutant Strategy*, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use.[8] In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

[8] California Air Resources Board. 2017, March. Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf.

SENATE BILL 375/SUSTAINABLE COMMUNITIES STRATEGY

SB 375, the Sustainable Communities and Climate Protection Act, was adopted in 2005 to connect the Scoping Plan's GHG emissions reductions targets for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 regions in California managed by a metropolitan planning organization (MPO). 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 in GHG emissions from 2005 by 2020, and 15 percent per capita reduction from 2005 levels by 2035.[9]

2017 Update to the SB 375 Targets

SB 375 requires CARB to periodically update the targets, no later than every 8 years. In June 2017, CARB released updated targets and technical methodology and recently released another update in February 2018. The updated targets consider the need to further reduce VMT, as identified in the draft 2017 Scoping Plan Update, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCSs. As proposed, CARB staff's proposed targets would result in an additional reduction of over 10 $MMTCO_2e$ in 2035 compared to the current targets. For the next round of SCS updates, CARB's updated targets for the MTC/ABAG region are a 10 percent per capita GHG reduction in 2020 from 2005 levels (compared to 7 percent under the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 15 percent).[10]

Plan Bay Area, Strategy for a Sustainable Region

Plan Bay Area 2040 is the Bay Area's RTP/SCS and was adopted jointly by ABAG and MTC on July 26, 2017. It lays out a development scenario 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. Plan Bay Area 2040 is a limited and focused update to the 2013 Plan Bay Area, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years.

As part of the implementing framework for Plan Bay Area, local governments have identified Priority Development Areas (PDAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas in existing communities. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated in PDAs. Per the Final Plan Bay Area 2040, while the projected number of new housing units and new jobs within PDAs would increase to 629,000 units and 707,000 jobs compared to the adopted Plan Bay Area 2013, its overall share would be

[9] California Air Resources Board. 2010. Staff Report, Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375, August.

[10] California Air Resources Board. 2018, February. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf.

reduced to 77 percent and 55 percent.[11] However, Plan Bay Area 2040 remains on track to meet a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions.[12] The proposed project site is not within a PDA.[13]

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.[14] In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.[15]

EXECUTIVE ORDER S-1-07

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

EXECUTIVE ORDER B-16-2012

On March 23, 2012, the State identified that CARB, the California Energy Commission (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

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[11] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2017, March. Plan Bay Area 2040 Plan.

[12] Ibid.

[13] Associated Bay Area Governments (ABAG). July 2015. Priority Development Area Showcase, http://gis.abag.ca.gov/website/PDAShowcase/.

[14] See also the discussion on the update to the CAFE standards under federal laws, above. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

[15] See also the discussion on the update to the CAFE standards under Federal Laws, above. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

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.

SENATE BILLS 1078 AND 107 AND EXECUTIVE ORDER S-14-08

A major component of California's Renewable Energy Program is the renewable portfolio standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the State's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SBX1-2). 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.

SENATE BILL 350

Senate Bill 350 (de Leon), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

CALIFORNIA BUILDING STANDARDS CODE – BUILDING ENERGY EFFICIENCY STANDARDS

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, go into effect starting January 1, 2020.

The 2016 Standards improved upon the previous 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are generally 28 and 5 percent more energy efficient than the 2013 Standards, respectively.[16] Buildings that were constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the previous 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features. Although the 2016 standards did not achieve zero net energy, they get very close to the state's goal and take important steps toward changing residential building practices in California.[17]

The 2019 standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. Four key areas the 2019 standards will focus on are 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and

[16] California Energy Commission, 2015, June 10. 2016 Building Energy Efficiency Standards: Adoption Hearing Presentation. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents.

[17] California Energy Commission, 2015. 2016 Building Energy and Efficiency Standards: Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.

nonresidential ventilation requirements; and 4) nonresidential lighting requirements.[18] Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards, and single-family homes will be 7 percent more energy efficient.[19] When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy than homes built to the 2016 standards.[20]

CALIFORNIA GREEN BUILDING STANDARDS CODE – CALGREEN

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. 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 interior air contaminants.[21] The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011. The 2016 Standards became effective on January 1, 2017. The CEC adopted the 2019 CALGreen on May 9, 2018, and it becomes effective January 1, 2020.

2006 APPLIANCE ENERGY 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.

SOLID WASTE REGULATIONS

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code 40050 et seq.) set a requirement for cities and counties throughout the State to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327, California Public Resources Code Sections 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

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[18] California Energy Commission, 2018. Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. News Release. http://www.energy.ca.gov/releases/2018_releases/2018-05-09_building_standards_adopted_nr.html.

[19] California Energy Commission, 2018b. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf.

[20] California Energy Commission, 2015. 2016 Building Energy and Efficiency Standards: Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.

[21] The green building standards became mandatory in the 2010 edition of the code.

Section 5.408 of the 2016 California Green Building Standards Code (Title 24, California Code of Regulations, Part 11) also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

In October of 2014 Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

WATER EFFICIENCY REGULATIONS

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Local Regulations

GENERAL PLAN

The Housing (H) and Land Use/Transportation (TR) sections of the General Plan include the following goals and policies specific to GHG emissions and applicable to future development facilitated by the proposed project:

- Goal H-4 Environmental Sustainability – Provide housing that minimizes the consumption of natural resources and advances our City's fiscal, climate change, and environmental goals.
  - Policy H-4.2: Minimize housing's contribution to greenhouse gas emissions, and locate housing, consistent with our City's land use and transportation goals and policies, to reduce vehicle miles traveled and auto dependency.
  - Policy H-4.3: Encourage the development of higher residential densities in complete, mixed-use, walkable and bikeable communities to reduce energy use and greenhouse gas emissions.
- Goal TR-9 Tier I Reduction of Vehicle Miles Traveled – Reduce Vehicle Miles Traveled (VMT) by 10 percent, from 2009 levels, as an interim goal.
  - Policy TR-9.1: Enhance, expand and maintain facilities for walking and bicycling, particularly to connect with and ensure access to transit and to provide a safe and complete alternative transportation network that facilitates non-automobile trips.

CLIMATE SMART SAN JOSÉ

Climate Smart San José (the Plan) aims to create a more sustainable City by setting City-wide GHG emissions targets line with the GHG reduction goals of the Paris Agreement. The City Council unanimously adopted Climate Smart San José on Feb. 27, 2018. In addition to GHG emissions reductions, successful implementation of the plan will reduce air pollution, save water, and create a stronger and healthier community. The Plan uses a 2014 emissions inventory to develop a pathway to contribute to the Paris goal over time. Strategies within the plan are centered on three pillars of what residents want:

1) A Sustainable & Climate Smart City
2) A Vibrant City of Connected & Focused Growth
3) An Economically Inclusive City of Opportunity

CalEEMod Inputs (Construction Run)

Name:	San Jose GP Amendment
Project Location:	2223 Camden Avenue
County/Air Basin:	Santa Clara County
Climate Zone:	4
Land Use Setting:	Urban
Operational Year:	2040
Utility Company:	Pacific Gas and Electric

Total Site Acreage:	9.28
Disturbed Site Acreage:	9.28

Components	Unit Amount	Units	Acreage
	Layout 1		
Single-Family Homes	36	Dwelling Units	6.28
Commercial Uses	50,000	SQFT	3.00
	Layout 2		
Commercial Uses	185,000	SQFT	9.28

New Residents
147

Land Use	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Square Feet
CalEEMod Land Use Inputs Layout 1						
Single-Family Homes	Recreational	Single-Family	36.00	DU	6.28	64,800
Commercial Uses	Industrial	Light Industrial	50.00	1000 sqft	3.00	50,000
CalEEMod Land Use Inputs Layout 2						
Commercial Uses	Industrial	Light Industrial	185.00	1000 sqft	9.00	185,000

Trip Generations

	Weekday Trip Rate	Saturday Trip Rate	Sunday Trip Rate
		Scenario 1	
Single-Family Home Trip Rate	9.44	9.54	8.55
Light Industrial Trip Rate	4.96	1.99	5.00
Total ADT	**588**	**443**	**558**
		Scenario 2	
Light Industrial Trip Rate	4.96	1.99	5.00
Total ADT	**918**	**368**	**925**

**Based on the the Institute of Transportation Engineers Manual 10th Edition trip rates*

Energy Use

CalEEMod defaults used

Solid Waste

	Solid Waste Generation Rates*	
	Option 1	
General Light Industry	62	Tons/Year
Single Family Homes	61.74	Tons/Year
	Option 2	
General Light Industry	229.4	Tons/Year

**Based on CalEEMod Defaults*

Water Use

	Indoor Water Use*	Outdoor Water Use*	
	Option 1		
General Light Industry	11,562,500	0	gals/year
Single Family Housing	2,345,544.92	1,478,713.10	gals/year
	Option 2		
General Light Industry	42,781,250.00	0.00	gals/year

Septic Tank	0%
Aerobic	100%
Facultative Lagoons	0%

**CalEEMod Default water generation rate.*

Architectural Coating

BAAQMD Regulation 8 Rule 3

Interior Paint VOC content:	100
Exterior Paint VOC content:	150

Non-Residential Architectural Coating

Percentage of Buildings' Interior Painted:	100%
Percentage of Buildings' Exterior Painted:	100%

Structures	Land Use Square Feet	CalEEMod Paintable Surface Area Multiplier	Total Paintable Surface Area[2]	Paintable Interior Area[1]	Paintable Exterior Area[1]
Option 1					
Single-Family Homes	64,800	2.7	174,960	131,220	43,740
		Non-Residential Totals	**174,960**	**131,220**	**43,740**
Commercial Uses	50,000	2	100,000	75,000	25,000
		Non-Residential Totals	**100,000**	**75,000**	**25,000**
Option 2					
Commercial Uses	185,000	2	370,000	277,500	92,500
		Non-Residential Totals	**370,000**	**277,500**	**92,500**

Notes:

1 *CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively. Architectural coatings for the parking lot is based on CalEEMod methodology applied to a surface parking lot (i.e., striping), in which 6% of surface area is painted.

2 ** Applied CalEEMod Methodology in calculating total

Water Mitigation

Install Low Flow Bathroom Faucet	32	% Reduction in flow
Install Low Flow Kitchen Faucet	18	% Reduction in flow
Install Low Flow Toilet	20	% Reduction in flow
Install Low Flow Shower	20	% Reduction in flow
Use Water Efficiency Irrigation System	6.1	% Reduction in flow

CalEEMod Inputs--Operation

Name:	San Jose GP Amendment
Project Location:	2223 Camden Avenue
County/Air Basin:	Santa Clara County
Climate Zone:	4
Land Use Setting:	Urban
Operational Year:	2018, 2040
Utility Company:	Pacific Gas and Electric

Total Site Acreage: 9.28

Existing Components*	Added SQFT	Acreage
Camden Community Day School	9,570	0.85
CHUSD District Maintenance Offices	33,250	8.43
		9.28

**Sizes based on aerial photograph*

Existing CalEEMod Land Use Inputs

Land Use	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Square Feet
Camden Community Day School	Educational	High School	9.57	1000 sqft	0.85	9,570
CHUSD District Maintenance Offices	Commercial	Government Office Building	33.25	1000 sqft	8.43	33,250
					9.28	

Trip Generations

	Weekday Trip Rate	Saturday Trip Rate	Sunday Trip Rate	
High School	14.07	3.98	1.71	Trips/Unit
District Office Building	14.37	0.00	0.00	trips/unit
Total ADT	612	38	16	

**Based on the the Institute of Transportation Engineers Manual 10th Edition trip rates*

Energy Use

CalEEMod defaults used with historical data enabled

Solid Waste

	Solid Waste Generation Rate*	
Government Office Building	30.92	TPY
High School	12.44	TPY

**Based on CalEEMod Defaults*

Water Use

	Indoor Water Use*	Outdoor Water Use*	
Government Office Building	6,605,435	4,048,492.15	gals/year
High School	317,768.40	817,118.76	gals/year

Septic Tank	0%
Aerobic	100%
Facultative Lagoons	0%

Architectural Coating

BAAQMD Regulation 8 Rule 3

Interior Paint VOC content:	100
Exterior Paint VOC content:	150

Non-Residential Architectural Coating

Percentage of Buildings' Interior Painted:	100%
Percentage of Buildings' Exterior Painted:	100%

Structures	Land Use Square Feet	CalEEMod Paintable Surface Area Multiplier	Total Paintable Surface Area[2]	Paintable Interior Area[1]	Paintable Exterior Area[1]
Camden Community Day School	9,570	2	19,140	14,355	4,785
CHUSD District Maintenance Offices	33,250	2	66,500	49,875	16,625
		Non-Residential Totals	**19,140**	**64,230**	**21,410**

Notes:

1 *CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively. Architectural coatings for the parking lot is based on CalEEMod methodology applied to a surface parking lot (i.e., striping), in which 6% of surface area is painted.

2 ** Applied CalEEMod Methodology in calculating total

Changes to the CalEEMod Defaults for Single-Family Housing - Fleet Mix 2040

Trips 1,355

Default	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	
FleetMix (Model Default)	0.6217	0.033362	0.17913	0.10113	0.011078	0.005126	0.013709	0.024709	0.002299	0.001422	0.005077	0.000653	0.000642	100%
Trips	842	45	243	137	15	7	19	33	3	2	7	1	1	1,355
Percent	84%			10%	6%									100%
without buses/MH*	0.621663	0.033362	0.179130	0.101130	0.011078	0.005126	0.013709	0.024709	0	0	0.000000	0.0000000	0	99%
Percent	83%			10%	5%									99%
Adjusted without buses/MH	0.621663	0.033362	0.179130	0.101130	0.012095	0.005597	0.014968	0.026978	0.000000	0.000000	0.000000	0.000000	0.000000	
Percent check	83%			10%	6%									99%
Assumed Mix	97.0%			2.00%	1.00%									100%
adjusted with Assumed	0.722903	0.038795	0.208302	0.020000	0.002028	0.000938	0.002510	0.004524	0.000000	0.000000	0.000000	0.000000	0.000000	100%
Trips	980	53	282	27	3	1	3	6	0	0	0	0	0	1,355
Check	*1,314*			*27*	*14*									

Changes to the CalEEMod Defaults for High School Land Use - Fleet Mix 2018

Trips 1,355

Default	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	
FleetMix (Model Default)	0.5967	0.0402	0.188056	0.111125	0.016796	0.004948	0.012194	0.019466	0.002007	0.001626	0.00541	0.000612	0.000841	100%
Trips	809	54	255	151	23	7	17	26	3	2	7	1	1	1,355
Percent	83%			11%	6%									100%
without buses/MH*	0.596719	0.040200	0.188056	0.111125	0.016796	0.004948	0.012194	0.019466	0	0	0.005410	0.0000000	0	99%
Percent	83%			11%	5%									99%
Adjusted without buses/MH	0.596719	0.040200	0.188056	0.111125	0.018396	0.005419	0.013355	0.021320	0.000000	0.000000	0.005925	0.000000	0.000000	
Percent check	83%			11%	6%									100%
Assumed Mix	97.0%			2.00%	1.00%									100%
adjusted with Assumed	0.696615	0.046930	0.219538	0.020000	0.003145	0.000927	0.002283	0.003645	0.000000	0.000000	0.006917	0.000000	0.000000	100%
Trips	944	64	297	27	4	1	3	5	0	0	9	0	0	1,355
Check	*1,314*			*27*	*14*									

Changes to the CalEEMod Defaults for High School - Fleet Mix 2040

Trips 1,355

Default	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	
FleetMix (Model Default)	0.6217	0.033362	0.17913	0.10113	0.011078	0.005126	0.013709	0.024709	0.002299	0.001422	0.005077	0.000653	0.000642	100%
Trips	842	45	243	137	15	7	19	33	3	2	7	1	1	1,355
Percent	84%			10%	6%									100%
without buses/MH*	0.621663	0.033362	0.179130	0.101130	0.011078	0.005126	0.013709	0.024709	0	0	0.005077	0.0000000	0	99%
Percent	84%			10%	5%									99%
Adjusted without buses/MH	0.621663	0.033362	0.179130	0.101130	0.012095	0.005597	0.014968	0.026978	0.000000	0.000000	0.005543	0.000000	0.000000	
Percent check	84%			10%	6%									100%
Assumed Mix	97.0%			2.00%	1.00%									100%
adjusted with Assumed	0.718131	0.038539	0.206927	0.020000	0.002028	0.000938	0.002510	0.004524	0.000000	0.000000	0.006403	0.000000	0.000000	100%
Trips	973	52	280	27	3	1	3	6	0	0	9	0	0	1,355
Check	*1,314*			*27*	*14*									

CalEEMod Construction Phase Inputs*

5-Day Work Week/8 hours per day

Phase 1	Phase Type	Start Date	End Date	CalEEMod Total Days	Total Days
Demolition	Demolition	1/1/2019	1/28/2019	20	27
Site Preparation	Site Preparation	1/29/2019	2/11/2019	10	13
Grading	Grading	2/12/2019	3/11/2019	20	27
Building Construction	Building Construction	3/12/2019	1/27/2020	230	321
Paving	Paving	1/28/2020	2/24/2020	20	27
Architectural Coating	Architectural Coating	2/25/2020	3/23/2020	20	27

Year	Start Date	End Date	Days
2019	1/1/2019	12/31/2019	261
2020	1/1/2020	12/31/2020	262
		Total	**523**

*Based on construction schedule provided by the Applicant.

CalEEMod Construction Off-Road Equipment Inputs*
Phase

Equipment Type		Unit Amount	Hours /Day	HP	LF	Vendor Trips
Demolition						
Concrete/Industrial Saws	Concrete/Industrial Saws	1	8	81	0.73	
Excavators	Excavators	3	8	158	0.38	
Rubber Tired Dozers	Rubber Tired Dozers	2	8	247	0.4	
Water Truck**						4
Worker Trips		15				
Site Preparation						
Rubber Tired Dozers	Rubber Tired Dozers	3	8	247	0.4	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	4	8	97	0.37	
Water Truck**						4
Worker Trips		18				
Grading						
Excavators	Excavators	1	8	158	0.38	
Graders	Graders	1	8	187	0.41	
Rubber Tired Dozers	Rubber Tired Dozers	1	8	247	0.4	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	3	8	97	0.37	4
Water Truck**						
Worker Trips		15				
Building Construction						
Cranes	Cranes	1	7	231	0.29	
Forklifts	Forklifts	3	8	89	0.2	
Generator Sets	Generator Sets	1	8	84	0.74	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	3	7	97	0.37	
Welders	Welders	1	8	46	0.45	
Vendor Trips						24
Worker Trips - Phase 1		34				
Worker Trips - Phase 2		78				
Paving						
Pavers	Pavers	2	8	130	0.42	
Paving Equipment	Paving Equipment	2	8	132	0.36	
Rollers	Rollers	2	8	80	0.38	
Vendor Trips						
Worker Trips		15				
Painting						
Air Compressors	Air Compressors	1	6	78	0.48	
Worker Trips - Phase 1		7				
Worker Trips - Phase 2		16				

*CalEEMod default
**Assume 4 vendor trips for water trucks.

Demo Haul Trip Calculation

*Conversion factors**

0.046	ton/SF
1.2641662	tons/cy
20	tons
15.82070459	CY
0.791035229	CY/ton

Building Demoltion Haul Trips (BSF and Haul Truck (CY) given)

BSF Demo	Tons/SF	Tons	Haul Truck (CY)	Haul Truck (Ton)	Round Trips	Total Trip Ends
42,820	0.046	1969.72	16	20.23	97	195

*CalEEMod User's Guide Version 2011.1, Appendix A

Pavement Volume to Weight Conversion

Component	Total SF of Area[1]	Assumed Thickness (foot)[2]	Debris Volume (cu. ft)	Weight of Crushed Asphalt (lbs/cf)[3]	AC Mass (lbs)	AC Mass (tons)
Asphalt	302,808	0.333	100,936	45	4,542,120	2271.06

[1] *Based on aerial photo*
[2] *Pavements and Surface Materials. Nonpoint Education for Municipal Officials, Technical Paper Number 8. University of Conneticut Cooperative Extension System, 1999.*
[3] *http://www.reade.com/reade-resources/reference-educational/reade-reference-chart-particle-property-briefings/26-weight-per-cubic-foot-and-specific-gravity-metals-minerals-organics-inorganics-ceraqmics*

Total Demoltion Debris

Buildings	1969.72
Asphalt	2271.06
Total	**4240.78**

Total Demo Haul Trips

Tons	Haul Truck (CY)	Haul Truck (Ton)	Round Trips	Total Trip Ends
4240.78	16	20.23	210	419

Greenhouse Gas Emissions Summary - Option 1

Existing Land Use - 2018

MT/yr	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Area Sources	0	7.70E-04	7.70E-04	0.00E+00	0	0	0%
Energy Use	0	263.32	263.32	1.07E-02	2.88E-03	264	41%
Mobile Sources	0	338.27	338.27	1.41E-02	0	339	52%
Waste Generation	8.8017	0	8.8017	0.5202	0	22	3%
Water/Wastewater	2.4494	15.8521	18.3015	9.15E-03	5.48E-03	20	3%
Total	11	617	629	1	0	645	100%

Proposed Project Option 1 - 2040

MT/yr	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Area Sources	4.576	1.56E+00	6.14E+00	9.06E-03	2.60E-04	6.44	1%
Energy Use	0	331.10	331.10	1.17E-02	4.23E-03	333	44%
Mobile Sources	0	330.16	330.16	6.14E-03	0	330	43%
Waste Generation	21.3668	0	21.3668	1.2627	0	53	7%
Water/Wastewater	3.9366	18.9281	22.8647	1.44E-02	8.74E-03	26	3%
Amoritized Construction						15	2%
Total	34	714	747	2	0	764	100%

Net Emission Rates from Proposed Project

MT/yr	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Area Sources	4.576	1.56033	6.13633	0.00906	0.00026	6.44	5%
Energy Use	0	67.7809	67.7809	0.001	0.00135	68	58%
Mobile Sources	0	-8.1112	-8.1112	-0.00796	0	-8	-7%
Waste Generation	12.5651	0	12.5651	0.7425	0	31	26%
Water/Wastewater	1.4872	3.076	4.5632	0.00525	0.00326	5.7	5%
Amoritized Construction						15	13%
Total	**22.38**	**96.0562**	**118.4357**	**0.9752**	**0**	**118**	**100%**
BAAQMD Threshold						**1,100**	
Exceeds Threshold						**No**	

Construction

Construction

Unmitigated	Const.
2019	409
2020	52
Total Construction	460

30-Year Amortization	**15**
BAAQMD Threshold	**1100**
Exceeds Threshold	**No**

Greenhouse Gas Emissions Summary - Option 2

Existing Land Use - 2018

MT/yr	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Area Sources	0	7.70E-04	7.70E-04	0.00E+00	0	0	0%
Energy Use	0	263.32	263.32	1.07E-02	2.88E-03	264	41%
Mobile Sources	0	338.27	338.27	1.41E-02	0	339	52%
Waste Generation	8.8017	0	8.8017	0.5202	0	22	3%
Water/Wastewater	2.4494	15.8521	18.3015	9.15E-03	5.48E-03	20	3%
Total	11	617	629	1	0	645	100%

Proposed Project Option 2 - 2040

MT/yr	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Area Sources	0	3.31E-03	3.31E-03	1.00E-05	0	0.00	0%
Energy Use	0	704.97	704.97	2.51E-02	8.93E-03	708	45%
Mobile Sources	0	654.09	654.09	1.69E-02	0	655	42%
Waste Generation	46.5661	0	46.5661	2.752	0	115	7%
Water/Wastewater	12.1089	53.8743	65.9832	4.41E-02	2.68E-02	75	5%
Amoritized Construction						18	1%
Total	59	1413	1472	3	0	1,572	100%

Net Emission Rates from Proposed Project

MT/yr	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Area Sources	0	0.00254	0.00254	0.00001	0	0.00	0%
Energy Use	0	441.6529	441.6529	0.0144	0.00605	444	48%
Mobile Sources	0	315.8182	315.8182	0.0028	0	316	34%
Waste Generation	37.7644	0	37.7644	2.2318	0	94	10%
Water/Wastewater	9.6595	38.0222	47.6817	0.03495	0.02132	54.9	6%
Amoritized Construction						18.4	2%
Total	**47.42**	**795.4954**	**842.9243**	**2.284**	**0.02744**	**927**	**100%**

BAAQMD Threshold	**1,100**
Exceeds Threshold	**No**

Construction

Construction

Unmitigated	Const.
2019	491
2020	59
Total Construction	551

30-Year Amortization	**18**
BAAQMD Threshold	**1100**
Exceeds Threshold	**No**

GHG Emissions Target Setting - Forecasting the 2030 Efficiency Target

2020 Scoping Plan Emissions Inventory

Source: CARB 1990 Inventory. California Air Resources Board. 2007, November. California Greenhouse Gas Inventory (millions of metric tonnes of CO2 equivalent) — Summary by Economic Sector. https://www.arb.ca.gov/cc/inventory/1990level/1990data.htm

1990 End Use Sector	MTCO2e	MMTCO2e	Notes
Electricity	94,754,207	94.8	Removed Industrial
Transportation	137,901,182	137.9	On-Road Only
Landfills	7,447,544	7.4	Landfill
Wastewater	3,183,648	3.2	Domestic Wastewater Treatment
Commercial	13,848,597	13.8	Removed National Security
Residential	29,740,487	29.7	Includes all
TOTAL LAND USE	286,875,666	286.9	

2017 Scoping Plan Emissions Inventory

Source: Pathways Main Outputs Final (Dec 2017). California Air Resources Board. 2017, December. The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

End Use Sector 2030	MMTCO2e				
	Reference Scenario	Scoping Plan Scenario	Change	Percent Change	Sector Definition
Residential	46.5	41.4	-5.1	-11.0%	Residential final energy consumption
Commercial	36.00	30.1	-5.90	-16.4%	Commercial final energy consumption
Transportation	123.1	105.1	-18	-14.6%	Transportation energy consumption
Industrial*	33.8	30.7	-3.1	-9.2%	Industrial manufacturing final energy consumption,
Oil & Gas Extraction*	19.5	19.4	-0.1	-0.5%	Energy used in the extraction of oil and gas
Petroleum Refining*	32.6	32.5	-0.1	-0.3%	Energy used in petroleum Refining
Agriculture	7.7	6.8	-0.9	-11.7%	Energy use of physical infrastructure of agriculture, like buildings and pumps
Transportation Communications and Utilities	5.5	5	-0.5	-9.1%	Transportation Communications and Utilities (TCU) energy supports public infrastructure, like street lighting and waste treatment facilities
Non-Energy GHGs*	84.3	49.4	-34.9	-41.40%	Examples of non-energy GHG emissions include methane and N2O emissions from agriculture and waste, refrigerant F-gases, and emissions from cement production
Solid Waste Non-Energy GHGs	10.7	9.1	-1.6	-14.95%	Isolated the Solid Waste Subsector
Unspecified	0	0	0	n/a	
	389	320.4	-68.6	-17.63%	
Target	260	260			
Gap	-129	-60.4			

CARB 2017 Scoping Plan Assumes GAP from the Scoping Plan Scenario is closed by the Cap-and-Trade

GHG Emissions Target Setting - Forecasting the 2030 Efficiency Target

STATEWIDE SERVICE POPULATION CALCULATIONS

Population	
2020	40,639,392
2021	40,980,939
2022	41,321,565
2023	41,659,526
2024	41,994,283
2025	42,326,397
2026	42,655,695
2027	42,981,484
2028	43,304,691
2029	43,624,393
2030	43,939,250
2031	44,250,503
2032	44,556,617
2033	44,856,079
2034	45,150,800
2035	45,440,735
2036	45,726,459
2037	46,006,009
2038	46,277,743
2039	46,544,307
2040	46,804,202
2050	49,077,801

California Department of Finance. 2018, March 8. Report P-1 (County): State and County Total Population Projections, 2010-2060 (1 -year increments).http://www.dof.ca.gov/Forecasting/Demographics/Projections/

GHG Emissions Target Setting - Forecasting the 2030 Efficiency Target

CALIFORNIA SERVICE POPULATION (ESTIMATE)

Employment

	Total Employment	Farm Employment	Natural Resources and Mining Employment	Employment w/o Industrial and Agricultural Sectors
2020	17,630,930	418,171	22,268	17,190,490
2021	17,787,640	417,961	22,388	17,347,290
2022	17,939,780	418,291	22,578	17,498,910
2023	18,083,910	418,582	22,538	17,642,790
2024	18,224,870	418,862	22,398	17,783,610
2025	18,370,230	419,122	22,188	17,928,920
2026	18,511,920	419,372	22,198	18,070,350
2027	18,648,200	419,612	22,408	18,206,180
2028	18,808,150	419,872	22,438	18,365,840
2029	18,971,340	420,142	22,478	18,528,719
2030	19,137,080	420,402	22,508	18,694,169
2031	19,299,670	420,673	22,538	18,856,459
2032	19,458,160	420,933	22,578	19,014,649
2033	19,615,470	421,203	22,608	19,171,659
2034	19,770,890	421,463	22,648	19,326,779
2035	19,924,140	421,733	22,678	19,479,729
2036	20,078,780	421,993	22,718	19,634,068
2037	20,235,200	422,263	22,748	19,790,188
2038	20,395,030	422,523	22,788	19,949,718
2039	20,551,830	422,794	22,818	20,106,218
2040	20,709,630	423,054	22,859	20,263,718
2050	22,371,010	425,715	23,209	21,922,086

California Department of Transportation. 2017. Long-Term Socio-Economic Forecasts by County.
http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html

GHG Emissions Target Setting - Forecasting the 2030 Efficiency Target

Service Population (SP)

	Total Employment	Employment w/o Industrial and Agricultural Sectors
2020	58,270,322	57,829,882
2021	58,768,579	58,328,229
2022	59,261,345	58,820,475
2023	59,743,436	59,302,316
2024	60,219,153	59,777,893
2025	60,696,627	60,255,317
2026	61,167,615	60,726,045
2027	61,629,684	61,187,664
2028	62,112,841	61,670,531
2029	62,595,733	62,153,112
2030	63,076,330	62,633,419
2031	63,550,173	63,106,962
2032	64,014,777	63,571,266
2033	64,471,549	64,027,738
2034	64,921,690	64,477,579
2035	65,364,875	64,920,464
2036	65,805,239	65,360,527
2037	66,241,209	65,796,197
2038	66,672,773	66,227,461
2039	67,096,137	66,650,525
2040	67,513,832	67,067,920
2050	71,448,811	70,999,887

Project Horizon Year Estimate	2040
2040 population	46,804,202
2040 employment (w/o industrial & Ag)	20,263,718
2040 SP	67,067,920

GHG Emissions Target Setting - Forecasting the 2030 Efficiency Target

2030 Scoping Plan - Efficiency Metric

Year 2020 Plan-Level			
2020 Target (Plan-Level)	MMTCO2e	431	
2020 Per Capita Target	MTCO2e/pc	10.6	
2020 Per Service Population Target (Plan-Level)	MTCO2e/sp	7.5	
Year 2020 Project-Level			
2020 Target (Project-Level)	MMTCO2e	286.9	
2020 Per Capita Target	MTCO2e/pc	7.1	
2020 Per Service Population Target (Project-Level)	MTCO2e/sp	5.0	
Year 2030 Plan-Level			
2030 Target (Plan-Level)	MMTCO2e	260	
2030 Per Capita Target	MTCO2e/pc	5.9	
2030 Per Service Population Target (Plan-Level)	MTCO2e/sp	4.2	
Year 2030 Project-Level			
Land Use Inventory (Project-Level)	MMTCO2e	190.7	
2030 Per Capita Target	MTCO2e/pc	4.3	
2030 Per Service Population Target (Project-Level)	MTCO2e/sp	3.0	
Year 2050 Plan-Level			
2050 Target estimated (Plan-Level)	MMTCO2e	86	
2050 Per Capita Target	MTCO2e/pc	1.8	
2050 Per Service Population Target (Plan-Level)	MTCO2e/sp	1.2	
Year 2050 Project-Level			
2050 Target estimated (Plan-Level)	MMTCO2e	57	
2050 Per Capita Target	MTCO2e/pc	1.2	
2050 Per Service Population Target (Plan-Level)	MTCO2e/sp	0.8	
Project Horizon Year Estimate	2040		
Land Use Inventory (Plan-Level)	MMTCO2e	173.1	-40%
2040 Per Service Population Target (Project-Level)	MTCO2e/sp	2.58	

San Jose GP Amendment Existing Run

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	33.25	1000sqft	8.15	33,250.00	0
High School	9.57	1000sqft	0.85	9,570.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - See CalEEMod Assumptions

Energy Use -

Water And Wastewater - See CalEEMod Assumptions

Vehicle Trips - See CalEEMod Assumptions

Fleet Mix - See CalEEMod Assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblFleetMix	HHD	0.02	3.6450e-003
tblFleetMix	LDA	0.60	0.70
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.19	0.22
tblFleetMix	LHD1	0.02	3.1450e-003
tblFleetMix	LHD2	4.9480e-003	9.2700e-004
tblFleetMix	MCY	5.4100e-003	6.9170e-003
tblFleetMix	MDV	0.11	0.02
tblFleetMix	MH	8.4100e-004	0.00
tblFleetMix	MHD	0.01	2.2830e-003
tblFleetMix	OBUS	2.0070e-003	0.00
tblFleetMix	SBUS	6.1200e-004	0.00
tblFleetMix	UBUS	1.6260e-003	0.00
tblLandUse	LotAcreage	0.76	8.15
tblLandUse	LotAcreage	0.22	0.85
tblVehicleTrips	ST_TR	4.37	3.98
tblVehicleTrips	SU_TR	1.79	1.71
tblVehicleTrips	WD_TR	68.93	14.37
tblVehicleTrips	WD_TR	12.89	14.07
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1896	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.7000e-004	7.7000e-004	0.0000	0.0000	8.2000e-004
Energy	4.7200e-003	0.0429	0.0361	2.6000e-004		3.2600e-003	3.2600e-003		3.2600e-003	3.2600e-003	0.0000	263.3203	263.3203	0.0107	2.8800e-003	264.4466
Mobile	0.1345	0.4332	1.4734	3.7200e-003	0.3176	4.0400e-003	0.3217	0.0849	3.7900e-003	0.0887	0.0000	338.2714	338.2714	0.0141	0.0000	338.6228
Waste						0.0000	0.0000		0.0000	0.0000	8.8017	0.0000	8.8017	0.5202	0.0000	21.8058
Water						0.0000	0.0000		0.0000	0.0000	2.4494	15.8521	18.3015	9.1500e-003	5.4800e-003	20.1618
Total	**0.3288**	**0.4761**	**1.5099**	**3.9800e-003**	**0.3176**	**7.3000e-003**	**0.3249**	**0.0849**	**7.0500e-003**	**0.0919**	**11.2511**	**617.4446**	**628.6957**	**0.5541**	**8.3600e-003**	**645.0378**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1896	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.7000e-004	7.7000e-004	0.0000	0.0000	8.2000e-004
Energy	4.7200e-003	0.0429	0.0361	2.6000e-004		3.2600e-003	3.2600e-003		3.2600e-003	3.2600e-003	0.0000	263.3203	263.3203	0.0107	2.8800e-003	264.4466
Mobile	0.1345	0.4332	1.4734	3.7200e-003	0.3176	4.0400e-003	0.3217	0.0849	3.7900e-003	0.0887	0.0000	338.2714	338.2714	0.0141	0.0000	338.6228
Waste						0.0000	0.0000		0.0000	0.0000	8.8017	0.0000	8.8017	0.5202	0.0000	21.8058
Water						0.0000	0.0000		0.0000	0.0000	2.4494	15.8521	18.3015	9.1500e-003	5.4800e-003	20.1618
Total	**0.3288**	**0.4761**	**1.5099**	**3.9800e-003**	**0.3176**	**7.3000e-003**	**0.3249**	**0.0849**	**7.0500e-003**	**0.0919**	**11.2511**	**617.4446**	**628.6957**	**0.5541**	**8.3600e-003**	**645.0378**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1345	0.4332	1.4734	3.7200e-003	0.3176	4.0400e-003	0.3217	0.0849	3.7900e-003	0.0887	0.0000	338.2714	338.2714	0.0141	0.0000	338.6228
Unmitigated	0.1345	0.4332	1.4734	3.7200e-003	0.3176	4.0400e-003	0.3217	0.0849	3.7900e-003	0.0887	0.0000	338.2714	338.2714	0.0141	0.0000	338.6228

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Government Office Building	477.80	0.00	0.00	585,267	585,267
High School	134.65	38.09	16.36	272,178	272,178
Total	612.45	38.09	16.36	857,445	857,445

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Government Office Building	0.596719	0.040200	0.188056	0.111125	0.016796	0.004948	0.012194	0.019466	0.002007	0.001626	0.005410	0.000612	0.000841
High School	0.696615	0.046930	0.219538	0.020000	0.003145	0.000927	0.002283	0.003645	0.000000	0.000000	0.006917	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	216.5925	216.5925	9.7900e-003	2.0300e-003	217.4412
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	216.5925	216.5925	9.7900e-003	2.0300e-003	217.4412
NaturalGas Mitigated	4.7200e-003	0.0429	0.0361	2.6000e-004		3.2600e-003	3.2600e-003		3.2600e-003	3.2600e-003	0.0000	46.7278	46.7278	9.0000e-004	8.6000e-004	47.0055
NaturalGas Unmitigated	4.7200e-003	0.0429	0.0361	2.6000e-004		3.2600e-003	3.2600e-003		3.2600e-003	3.2600e-003	0.0000	46.7278	46.7278	9.0000e-004	8.6000e-004	47.0055

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Government Office Building	663670	3.5800e-003	0.0325	0.0273	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4160	35.4160	6.8000e-004	6.5000e-004	35.6264
High School	211976	1.1400e-003	0.0104	8.7300e-003	6.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	11.3118	11.3118	2.2000e-004	2.1000e-004	11.3790
Total		**4.7200e-003**	**0.0429**	**0.0361**	**2.6000e-004**		**3.2600e-003**	**3.2600e-003**		**3.2600e-003**	**3.2600e-003**	**0.0000**	**46.7278**	**46.7278**	**9.0000e-004**	**8.6000e-004**	**47.0055**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Government Office Building	663670	3.5800e-003	0.0325	0.0273	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4160	35.4160	6.8000e-004	6.5000e-004	35.6264
High School	211976	1.1400e-003	0.0104	8.7300e-003	6.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	11.3118	11.3118	2.2000e-004	2.1000e-004	11.3790
Total		**4.7200e-003**	**0.0429**	**0.0361**	**2.6000e-004**		**3.2600e-003**	**3.2600e-003**		**3.2600e-003**	**3.2600e-003**	**0.0000**	**46.7278**	**46.7278**	**9.0000e-004**	**8.6000e-004**	**47.0055**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Government Office Building	683953	198.9696	9.0000e-003	1.8600e-003	199.7493
High School	60578.1	17.6229	8.0000e-004	1.6000e-004	17.6919
Total		**216.5925**	**9.8000e-003**	**2.0200e-003**	**217.4412**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Government Office Building	683953	198.9696	9.0000e-003	1.8600e-003	199.7493
High School	60578.1	17.6229	8.0000e-004	1.6000e-004	17.6919
Total		**216.5925**	**9.8000e-003**	**2.0200e-003**	**217.4412**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1896	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.7000e-004	7.7000e-004	0.0000	0.0000	8.2000e-004
Unmitigated	0.1896	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.7000e-004	7.7000e-004	0.0000	0.0000	8.2000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0223					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1672					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.7000e-004	7.7000e-004	0.0000	0.0000	8.2000e-004
Total	**0.1896**	**0.0000**	**4.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.7000e-004**	**7.7000e-004**	**0.0000**	**0.0000**	**8.2000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0223					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1672					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.7000e-004	7.7000e-004	0.0000	0.0000	8.2000e-004
Total	**0.1896**	**0.0000**	**4.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.7000e-004**	**7.7000e-004**	**0.0000**	**0.0000**	**8.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	18.3015	9.1500e-003	5.4800e-003	20.1618
Unmitigated	18.3015	9.1500e-003	5.4800e-003	20.1618

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Government Office Building	6.60543 / 4.04849	16.8569	8.7000e-003	5.2200e-003	18.6294
High School	0.317768 / 0.817119	1.4446	4.5000e-004	2.6000e-004	1.5324
Total		**18.3015**	**9.1500e-003**	**5.4800e-003**	**20.1618**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Government Office Building	6.60543 / 4.04849	16.8569	8.7000e-003	5.2200e-003	18.6294
High School	0.317768 / 0.817119	1.4446	4.5000e-004	2.6000e-004	1.5324
Total		**18.3015**	**9.1500e-003**	**5.4800e-003**	**20.1618**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.8017	0.5202	0.0000	21.8058
Unmitigated	8.8017	0.5202	0.0000	21.8058

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Government Office Building	30.92	6.2765	0.3709	0.0000	15.5497
High School	12.44	2.5252	0.1492	0.0000	6.2561
Total		**8.8017**	**0.5202**	**0.0000**	**21.8058**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Government Office Building	30.92	6.2765	0.3709	0.0000	15.5497
High School	12.44	2.5252	0.1492	0.0000	6.2561
Total		**8.8017**	**0.5202**	**0.0000**	**21.8058**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

San Jose General Plan Amendment - Option 1

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	50.00	1000sqft	3.00	50,000.00	0
Single Family Housing	36.00	Dwelling Unit	6.28	64,800.00	103

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - See CalEEMod Assumptions

Construction Phase -

Demolition -

Vehicle Trips - See CalEEMod Assumptions

Water And Wastewater - See CalEEMod Assumptions

Water Mitigation -

Fleet Mix - See CalEEMod Assumptions

Trips and VMT - BAAQMD BMPs

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.02	4.5240e-003
tblFleetMix	LDA	0.62	0.72
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.18	0.21
tblFleetMix	LHD1	0.01	2.0280e-003
tblFleetMix	LHD2	5.1260e-003	9.3800e-004
tblFleetMix	MCY	5.0770e-003	0.00
tblFleetMix	MDV	0.10	0.02
tblFleetMix	MH	6.4200e-004	0.00
tblFleetMix	MHD	0.01	2.5100e-003
tblFleetMix	OBUS	2.2990e-003	0.00
tblFleetMix	SBUS	6.5300e-004	0.00
tblFleetMix	UBUS	1.4220e-003	0.00
tblLandUse	LotAcreage	1.15	3.00
tblLandUse	LotAcreage	11.69	6.28
tblTripsAndVMT	VendorTripNumber	0.00	4.00

tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblVehicleTrips	ST_TR	1.32	1.99
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	0.68	5.00
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	6.97	4.96
tblVehicleTrips	WD_TR	9.52	9.44
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7402	7.7300e-003	0.5751	6.5000e-004		0.0460	0.0460		0.0460	0.0460	4.5760	1.5611	6.1371	9.0600e-003	2.6000e-004	6.4416
Energy	0.0128	0.1129	0.0748	7.0000e-004		8.8100e-003	8.8100e-003		8.8100e-003	8.8100e-003	0.0000	331.1012	331.1012	0.0117	4.2300e-003	332.6540
Mobile	0.0447	0.1947	0.6542	3.6000e-003	0.5314	1.5600e-003	0.5330	0.1418	1.4500e-003	0.1432	0.0000	330.1602	330.1602	6.1400e-003	0.0000	330.3136
Waste						0.0000	0.0000		0.0000	0.0000	21.3668	0.0000	21.3668	1.2627	0.0000	52.9354
Water						0.0000	0.0000		0.0000	0.0000	4.9207	23.3986	28.3193	0.0180	0.0109	32.0232
Total	**0.7977**	**0.3153**	**1.3041**	**4.9500e-003**	**0.5314**	**0.0564**	**0.5878**	**0.1418**	**0.0562**	**0.1980**	**30.8635**	**686.2210**	**717.0845**	**1.3076**	**0.0154**	**754.3679**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7402	7.7300e-003	0.5751	6.5000e-004		0.0460	0.0460		0.0460	0.0460	4.5760	1.5611	6.1371	9.0600e-003	2.6000e-004	6.4416
Energy	0.0128	0.1129	0.0748	7.0000e-004		8.8100e-003	8.8100e-003		8.8100e-003	8.8100e-003	0.0000	331.1012	331.1012	0.0117	4.2300e-003	332.6540
Mobile	0.0447	0.1947	0.6542	3.6000e-003	0.5314	1.5600e-003	0.5330	0.1418	1.4500e-003	0.1432	0.0000	330.1602	330.1602	6.1400e-003	0.0000	330.3136
Waste						0.0000	0.0000		0.0000	0.0000	21.3668	0.0000	21.3668	1.2627	0.0000	52.9354
Water						0.0000	0.0000		0.0000	0.0000	3.9366	18.9281	22.8647	0.0144	8.7400e-003	25.8287
Total	**0.7977**	**0.3153**	**1.3041**	**4.9500e-003**	**0.5314**	**0.0564**	**0.5878**	**0.1418**	**0.0562**	**0.1980**	**29.8794**	**681.7506**	**711.6299**	**1.3040**	**0.0132**	**748.1734**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.19**	**0.65**	**0.76**	**0.27**	**14.15**	**0.82**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0447	0.1947	0.6542	3.6000e-003	0.5314	1.5600e-003	0.5330	0.1418	1.4500e-003	0.1432	0.0000	330.1602	330.1602	6.1400e-003	0.0000	330.3136
Unmitigated	0.0447	0.1947	0.6542	3.6000e-003	0.5314	1.5600e-003	0.5330	0.1418	1.4500e-003	0.1432	0.0000	330.1602	330.1602	6.1400e-003	0.0000	330.3136

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	248.00	99.50	250.00	662,938	662,938
Single Family Housing	339.84	343.44	307.80	775,513	775,513
Total	587.84	442.94	557.80	1,438,451	1,438,451

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.621663	0.033362	0.179130	0.101130	0.011078	0.005126	0.013709	0.024709	0.002299	0.001422	0.005077	0.000653	0.000642
Single Family Housing	0.722903	0.038795	0.208302	0.020000	0.002028	0.000938	0.002510	0.004524	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	204.8775	204.8775	9.2600e-003	1.9200e-003	205.6802
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	204.8775	204.8775	9.2600e-003	1.9200e-003	205.6802
NaturalGas Mitigated	0.0128	0.1129	0.0748	7.0000e-004		8.8100e-003	8.8100e-003		8.8100e-003	8.8100e-003	0.0000	126.2237	126.2237	2.4200e-003	2.3100e-003	126.9738
NaturalGas Unmitigated	0.0128	0.1129	0.0748	7.0000e-004		8.8100e-003	8.8100e-003		8.8100e-003	8.8100e-003	0.0000	126.2237	126.2237	2.4200e-003	2.3100e-003	126.9738

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.319e+006	7.1100e-003	0.0647	0.0543	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	70.3869	70.3869	1.3500e-003	1.2900e-003	70.8051
Single Family Housing	1.04634e+006	5.6400e-003	0.0482	0.0205	3.1000e-004		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	55.8369	55.8369	1.0700e-003	1.0200e-003	56.1687
Total		**0.0128**	**0.1129**	**0.0748**	**7.0000e-004**		**8.8100e-003**	**8.8100e-003**		**8.8100e-003**	**8.8100e-003**	**0.0000**	**126.2237**	**126.2237**	**2.4200e-003**	**2.3100e-003**	**126.9738**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.319e+006	7.1100e-003	0.0647	0.0543	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	70.3869	70.3869	1.3500e-003	1.2900e-003	70.8051
Single Family Housing	1.04634e+006	5.6400e-003	0.0482	0.0205	3.1000e-004		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	55.8369	55.8369	1.0700e-003	1.0200e-003	56.1687
Total		**0.0128**	**0.1129**	**0.0748**	**7.0000e-004**		**8.8100e-003**	**8.8100e-003**		**8.8100e-003**	**8.8100e-003**	**0.0000**	**126.2237**	**126.2237**	**2.4200e-003**	**2.3100e-003**	**126.9738**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	413000	120.1464	5.4300e-003	1.1200e-003	120.6172
Single Family Housing	291261	84.7310	3.8300e-003	7.9000e-004	85.0630
Total		**204.8775**	**9.2600e-003**	**1.9100e-003**	**205.6802**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	413000	120.1464	5.4300e-003	1.1200e-003	120.6172
Single Family Housing	291261	84.7310	3.8300e-003	7.9000e-004	85.0630
Total		**204.8775**	**9.2600e-003**	**1.9100e-003**	**205.6802**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7402	7.7300e-003	0.5751	6.5000e-004		0.0460	0.0460		0.0460	0.0460	4.5760	1.5611	6.1371	9.0600e-003	2.6000e-004	6.4416
Unmitigated	0.7402	7.7300e-003	0.5751	6.5000e-004		0.0460	0.0460		0.0460	0.0460	4.5760	1.5611	6.1371	9.0600e-003	2.6000e-004	6.4416

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0717					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.2122	4.6500e-003	0.3085	6.4000e-004		0.0445	0.0445		0.0445	0.0445	4.5760	1.1236	5.6996	8.6500e-003	2.6000e-004	5.9937
Landscaping	8.0000e-003	3.0800e-003	0.2666	1.0000e-005		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003	0.0000	0.4375	0.4375	4.2000e-004	0.0000	0.4480
Total	**0.7402**	**7.7300e-003**	**0.5751**	**6.5000e-004**		**0.0460**	**0.0460**		**0.0460**	**0.0460**	**4.5760**	**1.5611**	**6.1371**	**9.0700e-003**	**2.6000e-004**	**6.4416**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0717					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.2122	4.6500e-003	0.3085	6.4000e-004		0.0445	0.0445		0.0445	0.0445	4.5760	1.1236	5.6996	8.6500e-003	2.6000e-004	5.9937
Landscaping	8.0000e-003	3.0800e-003	0.2666	1.0000e-005		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003	0.0000	0.4375	0.4375	4.2000e-004	0.0000	0.4480
Total	**0.7402**	**7.7300e-003**	**0.5751**	**6.5000e-004**		**0.0460**	**0.0460**		**0.0460**	**0.0460**	**4.5760**	**1.5611**	**6.1371**	**9.0700e-003**	**2.6000e-004**	**6.4416**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	22.8647	0.0144	8.7400e-003	25.8287
Unmitigated	28.3193	0.0180	0.0109	32.0232

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	11.5625 / 0	22.2916	0.0149	9.0700e-003	25.3660
Single Family Housing	2.34554 / 1.47871	6.0276	3.0900e-003	1.8500e-003	6.6572
Total		**28.3193**	**0.0180**	**0.0109**	**32.0232**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	9.25 / 0	17.8333	0.0119	7.2500e-003	20.2928
Single Family Housing	1.87644 / 1.38851	5.0314	2.4800e-003	1.4800e-003	5.5359
Total		**22.8647**	**0.0144**	**8.7300e-003**	**25.8287**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	21.3668	1.2627	0.0000	52.9354
Unmitigated	21.3668	1.2627	0.0000	52.9354

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	62	12.5854	0.7438	0.0000	31.1799
Single Family Housing	43.26	8.7814	0.5190	0.0000	21.7555
Total		**21.3668**	**1.2628**	**0.0000**	**52.9354**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	62	12.5854	0.7438	0.0000	31.1799
Single Family Housing	43.26	8.7814	0.5190	0.0000	21.7555
Total		**21.3668**	**1.2628**	**0.0000**	**52.9354**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

San Jose General Plan Amendment - Option 2

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	185.00	1000sqft	9.28	185,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - See CalEEMod Assumptions

Vehicle Trips - See CalEEMod Assumptions

Water And Wastewater - See CalEEMod Assumptions

Water Mitigation -

Fleet Mix - See CalEEmod Assumptions

Demolition -

Trips and VMT - See CalEEMod Assumptions

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	4.25	9.28
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblVehicleTrips	ST_TR	1.32	1.99
tblVehicleTrips	SU_TR	0.68	5.00
tblVehicleTrips	WD_TR	6.97	4.96
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8191	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3100e-003	3.3100e-003	1.0000e-005	0.0000	3.5200e-003
Energy	0.0263	0.2392	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	704.9732	704.9732	0.0251	8.9300e-003	708.2627
Mobile	0.1010	0.5384	1.3174	7.0900e-003	0.9121	3.0000e-003	0.9151	0.2441	2.7900e-003	0.2469	0.0000	654.0896	654.0896	0.0169	0.0000	654.5128
Waste						0.0000	0.0000		0.0000	0.0000	46.5661	0.0000	46.5661	2.7520	0.0000	115.3656
Water						0.0000	0.0000		0.0000	0.0000	15.1361	67.3429	82.4790	0.0551	0.0336	93.8542
Total	**0.9464**	**0.7776**	**1.5200**	**8.5300e-003**	**0.9121**	**0.0212**	**0.9332**	**0.2441**	**0.0210**	**0.2651**	**61.7022**	**1,426.4090**	**1,488.1112**	**2.8492**	**0.0425**	**1,571.9989**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8191	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3100e-003	3.3100e-003	1.0000e-005	0.0000	3.5200e-003
Energy	0.0263	0.2392	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	704.9732	704.9732	0.0251	8.9300e-003	708.2627
Mobile	0.1010	0.5384	1.3174	7.0900e-003	0.9121	3.0000e-003	0.9151	0.2441	2.7900e-003	0.2469	0.0000	654.0896	654.0896	0.0169	0.0000	654.5128
Waste						0.0000	0.0000		0.0000	0.0000	46.5661	0.0000	46.5661	2.7520	0.0000	115.3656
Water						0.0000	0.0000		0.0000	0.0000	12.1089	53.8743	65.9832	0.0441	0.0268	75.0834
Total	**0.9464**	**0.7776**	**1.5200**	**8.5300e-003**	**0.9121**	**0.0212**	**0.9332**	**0.2441**	**0.0210**	**0.2651**	**58.6750**	**1,412.9404**	**1,471.6154**	**2.8381**	**0.0358**	**1,553.2280**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.91**	**0.94**	**1.11**	**0.39**	**15.80**	**1.19**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1010	0.5384	1.3174	7.0900e-003	0.9121	3.0000e-003	0.9151	0.2441	2.7900e-003	0.2469	0.0000	654.0896	654.0896	0.0169	0.0000	654.5128
Unmitigated	0.1010	0.5384	1.3174	7.0900e-003	0.9121	3.0000e-003	0.9151	0.2441	2.7900e-003	0.2469	0.0000	654.0896	654.0896	0.0169	0.0000	654.5128

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	917.60	368.15	925.00	2,452,869	2,452,869
Total	917.60	368.15	925.00	2,452,869	2,452,869

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.621663	0.033362	0.179130	0.101130	0.011078	0.005126	0.013709	0.024709	0.002299	0.001422	0.005077	0.000653	0.000642

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	444.5418	444.5418	0.0201	4.1600e-003	446.2837
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	444.5418	444.5418	0.0201	4.1600e-003	446.2837
NaturalGas Mitigated	0.0263	0.2392	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	260.4314	260.4314	4.9900e-003	4.7700e-003	261.9790
NaturalGas Unmitigated	0.0263	0.2392	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	260.4314	260.4314	4.9900e-003	4.7700e-003	261.9790

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	4.8803e+006	0.0263	0.2392	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	260.4314	260.4314	4.9900e-003	4.7700e-003	261.9790
Total		**0.0263**	**0.2392**	**0.2010**	**1.4400e-003**		**0.0182**	**0.0182**		**0.0182**	**0.0182**	**0.0000**	**260.4314**	**260.4314**	**4.9900e-003**	**4.7700e-003**	**261.9790**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	4.8803e+006	0.0263	0.2392	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182	0.0000	260.4314	260.4314	4.9900e-003	4.7700e-003	261.9790
Total		**0.0263**	**0.2392**	**0.2010**	**1.4400e-003**		**0.0182**	**0.0182**		**0.0182**	**0.0182**	**0.0000**	**260.4314**	**260.4314**	**4.9900e-003**	**4.7700e-003**	**261.9790**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	1.5281e+006	444.5418	0.0201	4.1600e-003	446.2837
Total		**444.5418**	**0.0201**	**4.1600e-003**	**446.2837**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	1.5281e+006	444.5418	0.0201	4.1600e-003	446.2837
Total		**444.5418**	**0.0201**	**4.1600e-003**	**446.2837**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8191	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3100e-003	3.3100e-003	1.0000e-005	0.0000	3.5200e-003
Unmitigated	0.8191	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3100e-003	3.3100e-003	1.0000e-005	0.0000	3.5200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7225					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.5000e-004	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3100e-003	3.3100e-003	1.0000e-005	0.0000	3.5200e-003
Total	**0.8191**	**2.0000e-005**	**1.6900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.3100e-003**	**3.3100e-003**	**1.0000e-005**	**0.0000**	**3.5200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7225					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.5000e-004	2.0000e-005	1.6900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3100e-003	3.3100e-003	1.0000e-005	0.0000	3.5200e-003
Total	**0.8191**	**2.0000e-005**	**1.6900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.3100e-003**	**3.3100e-003**	**1.0000e-005**	**0.0000**	**3.5200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	65.9832	0.0441	0.0268	75.0834
Unmitigated	82.4790	0.0551	0.0336	93.8542

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	42.7813 / 0	82.4790	0.0551	0.0336	93.8542
Total		**82.4790**	**0.0551**	**0.0336**	**93.8542**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	34.225 / 0	65.9832	0.0441	0.0268	75.0834
Total		**65.9832**	**0.0441**	**0.0268**	**75.0834**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	46.5661	2.7520	0.0000	115.3656
Unmitigated	46.5661	2.7520	0.0000	115.3656

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	229.4	46.5661	2.7520	0.0000	115.3656
Total		**46.5661**	**2.7520**	**0.0000**	**115.3656**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	229.4	46.5661	2.7520	0.0000	115.3656
Total		**46.5661**	**2.7520**	**0.0000**	**115.3656**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation