

LOS PINOS APARTMENTS AIR QUALITY AND GREENHOUSE GAS EMISSIONS ASSESSMENT

Sonoma County, California

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I&R Project: #20-096

Introduction

The purpose of this report is to address air quality and greenhouse gas (GHG) emissions impacts associated with the proposed multifamily residential development (Los Pinos Apartments) at 3496 Santa Rosa Avenue in Sonoma County, California. Potential air quality impacts from this project would result from the demolition of the existing land uses, construction of the new buildings and infrastructure, and operation of the project. Air pollutants and GHG emissions associated with construction and operation of the project were predicted using appropriate computer models. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).¹

Project Description

The project proposes to construct seven, two-story residential buildings on the vacant 2.46-acre parcel. The buildings would provide 50 dwelling units totaling approximately 53,540 square feet (sf). Serving the residents would be outdoor common areas and approximately 123 surface parking spaces.

Setting

The project is located in Sonoma County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_x). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM₁₀) and fine particulate matter where particles have a diameter of 2.5 micrometers or less (PM_{2.5}). Elevated concentrations of PM₁₀ and PM_{2.5} are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

¹ Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

Regulatory Agencies

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.² The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.³

Sonoma County General Plan 2020

The project is within Sonoma County and subject to the policies within the Sonoma County general Plan. The General Plan 2020 was adopted by the Sonoma County Board of Supervisors on September 23, 2008 and last amended in August 2016.⁴ The General Plan 2020 includes goals to improve air quality in the region and reduce GHG emissions. To achieve these goals, the General Plan contains the following policies:

Goal OSRC-16: Preserve and maintain good air quality and provide for an air quality standard that will protect human health and preclude crop, plant and property damage in accordance with the requirements of the Federal and State Clean Air Acts.

Objective OSRC-16.1: Minimize air pollution and greenhouse gas emissions.

Objective OSRC-16.2: Encourage reduced motor vehicle use as a means of reducing resultant air pollution.

- Policy OSRC-16a: Require that development projects be designed to minimize air emissions. Reduce direct emissions by utilizing construction techniques that decrease the need for space heating and cooling.*⁵

² Available online: <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>. Accessed: November 21, 2014.

³ Bay Area Air Quality Management District. 2017. *BAAQMD CEQA Air Quality Guidelines*. May.

⁴ County of Sonoma, 2008. *Sonoma County General Plan 2020*. September. Web: <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/General-Plan/Organization-and-Overview/>

⁵ Asterisk (*) indicates a mitigating policy

- Policy OSRC-16b: Encourage public transit, ridesharing and van pooling, shortened and combined motor vehicle trips to work and services, use of bicycles, and walking. Minimize single passenger motor vehicle use.
- Policy OSRC-16c: Refer projects to the local air quality districts for their review.
- Policy OSRC-16d: Review proposed changes in land use designations for potential deterioration of air quality and deny them unless they are consistent with the air quality levels projected in the General Plan EIR.*
- Policy OSRC-16e: Cooperate with the local air quality district to monitor air pollution and enforce mitigations in areas affected by emissions from fireplaces and woodburning stoves.*
- Policy OSRC-16f: Encourage the adoption of standards, the development of new technology, and retrofitting to reduce air pollution resulting from geothermal development.*
- Policy OSRC-16g: Residential units shall be required to only install fireplaces, woodstoves or any other residential wood-burning devices that meet the gram-per-hour EPA or Oregon DEQ wood heater emissions limits (exempt devices are not allowed).*
- Policy OSRC-16h: Require that development within the Bay Area Air Quality Management District that generates high numbers of vehicle trips, such as shopping centers and business parks, incorporate air quality mitigation measures in their design.
- Policy OSRC-16i: Ensure that any proposed new sources of toxic air contaminants or odors provide adequate buffers to protect sensitive receptors and comply with applicable health standards. Promote land use compatibility for new development by using buffering techniques such as landscaping, setbacks, and screening in areas where such land uses abut one another.*
- Policy OSRC-16j: Require consideration of odor impacts when evaluating discretionary land uses and development projects near wastewater treatment plant or similar uses.
- Policy OSRC-16k: Require that discretionary projects involving sensitive receptors (facilities or land uses that include members of the population sensitive to the effects of air pollutants such as children, the elderly, and people with illnesses) proposed near the Highway 101 corridor include an analysis of mobile source toxic air contaminant health risks. Project review should, if necessary, identify design mitigation measures to reduce health risks to acceptable levels.*
- Policy OSRC-16l: Work with the applicable Air Quality districts to adopt a diesel particulate ordinance. The ordinance should prioritize on site over off site mitigation of diesel particulate emissions in order to protect neighboring sensitive receptors from these emissions.*

- Policy OSRC-16m: Provide education and outreach to the public regarding the Air Quality Districts’ “Spare the Air” Programs.*

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. Nearby sensitive receptors include the residents in the mobile home parks to the west of the project opposite Santa Rosa Avenue and residents in single-family homes to the east and north of the project site.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under the CEQA and these significance thresholds were contained in the District’s 2011 *CEQA Air Quality Guidelines*. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the *CEQA Air Quality Guidelines* in 2017 to include the latest significance thresholds, which were used in this analysis and are summarized in Table 1.

Table 1. BAAQMD CEQA Air Quality Exceedance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54	54	10
NO _x	54	54	10
PM ₁₀	82 (Exhaust)	82	15
PM _{2.5}	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Greenhouse Gas Emissions			
Land Use Projects – direct and indirect emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons annually or 4.6 metric tons per capita (for 2020) 660 metric tons annually or 2.8 metric tons per capita (for 2030)*		
Note: ROG = reactive organic gases, NO _x = nitrogen oxides, PM ₁₀ = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, PM _{2.5} = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases. *BAAQMD does not have a recommended post-2020 GHG threshold.			

AIR QUALITY IMPACTS

Criteria Pollutant Emissions – Project Construction and Operation

The Bay Area is considered a non-attainment area for ground-level ozone and PM_{2.5} under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM₁₀ under the California Clean Air Act, but not the federal act. The area has attained both State and federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and PM₁₀, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NO_x), PM₁₀, and PM_{2.5} and apply to both construction period and operational period impacts.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from on-site construction activity and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CARB Emission FACTors 2017 (EMFAC2017) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks and haul trucks.⁶ The model output from CalEEMod along with construction inputs are included as *Attachment 1* and EMFAC2017 vehicle emissions modeling outputs are included in *Attachment 2*.

Land Use Inputs

The project is comprised of seven (7), two-story apartment buildings totaling 50 dwelling units with a total residential square footage estimated at approximately 53,540-sf. Approximately 123 surface parking spaces will be constructed along with the apartment buildings on 2.47 acres adjacent to Santa Rosa Avenue. Therefore, the CalEEMod land use inputs included:

- Apartments Low Rise
 - 50 dwelling units
 - 2.47 acres
 - 53,541-sf
- Parking Lot
 - 123 spaces
 - 80,784-sf

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario,

⁶ See CARB's EMFAC2017 Web Database at <https://www.arb.ca.gov/emfac/2017/>

including equipment list and schedule, were based on default CalEEMod information for a project of this type and size.

CalEEMod provided default values based on land use inputs for construction schedule, equipment, and phases. Within each phase, the default quantity of equipment to be used along with the average hours per day and total number of workdays was provided. It was assumed that the earliest possible start date would be January 2021. The first earliest operational year was assumed to be 2022.

Construction Traffic Emissions

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2014 motor vehicle emission factor model. This model has been superseded by the EMFAC2017 model; however, CalEEMod has not been updated to include EMFAC2017. Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod. Because the property is currently vacant, no haul trips were computed for demolition material. An estimate of cement and asphalt truck trips was made assuming 2,000 cubic yards of concrete would be used (400 total trips) and two loads of asphalt would be delivered per day during the paving phase (40 total trips). CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total number of these trips were computed by multiplying the daily trip rate by the number of workdays in that phase. It was assumed the site would not require soil import/export.

The construction traffic estimates were combined with EMFAC2017 on-road emission rates for the year 2021 in Sonoma County. EMFAC2017 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for construction trips was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1 and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for demolition material export. Since CalEEMod does not address cement/asphalt trucks, these were treated as vendor travel distances (7.3 miles). Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. Table 2 provides the traffic inputs that were combined with the EMFAC2017 emission database to compute vehicle emissions.

Table 2. Construction Traffic Data Used for EMFAC2017 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker ¹	Total Vendor ¹	Total Haul ²	
Vehicle mix ¹	69.8% LDA 7.4% LDT1 22.8% LDT2	58.9% MHDT 41.1% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0 Demo 7.3 Vendor (Concrete/Asphalt)	5 Minute Truck Idle Time
Trips per Phase				
Demolition	260	-	-	
Site Preparation	24	-	-	
Grading	60	-	-	
Trenching	60	-	-	
Building Construction	15,400	4,180	400	Estimated 2,000-cy Concrete
Architectural Coating	140	-	-	
Paving	150	-	40	Estimated 2 Asphalt Roundtrips/Day
Notes: ¹ Based on 2021 EMFAC2017 light-duty vehicle fleet mix for Sonoma County. ² Includes demolition trips estimated by CalEEMod based on amount of material to be removed.				

Summary of Computed Construction Period Emissions

Annual emissions were predicted using CalEEMod and the estimated 269 construction workdays. Average daily emissions were computed by dividing the total construction emissions by the number of construction days. Table 3 shows average daily construction emissions of ROG, NO_x, PM₁₀ exhaust, and PM_{2.5} exhaust during construction of the project. As indicated in Table 3, predicted construction period emissions would not exceed the BAAQMD significance thresholds.

Table 3. Construction Period Emissions

Scenario	ROG	NO _x	PM ₁₀ Exhaust	PM _{2.5} Exhaust
Annual Total Construction Emissions (tons)	1.2	2.3	0.13	0.11
Average Daily Emissions (pounds/day)¹	8.6	17.5	0.9	0.8
<i>BAAQMD Thresholds (pounds per day)</i>	54 lbs./day	54 lbs./day	82 lbs./day	54 lbs./day
Exceed Threshold?	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

¹Assumes 269 workdays.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM₁₀ and PM_{2.5}. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less than significant if best management practices are implemented to reduce these emissions. *Mitigation Measure AQ-1 would implement BAAQMD-recommended best management practices.*

Mitigation Measure AQ-1: Include measures to control dust and exhaust during construction.

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as practicable. Building pads shall be laid as soon as practicable after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Mitigation Measure AQ-1

The measures included above would be consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines. Air pollutant emissions from project construction would be further reduced with these measures.

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by future residents, visitors, and vendors. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. This analysis assumed that the project would be fully operating in the year 2023. Emissions associated with build-out later than 2023 would be lower.

Operational Trip Generation Rates

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rate provided by the applicant was used in the model.⁷ For the proposed development the forecasted weekday daily trip rate was 7.32 trips/unit. The Saturday and Sunday trip rates were assumed to be the weekday rate adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips. The default trip lengths and trip types specified by CalEEMod were used.

EMFAC2017 Adjustment

As previously described, the vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2014, which is an older CARB emission inventory for on-road mobile sources. Since the release of CalEEMod Version 2016.3.2, new emission factors have been produced by CARB. EMFAC2017 became available for use in March 2018 and approved by the EPA in August 2019. It includes the latest data on California's car and truck fleets and travel activity. Additionally, CARB has recently released EMFAC off-model adjustment factors to account for the Safer Affordable Efficient (SAFE) Vehicle Rule Part one.⁸ The SAFE vehicle Rule Part One revoked California's authority to set its own GHG emission standards and set zero emission vehicle mandates in California. As a result of this ruling, mobile criteria pollutant emissions would increase for light-duty vehicles. Therefore, the CalEEMod vehicle emission factors and fleet mix were updated with the emission rates and fleet mix from EMFAC2017, which were adjusted with the CARB EMFAC off-model adjustment factors. Annual on-road emission rates for Sonoma County, 2023 were used. More details about the updates in emissions calculation methodologies and data are available in the EMFAC2017 Technical Support Document (See *Attachment 2*).⁹

⁷ Email correspondence with Jean Kapolchok, Kapolchok & Associates, May 18, 2020.

⁸ California Air Resource Board, 2019. *EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One*. November. Web: https://ww3.arb.ca.gov/msei/emfac_off_model_adjustment_factors_final_draft.pdf

⁹ See CARB 2018: <https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac>

Energy

CalEEMod defaults for energy use were used, which include the 2016 Title 24 Building Standards. GHG emissions modeling included the indirect emissions from electricity consumption. The electricity produced emission rate was then modified in CalEEMod. CalEEMod has a default emission factor of 641.3 pounds of CO₂ per megawatt of electricity produced, which is based on Pacific Gas and Electric's (PG&E) 2008 emissions rate. However, PG&E published in 2019 emissions rates for 2010 through 2017, which showed the emission rate for delivered electricity had been reduced to 210 pounds CO₂ per megawatt of electricity delivered in the year 2017.¹⁰ This intensity factor was used in the model and it was assumed that all power was supplied by PG&E.

Other Inputs

Default model assumptions for emissions associated with solid waste generation and water/wastewater use were applied to the project. Water/wastewater use was changed to 100% aerobic conditions to represent wastewater treatment plant conditions. All hearths were assumed to be natural gas.

Existing Uses

The project would be built on a parcel that is mostly undeveloped except for a vacant single-family residence. This use produces low to no operational and traffic emissions that would considerably offset emissions from the proposed project. Therefore, the emissions from the existing uses emissions were not considered.

Summary of Computed Operational Period Emissions

Annual emissions were predicted using CalEEMod and daily emissions were estimating assuming 365 days of operation. Table 4 shows average daily emissions of ROG, NO_x, total PM₁₀, and total PM_{2.5} during operation of the project. The operational period emissions would not exceed the BAAQMD significance thresholds.

Table 4. Operational Period Emissions

Scenario	ROG	NO _x	PM ₁₀	PM _{2.5}
2023 Project Operational Emissions (tons/year)	0.58 tons	0.48 tons	0.40 tons	0.12 tons
BAAQMD Thresholds (tons/year)	10 tons	10 tons	15 tons	10 tons
<i>Exceed Threshold?</i>	No	No	No	No
2023 Project Operational Emissions (pounds/day) ¹	3.2 lbs.	2.7 lbs.	2.2 lbs.	0.6 lbs.
BAAQMD Thresholds (pounds/day)	54 lbs.	54 lbs.	82 lbs.	54 lbs.
<i>Exceed Threshold?</i>	No	No	No	No

Notes: ¹ Assumes 365-day operation.

¹⁰ PG&E, 2019. *Corporate Responsibility and Sustainability Report*. Web: http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf

GREENHOUSE GAS EMISSIONS IMPACTS

Setting

Greenhouse gases (GHGs) trap heat in the atmosphere and regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO₂) and water vapor but there are also several others, most importantly methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). These gases are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO₂ and N₂O are byproducts of fossil fuel combustion.
- N₂O is associated with agricultural operations such as fertilization of crops.
- CH₄ is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO₂ being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO₂ equivalents (CO₂e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Recent Regulatory Actions

Assembly Bill 32 (AB 32), California Global Warming Solutions Act (2006)

AB 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards

Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008 that contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

Senate Bill 375, California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g. Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

SB 350 Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Executive Order EO-B-30-15 (2015) and SB 32 GHG Reduction Targets

In April 2015, Governor Brown signed Executive Order which extended the goals of AB 32, setting a greenhouse gas emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed SB 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*. While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target (note that the AB 32 Scoping Plan only addressed 2020 targets and a long-term

goal). Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit-oriented housing;
- Develop walkable and bikeable communities;
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing methane and or HFCs by 40 percent.

In the updated Scoping Plan, CARB recommends statewide targets of no more than 6 metric tons CO_{2e} per capita (statewide) by 2030 and no more than 2 metric tons CO_{2e} per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2017, total gross nationwide GHG emissions were 6,457 million metric tons (MMT). These emissions were lower than peak levels of 7,370 MMT that were emitted in 2008. Relative to 1990 levels, these emissions were CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2017 emissions.¹¹ In 2017, GHG emissions from statewide emitting activities were 424 MMT. The 2017 emissions have decreased by 14 percent since peak levels in 2004 and are 7 MMT below the 1990 emissions level and the State's 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.1 MT per person to 10.7 MT per person in 2017. The most recent Bay Area emission inventory was completed for the year 2011, where emissions were 87 MMT.¹² As a point of comparison, statewide emissions were about 444 MMT in 2011.

¹¹ CARB. 2019. *2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017*. Available at https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf accessed on Nov. 26, 2019.

¹² BAAQMD. 2015. *Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011*. January. Available at http://www.baaqmd.gov/~media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf accessed Nov. 26, 2019.

Regulatory Agency

Climate Action 2020 and Beyond – Sonoma County Regional Climate Action Plan

Climate Action 2020 and Beyond is a regional climate action plan (CAP) established by Sonoma County to reduce GHG emissions.¹³ The CAP was published in July 2016. The CAP met the criteria for a Qualified GHG Reduction Strategy, established by the BAAQMD CEQA Guidelines. The CAP includes measures to reduce GHG emissions by 25 percent below 1990 levels by 2020, which is the primary goal. The CAP’s long-term goals include to reduce GHG emissions by 40 percent in 2030 and by 80 percent in 2050. The CAP includes goals and GHG reduction measures for six different GHG sources as seen in Figure 1.

Additionally, the CAP includes per capita targets to assess whether the long-term goals are being met. The 2020 County Target is 5.8 MT CO₂e per capita, while the 2040 and 2050 targets are 2.6 and 1.3 MT CO₂e per capita, respectively.

Figure 1. CAP Greenhouse Gas Reduction Goals

Source	Key	Goals
Building Energy		<ol style="list-style-type: none"> 1. Increase building energy efficiency 2. Increase renewable energy use 3. Switch equipment from fossil fuel to electricity
Transportation & Land Use		<ol style="list-style-type: none"> 4. Reduce travel demand through focused growth 5. Encourage a shift toward low-carbon transportation options 6. Increase vehicle and equipment fuel efficiency 7. Encourage a shift toward low-carbon fuels in vehicles and equipment 8. Reduce idling
Solid Waste		<ol style="list-style-type: none"> 9. Increase solid waste diversion 10. Increase capture and use of methane from landfills
Water & Wastewater		<ol style="list-style-type: none"> 11. Reduce water consumption 12. Increase recycled water and greywater use 13. Increase water and wastewater infrastructure efficiency 14. Increase use of renewable energy in water and wastewater systems
Livestock & Fertilizer		<ol style="list-style-type: none"> 15. Reduce emissions from livestock operations 16. Reduce emissions from fertilizer use
Advanced Climate Initiatives		<ol style="list-style-type: none"> 17. Protect and enhance the value of open and working lands 18. Promote sustainable agriculture 19. Increase carbon sequestration 20. Reduce emissions from consumption of goods and services, including food

Source: Climate Action 2020 and Beyond

¹³ Sonoma County Regional Climate Protection Authority, 2016. *Climate Action 2020 and Beyond*. July. Web: https://rcpa.ca.gov/wp-content/uploads/2016/07/CA2020_Plan_7-7-16_web.pdf

The following local GHG reduction measures from CAP are applicable to the project:

- **Goal: Increase building energy efficiency**
 - **Expand the Green Building Ordinance Energy Code:** Require new residential and nonresidential development to exceed CALGreen Tier 1 voluntary standards by complying with CalGREEN Tier 2 standards
- **Goal: Increase renewable energy use**
 - **Solar in New Residential Development:** Implement solar energy installation requirements for new residential buildings to increase renewable energy generation.
 - **Solar in New Nonresidential Developments:** Implement solar energy installation requirements for new nonresidential development to increase renewable energy generation
- **Goal: Reduce travel demand through focused growth**
 - **Mixed-Use Development in City Centers and along Transit Corridors:** Identify specific areas for transit-oriented, city-centered, mixed-use development, focusing on identified existing and planned transit corridors.
 - **Increase Transit Accessibility:** Encourage new residential projects consisting of 25 units or more to be located within 0.5 mile of a transit node, shuttle service, or bus route with regularly scheduled daily service.
 - **Affordable Housing Linked to Transit:** Provide affordable housing developments near transit corridors, transit hubs, and downtown cores.
 - **Local Transportation Demand Management (TDM) Program:** Implement support for voluntary TDM measures for employers with 49 employees or fewer, voluntary TDM measures for larger employers that are in excess of the TRO, and requirements for TDM measures in larger new residential projects.
- **Goal: Encourage a shift toward low-carbon fuels in vehicles and equipment**
 - **Electric Vehicle (EV) charging Station Program:** Develop local charging stations to support EVs
 - **Electricity Construction Equipment:** Incentivize replacement of fossil-fuel construction equipment with alternatively fueled or electric equipment
 - **Reduce Fossil Fuel Use in Equipment through Efficiency of Fuel Switching:** Encourage use of more efficient equipment and support equipment conversion to alternative fuels with lower GHG intensity.
- **Goal: Reduce Idling**
 - **Idling Ordinance:** Limit idling of all commercial vehicles to 3 minutes, except as necessary for the loading and unloading of cargo within a period not to exceed 30 minutes.
 - **Idling Ordinance for Construction Equipment:** Adopt an ordinance that limits idling time to 3 minutes for heavy-duty construction equipment.
- **Goal: Increase solid waste diversion**
 - **Create Construction and Demolition Reuse and Recycling Ordinance:** Implement

goal for construction and demolition waste.

- **Goal: Reduce Water Consumption**
 - **Water Conservation for New Construction:** Require adoption of the voluntary CalGreen Tier 1 water efficiency measures for new residential and nonresidential construction.
- **Goal: Increase recycled water and greywater use**
 - **Greywater use:** Incentivize greywater use instead of potable water for residential non-potable use.

Additionally, the CAP includes the Community Climate Action Plan Compliance Checklist (Appendix A in the CAP) to ensure that all new development projects are compliant with the County's CAP measures. If a new development complies with the CAP, then the new development would be found to have a less-than-significant impact for GHG emissions.

Significance Thresholds

The BAAQMD's CEQA Air Quality Guidelines do not use quantified thresholds for projects that are in a jurisdiction with a qualified GHG reductions plan (i.e., a Climate Action Plan). The plan has to address emissions associated with the period that the project would operate (e.g., beyond year 2020). For quantified emissions, the guidelines recommended a GHG threshold of 1,100 metric tons or 4.6 metric tons (MT) per capita. These thresholds were developed based on meeting the 2020 GHG targets set in the scoping plan that addressed AB 32. Development of the project would occur beyond 2020, so a threshold that addresses a future target is appropriate.

BAAQMD has not published quantified thresholds post 2020. Sonoma County has elected to rely on the compliance with the County's CAP Checklist measures to determine significance for GHG emissions.

Greenhouse Gas Emissions – Project Operation

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions from the project were computed for information purposes. Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines and the County's Climate Action Plan.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above. The effects from project-specific sustainability measures were not included in this analysis. The CalEEMod output is included in *Attachment 1*.

Service Population Emissions

The project service population efficiency rate is based on the number of future residents. For this project, the number of future residents was estimated by multiplying the total number of residential units (i.e. 50 units) by the persons per household rate for Santa Rosa found in the California Department of Finance Population and Housing Estimate report.¹⁴ Using the 2.57 persons per household 2019 estimate for Santa Rosa, there would be approximately 129 future residents of the project. This population was used to calculate the per capita emissions.

Construction GHG Emissions

GHG emissions associated with construction were computed to be 374 MT of CO_{2e} for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable.

Operational GHG Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to estimate daily emissions associated with operation of the fully-developed site under the proposed project. As shown in Table 5, annual GHG emissions resulting from operation of the proposed project are predicted to be 502 metric tons (MT) of CO_{2e} in 2022 and 418 MT of CO_{2e} in 2030. The service population emission for the years 2022 and 2030 are predicted to be 3.9 and 3.2 MT/CO_{2e}/year/service population.

The project is subject to the Sonoma County's CAP to meet AB 32 requirements. The implementation of *Mitigation Measure GHG-1*, which requires the project to use the CAP checklist, would demonstrate the project's consistency with the County's CAP.

Table 5. Annual Project GHG Emissions (CO_{2e}) in Metric Tons and Per Capita

Source Category	Proposed Project in 2022	Proposed Project in 2030
Area	36.3	36.3
Energy Consumption	51.1	51.1
Mobile	398.6	314.5
Solid Waste Generation	11.6	11.6
Water Usage	4.4	4.4
Total (MT CO _{2e} /year)	501.9	417.8
Service Population Emissions (MT CO _{2e} /year/service population)	3.9	3.2

¹⁴State of California, Department of Finance. "E-5 Population and Housing Estimates for Cities, Counties, and the State, 2010-2019." Accessed: May 6, 2020. Available at: <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/>.

Mitigation Measure GHG-1: Sonoma County’s CAP Appendix A Community Climate Action Plan Compliance Checklist or other qualified GHG program in effect, shall be submitted along with any application for the project, demonstrating compliance with all mandatory requirements of the Sonoma County’s CAP Appendix A Community Climate Action Plan Compliance Checklist, except where the item is not applicable or where a suitable substitution is provided.

Supporting Documentation

Attachment 1 includes the CalEEMod output for project construction and operational criteria air pollutant and GHG emissions. The operational output for 2030 project uses are also included in this attachment. Also included are any modeling assumptions.

Attachment 2 includes the EMFAC2017 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

Attachment 3 is the Community Climate Action Plan Compliance Checklist contained in the County’s Climate Action Plan.

Attachment 1: CalEEMod Inputs and Outputs

Trip Generation Summary

Land Use	Units	Daily Trips		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Multifamily Housing (Low-Rise)	50 du	7.32	366	0.46	23	5	18	0.56	28	18	10

du = dwelling units

Table 3. Trip Generation Summary

Los Pinos Apartments - Sonoma-North Coast County, Annual

**Los Pinos Apartments
Sonoma-North Coast County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	123.00	Space	0.00	80,784.00	0
Apartments Low Rise	50.00	Dwelling Unit	2.47	53,541.00	143

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	75
Climate Zone	4			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	210	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Most recent Intensity Factor

Land Use - Measured off of site plan

Construction Phase - Added trenching

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Trip Emissions caled using EMFAC2017 spreadsheet. Assume 2,000 CY concrete, 10CY per delivery, 200 RTs, 400 Trips. Assume asphalt is 2 RTs per day.

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tblVehicleEF	LHD2	23.05	7.02
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	1.72	1.60
tblVehicleEF	LHD2	0.56	0.18
tblVehicleEF	LHD2	1.3540e-003	1.5064e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.1100e-004	1.1721e-004
tblVehicleEF	LHD2	1.2960e-003	1.4412e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	2.7010e-003	2.7245e-003
tblVehicleEF	LHD2	0.02	0.02

tblVehicleEF	LHD2	3.7800e-004	1.0777e-004
tblVehicleEF	LHD2	9.1800e-004	9.5964e-004
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	5.0100e-004	4.9924e-004
tblVehicleEF	LHD2	0.14	0.14
tblVehicleEF	LHD2	0.10	0.30
tblVehicleEF	LHD2	0.13	0.04
tblVehicleEF	LHD2	1.4200e-004	1.4335e-004
tblVehicleEF	LHD2	7.0580e-003	7.5928e-003
tblVehicleEF	LHD2	2.5400e-004	6.9500e-005
tblVehicleEF	LHD2	9.1800e-004	9.5964e-004
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	5.0100e-004	4.9924e-004
tblVehicleEF	LHD2	0.16	0.16
tblVehicleEF	LHD2	0.10	0.30
tblVehicleEF	LHD2	0.14	0.05
tblVehicleEF	MCY	0.46	0.36
tblVehicleEF	MCY	0.18	0.27
tblVehicleEF	MCY	22.36	22.34
tblVehicleEF	MCY	10.28	9.13
tblVehicleEF	MCY	175.46	218.02
tblVehicleEF	MCY	48.46	64.07
tblVehicleEF	MCY	1.20	1.20
tblVehicleEF	MCY	0.33	0.28
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	4.0000e-003	4.0000e-003
tblVehicleEF	MCY	2.2730e-003	2.1201e-003
tblVehicleEF	MCY	5.1600e-003	3.7074e-003

tblVehicleEF	MCY	5.0400e-003	5.0400e-003
tblVehicleEF	MCY	2.1350e-003	1.9895e-003
tblVehicleEF	MCY	4.8910e-003	3.5076e-003
tblVehicleEF	MCY	0.94	1.82
tblVehicleEF	MCY	0.99	0.91
tblVehicleEF	MCY	0.51	0.97
tblVehicleEF	MCY	2.55	2.55
tblVehicleEF	MCY	1.00	2.72
tblVehicleEF	MCY	2.42	2.11
tblVehicleEF	MCY	2.1930e-003	2.1575e-003
tblVehicleEF	MCY	7.2400e-004	6.3403e-004
tblVehicleEF	MCY	0.94	1.82
tblVehicleEF	MCY	0.99	0.91
tblVehicleEF	MCY	0.51	0.97
tblVehicleEF	MCY	3.10	3.10
tblVehicleEF	MCY	1.00	2.72
tblVehicleEF	MCY	2.63	2.29
tblVehicleEF	MDV	0.02	6.0284e-003
tblVehicleEF	MDV	0.03	0.10
tblVehicleEF	MDV	1.46	1.18
tblVehicleEF	MDV	4.45	3.81
tblVehicleEF	MDV	496.04	418.08
tblVehicleEF	MDV	109.82	89.01
tblVehicleEF	MDV	0.21	0.13
tblVehicleEF	MDV	0.41	0.44
tblVehicleEF	MDV	0.04	0.04
tblVehicleEF	MDV	8.0000e-003	8.0000e-003
tblVehicleEF	MDV	2.0630e-003	1.8362e-003
tblVehicleEF	MDV	2.7920e-003	2.2140e-003
tblVehicleEF	MDV	0.02	0.02

tblVehicleEF	MDV	2.0000e-003	2.0000e-003
tblVehicleEF	MDV	1.9020e-003	1.6953e-003
tblVehicleEF	MDV	2.5680e-003	2.0364e-003
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.25	0.20
tblVehicleEF	MDV	0.07	0.08
tblVehicleEF	MDV	0.04	0.03
tblVehicleEF	MDV	0.15	0.68
tblVehicleEF	MDV	0.34	0.53
tblVehicleEF	MDV	4.9720e-003	4.1323e-003
tblVehicleEF	MDV	1.1770e-003	8.8081e-004
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.25	0.20
tblVehicleEF	MDV	0.07	0.08
tblVehicleEF	MDV	0.06	0.04
tblVehicleEF	MDV	0.15	0.68
tblVehicleEF	MDV	0.37	0.58
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	3.94	1.86
tblVehicleEF	MH	7.69	2.30
tblVehicleEF	MH	1,232.32	1,573.54
tblVehicleEF	MH	59.07	18.79
tblVehicleEF	MH	1.96	2.02
tblVehicleEF	MH	1.08	0.24
tblVehicleEF	MH	0.13	0.13
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	1.3440e-003	2.8820e-004
tblVehicleEF	MH	0.06	0.06

tblVehicleEF	MH	3.2310e-003	3.3066e-003
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	1.2360e-003	2.6499e-004
tblVehicleEF	MH	1.09	0.84
tblVehicleEF	MH	0.10	0.08
tblVehicleEF	MH	0.38	0.29
tblVehicleEF	MH	0.17	0.11
tblVehicleEF	MH	0.03	1.89
tblVehicleEF	MH	0.44	0.10
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	7.2500e-004	1.8597e-004
tblVehicleEF	MH	1.09	0.84
tblVehicleEF	MH	0.10	0.08
tblVehicleEF	MH	0.38	0.29
tblVehicleEF	MH	0.23	0.14
tblVehicleEF	MH	0.03	1.89
tblVehicleEF	MH	0.49	0.11
tblVehicleEF	MHD	0.02	2.5050e-003
tblVehicleEF	MHD	5.9680e-003	5.5626e-003
tblVehicleEF	MHD	0.08	7.5560e-003
tblVehicleEF	MHD	0.31	0.33
tblVehicleEF	MHD	0.43	0.50
tblVehicleEF	MHD	6.09	1.00
tblVehicleEF	MHD	188.74	72.87
tblVehicleEF	MHD	1,198.07	1,093.78
tblVehicleEF	MHD	38.35	7.08
tblVehicleEF	MHD	0.81	0.55
tblVehicleEF	MHD	1.64	2.15
tblVehicleEF	MHD	14.68	1.48
tblVehicleEF	MHD	2.5530e-003	1.3711e-003

tblVehicleEF	MHD	0.13	0.13
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	8.4770e-003	0.04
tblVehicleEF	MHD	7.6000e-004	1.0800e-004
tblVehicleEF	MHD	2.4420e-003	1.3118e-003
tblVehicleEF	MHD	0.06	0.06
tblVehicleEF	MHD	3.0000e-003	3.0000e-003
tblVehicleEF	MHD	8.1070e-003	0.03
tblVehicleEF	MHD	6.9900e-004	9.8900e-005
tblVehicleEF	MHD	9.9500e-004	4.7877e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	4.8200e-004	2.3083e-004
tblVehicleEF	MHD	0.07	0.09
tblVehicleEF	MHD	0.02	0.15
tblVehicleEF	MHD	0.36	0.04
tblVehicleEF	MHD	1.8090e-003	6.9054e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	4.9000e-004	7.0000e-005
tblVehicleEF	MHD	9.9500e-004	4.7877e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	4.8200e-004	2.3083e-004
tblVehicleEF	MHD	0.08	0.10
tblVehicleEF	MHD	0.02	0.15
tblVehicleEF	MHD	0.40	0.05
tblVehicleEF	OBUS	0.01	7.5012e-003
tblVehicleEF	OBUS	0.01	8.1910e-003
tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.30	0.60

tblVehicleEF	OBUS	0.69	0.86
tblVehicleEF	OBUS	6.84	2.35
tblVehicleEF	OBUS	191.19	100.18
tblVehicleEF	OBUS	1,326.40	1,393.82
tblVehicleEF	OBUS	61.16	17.25
tblVehicleEF	OBUS	0.94	0.49
tblVehicleEF	OBUS	2.22	1.83
tblVehicleEF	OBUS	4.90	0.96
tblVehicleEF	OBUS	2.0900e-004	8.3399e-004
tblVehicleEF	OBUS	0.13	0.13
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	9.4500e-003	0.02
tblVehicleEF	OBUS	8.1200e-004	1.8738e-004
tblVehicleEF	OBUS	2.0000e-004	7.9791e-004
tblVehicleEF	OBUS	0.06	0.06
tblVehicleEF	OBUS	3.0000e-003	3.0000e-003
tblVehicleEF	OBUS	9.0290e-003	0.02
tblVehicleEF	OBUS	7.4700e-004	1.7229e-004
tblVehicleEF	OBUS	1.4850e-003	1.4606e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.05
tblVehicleEF	OBUS	6.3000e-004	6.1178e-004
tblVehicleEF	OBUS	0.09	0.08
tblVehicleEF	OBUS	0.04	0.29
tblVehicleEF	OBUS	0.42	0.11
tblVehicleEF	OBUS	1.8350e-003	9.5178e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.3200e-004	1.7066e-004
tblVehicleEF	OBUS	1.4850e-003	1.4606e-003
tblVehicleEF	OBUS	0.02	0.02

tblVehicleEF	OBUS	0.06	0.07
tblVehicleEF	OBUS	6.3000e-004	6.1178e-004
tblVehicleEF	OBUS	0.11	0.10
tblVehicleEF	OBUS	0.04	0.29
tblVehicleEF	OBUS	0.46	0.12
tblVehicleEF	SBUS	0.92	0.03
tblVehicleEF	SBUS	9.4070e-003	4.3969e-003
tblVehicleEF	SBUS	0.07	2.4183e-003
tblVehicleEF	SBUS	3.67	1.46
tblVehicleEF	SBUS	0.57	0.33
tblVehicleEF	SBUS	3.48	0.36
tblVehicleEF	SBUS	1,375.84	337.36
tblVehicleEF	SBUS	1,198.90	1,088.66
tblVehicleEF	SBUS	20.51	2.10
tblVehicleEF	SBUS	13.65	3.28
tblVehicleEF	SBUS	5.27	4.42
tblVehicleEF	SBUS	17.61	0.96
tblVehicleEF	SBUS	0.01	2.9830e-003
tblVehicleEF	SBUS	0.74	0.74
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	3.7800e-004	2.4900e-005
tblVehicleEF	SBUS	0.01	2.8539e-003
tblVehicleEF	SBUS	0.32	0.32
tblVehicleEF	SBUS	2.8570e-003	2.8349e-003
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	3.4800e-004	2.2900e-005
tblVehicleEF	SBUS	9.1800e-004	1.7462e-004
tblVehicleEF	SBUS	9.7020e-003	1.7522e-003
tblVehicleEF	SBUS	0.44	0.14

tblVehicleEF	SBUS	3.8000e-004	7.8700e-005
tblVehicleEF	SBUS	0.12	0.07
tblVehicleEF	SBUS	5.1330e-003	0.01
tblVehicleEF	SBUS	0.17	0.01
tblVehicleEF	SBUS	0.01	3.1999e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	2.6500e-004	2.0800e-005
tblVehicleEF	SBUS	9.1800e-004	1.7462e-004
tblVehicleEF	SBUS	9.7020e-003	1.7522e-003
tblVehicleEF	SBUS	0.62	0.20
tblVehicleEF	SBUS	3.8000e-004	7.8700e-005
tblVehicleEF	SBUS	0.14	0.09
tblVehicleEF	SBUS	5.1330e-003	0.01
tblVehicleEF	SBUS	0.18	0.01
tblVehicleEF	UBUS	0.30	3.17
tblVehicleEF	UBUS	0.07	0.01
tblVehicleEF	UBUS	3.66	24.50
tblVehicleEF	UBUS	9.92	0.84
tblVehicleEF	UBUS	2,011.77	1,777.09
tblVehicleEF	UBUS	138.26	8.69
tblVehicleEF	UBUS	6.52	0.59
tblVehicleEF	UBUS	13.06	0.07
tblVehicleEF	UBUS	0.52	0.08
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.11	4.2782e-003
tblVehicleEF	UBUS	7.7600e-004	7.1500e-005
tblVehicleEF	UBUS	0.22	0.03
tblVehicleEF	UBUS	3.0000e-003	7.7722e-003
tblVehicleEF	UBUS	0.11	4.0879e-003
tblVehicleEF	UBUS	7.1300e-004	6.5800e-005

tblVehicleEF	UBUS	3.8030e-003	2.3315e-004
tblVehicleEF	UBUS	0.07	3.3368e-003
tblVehicleEF	UBUS	2.2780e-003	1.3624e-004
tblVehicleEF	UBUS	0.42	0.05
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.88	0.05
tblVehicleEF	UBUS	0.02	7.5761e-003
tblVehicleEF	UBUS	1.5650e-003	8.6000e-005
tblVehicleEF	UBUS	3.8030e-003	2.3315e-004
tblVehicleEF	UBUS	0.07	3.3368e-003
tblVehicleEF	UBUS	2.2780e-003	1.3624e-004
tblVehicleEF	UBUS	0.77	3.24
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.97	0.05
tblVehicleTrips	ST_TR	7.16	7.95
tblVehicleTrips	SU_TR	6.07	6.74
tblVehicleTrips	WD_TR	6.59	7.32
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
tblWoodstoves	NumberCatalytic	2.50	0.00
tblWoodstoves	NumberNoncatalytic	2.50	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	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
Year	tons/yr										MT/yr					
2021	0.3502	2.1627	1.8813	3.2400e-003	0.0220	0.1098	0.1319	0.0104	0.1046	0.1150	0.0000	271.4563	271.4563	0.0574	0.0000	272.8900
2022	0.7800	6.3400e-003	8.1600e-003	1.0000e-005	0.0000	3.7000e-004	3.7000e-004	0.0000	3.7000e-004	3.7000e-004	0.0000	1.1490	1.1490	7.0000e-005	0.0000	1.1508
Maximum	0.7800	2.1627	1.8813	3.2400e-003	0.0220	0.1098	0.1319	0.0104	0.1046	0.1150	0.0000	271.4563	271.4563	0.0574	0.0000	272.8900

Mitigated Construction

	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
Year	tons/yr										MT/yr					
2021	0.1768	1.7435	2.0082	3.2400e-003	4.9600e-003	0.1035	0.1085	2.3300e-003	0.1035	0.1058	0.0000	271.4560	271.4560	0.0574	0.0000	272.8897
2022	0.7793	6.1100e-003	8.2500e-003	1.0000e-005	0.0000	4.3000e-004	4.3000e-004	0.0000	4.3000e-004	4.3000e-004	0.0000	1.1490	1.1490	7.0000e-005	0.0000	1.1508
Maximum	0.7793	1.7435	2.0082	3.2400e-003	4.9600e-003	0.1035	0.1085	2.3300e-003	0.1035	0.1058	0.0000	271.4560	271.4560	0.0574	0.0000	272.8897

	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
Percent Reduction	15.40	19.34	-6.72	0.00	77.50	5.68	17.66	77.51	1.01	7.88	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-4-2021	4-3-2021	0.6919	0.4622
2	4-4-2021	7-3-2021	0.5874	0.4659

3	7-4-2021	10-3-2021	0.5938	0.4710
4	10-4-2021	1-3-2022	0.7859	0.6746
5	1-4-2022	4-3-2022	0.6241	0.6234
		Highest	0.7859	0.6746

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	0.3158	0.0349	0.3858	2.2000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	36.0529	36.0529	1.2700e-003	6.5000e-004	36.2783
Energy	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	50.6179	50.6179	3.7500e-003	1.1700e-003	51.0597
Mobile	0.2597	0.4256	1.9585	4.0500e-003	0.3885	5.2600e-003	0.3938	0.1044	4.9600e-003	0.1093	0.0000	397.9432	397.9432	0.0253	0.0000	398.5765
Waste						0.0000	0.0000		0.0000	0.0000	4.6688	0.0000	4.6688	0.2759	0.0000	11.5667
Water						0.0000	0.0000		0.0000	0.0000	1.1526	2.3638	3.5164	4.2900e-003	2.5700e-003	4.3908
Total	0.5782	0.4840	2.3543	4.4200e-003	0.3885	0.0117	0.4002	0.1044	0.0114	0.1158	5.8214	486.9777	492.7991	0.3106	4.3900e-003	501.8719

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	0.3158	0.0349	0.3858	2.2000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	36.0529	36.0529	1.2700e-003	6.5000e-004	36.2783
Energy	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	50.6179	50.6179	3.7500e-003	1.1700e-003	51.0597

Mobile	0.2597	0.4256	1.9585	4.0500e-003	0.3885	5.2600e-003	0.3938	0.1044	4.9600e-003	0.1093	0.0000	397.9432	397.9432	0.0253	0.0000	398.5765
Waste						0.0000	0.0000		0.0000	0.0000	4.6688	0.0000	4.6688	0.2759	0.0000	11.5667
Water						0.0000	0.0000		0.0000	0.0000	1.1526	2.3638	3.5164	4.2900e-003	2.5700e-003	4.3908
Total	0.5782	0.4840	2.3543	4.4200e-003	0.3885	0.0117	0.4002	0.1044	0.0114	0.1158	5.8214	486.9777	492.7991	0.3106	4.3900e-003	501.8719

	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
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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/4/2021	1/29/2021	5	20	
2	Site Preparation	Site Preparation	1/30/2021	2/3/2021	5	3	
3	Grading	Grading	2/4/2021	2/11/2021	5	6	
4	Trenching	Trenching	2/4/2021	2/11/2021	5	6	
5	Building Construction	Building Construction	2/12/2021	12/16/2021	5	220	
6	Paving	Paving	12/17/2021	12/30/2021	5	10	
7	Architectural Coating	Architectural Coating	12/31/2021	1/13/2022	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 108,421; Residential Outdoor: 36,140; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73

Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Trenching	Graders	1	8.00	187	0.41
Trenching	Rubber Tired Dozers	1	8.00	247	0.40
Trenching	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	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					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3200e-003	0.0274	0.0161	4.0000e-005		1.0500e-003	1.0500e-003		9.7000e-004	9.7000e-004	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	2.3200e-003	0.0274	0.0161	4.0000e-005	2.3900e-003	1.0500e-003	3.4400e-003	2.6000e-004	9.7000e-004	1.2300e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

Off-Road	5.4800e-003	0.0606	0.0293	6.0000e-005		2.7500e-003	2.7500e-003		2.5300e-003	2.5300e-003	0.0000	5.4312	5.4312	1.7600e-003	0.0000	5.4751
Total	5.4800e-003	0.0606	0.0293	6.0000e-005	0.0197	2.7500e-003	0.0224	0.0101	2.5300e-003	0.0126	0.0000	5.4312	5.4312	1.7600e-003	0.0000	5.4751

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	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					
Fugitive Dust					4.4200e-003	0.0000	4.4200e-003	2.2700e-003	0.0000	2.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5100e-003	0.0307	0.0364	6.0000e-005		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003	0.0000	5.4312	5.4312	1.7600e-003	0.0000	5.4751
Total	1.5100e-003	0.0307	0.0364	6.0000e-005	4.4200e-003	1.4600e-003	5.8800e-003	2.2700e-003	1.4600e-003	3.7300e-003	0.0000	5.4312	5.4312	1.7600e-003	0.0000	5.4751

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.5 Trenching - 2021

Unmitigated Construction On-Site

	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					
Off-Road	5.4800e-003	0.0606	0.0293	6.0000e-005		2.7500e-003	2.7500e-003		2.5300e-003	2.5300e-003	0.0000	5.4312	5.4312	1.7600e-003	0.0000	5.4751
Total	5.4800e-003	0.0606	0.0293	6.0000e-005		2.7500e-003	2.7500e-003		2.5300e-003	2.5300e-003	0.0000	5.4312	5.4312	1.7600e-003	0.0000	5.4751

Unmitigated Construction Off-Site

	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
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Mitigated Construction On-Site

	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					
Off-Road	0.0785	1.4984	1.6949	2.7500e-003		0.0900	0.0900		0.0900	0.0900	0.0000	228.4133	228.4133	0.0449	0.0000	229.5368
Total	0.0785	1.4984	1.6949	2.7500e-003		0.0900	0.0900		0.0900	0.0900	0.0000	228.4133	228.4133	0.0449	0.0000	229.5368

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.7 Paving - 2021

Unmitigated Construction On-Site

	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
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Total	2.1000e-003	0.0443	0.0649	9.0000e-005		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	7.7524	7.7524	2.4600e-003	0.0000	7.8138
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Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.8 Architectural Coating - 2021

Unmitigated Construction On-Site

	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					
Archit. Coating	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1000e-004	7.6000e-004	9.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total	0.0867	7.6000e-004	9.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	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					
Archit. Coating	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-005	6.8000e-004	9.2000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total	0.0866	6.8000e-004	9.2000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279

Mitigated Construction Off-Site

	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					

Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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Mitigated Construction On-Site

	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					
Archit. Coating	0.7791					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	6.1100e-003	8.2500e-003	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	1.1490	1.1490	7.0000e-005	0.0000	1.1508
Total	0.7793	6.1100e-003	8.2500e-003	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	1.1490	1.1490	7.0000e-005	0.0000	1.1508

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

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	0.2597	0.4256	1.9585	4.0500e-003	0.3885	5.2600e-003	0.3938	0.1044	4.9600e-003	0.1093	0.0000	397.9432	397.9432	0.0253	0.0000	398.5765
Unmitigated	0.2597	0.4256	1.9585	4.0500e-003	0.3885	5.2600e-003	0.3938	0.1044	4.9600e-003	0.1093	0.0000	397.9432	397.9432	0.0253	0.0000	398.5765

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	366.00	397.50	337.00	1,050,972	1,050,972
Parking Lot	0.00	0.00	0.00		
Total	366.00	397.50	337.00	1,050,972	1,050,972

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Apartments Low Rise	10.80	7.30	7.50	42.90	19.50	37.60	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.539437	0.054819	0.169782	0.121941	0.037072	0.009200	0.024840	0.017670	0.001937	0.000890	0.019826	0.001449	0.001139
Apartments Low Rise	0.539437	0.054819	0.169782	0.121941	0.037072	0.009200	0.024840	0.017670	0.001937	0.000890	0.019826	0.001449	0.001139

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	23.4054	23.4054	3.2300e-003	6.7000e-004	23.6855
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	23.4054	23.4054	3.2300e-003	6.7000e-004	23.6855
NaturalGas Mitigated	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742
NaturalGas Unmitigated	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742

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					
Apartments Low Rise	509943	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742

Mitigated

	Natural Gas 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					
Apartments Low Rise	509943	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	217440	20.7121	2.8600e-003	5.9000e-004	20.9600
Parking Lot	28274.4	2.6933	3.7000e-004	8.0000e-005	2.7255
Total		23.4054	3.2300e-003	6.7000e-004	23.6855

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	217440	20.7121	2.8600e-003	5.9000e-004	20.9600

Parking Lot	28274.4	2.6933	3.7000e-004	8.0000e-005	2.7255
Total		23.4054	3.2300e-003	6.7000e-004	23.6855

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	0.3158	0.0349	0.3858	2.2000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	36.0529	36.0529	1.2700e-003	6.5000e-004	36.2783
Unmitigated	0.3158	0.0349	0.3858	2.2000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	36.0529	36.0529	1.2700e-003	6.5000e-004	36.2783

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	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4442	35.4442	6.8000e-004	6.5000e-004	35.6549

Landscaping	0.0113	4.3000e-003	0.3728	2.0000e-005		2.0600e-003	2.0600e-003		2.0600e-003	2.0600e-003	0.0000	0.6086	0.6086	5.9000e-004	0.0000	0.6234
Total	0.3158	0.0349	0.3858	2.2000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	36.0529	36.0529	1.2700e-003	6.5000e-004	36.2783

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	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4442	35.4442	6.8000e-004	6.5000e-004	35.6549
Landscaping	0.0113	4.3000e-003	0.3728	2.0000e-005		2.0600e-003	2.0600e-003		2.0600e-003	2.0600e-003	0.0000	0.6086	0.6086	5.9000e-004	0.0000	0.6234
Total	0.3158	0.0349	0.3858	2.2000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	36.0529	36.0529	1.2700e-003	6.5000e-004	36.2783

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.5164	4.2900e-003	2.5700e-003	4.3908
Unmitigated	3.5164	4.2900e-003	2.5700e-003	4.3908

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.2577 / 2.05377	3.5164	4.2900e-003	2.5700e-003	4.3908
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		3.5164	4.2900e-003	2.5700e-003	4.3908

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.2577 / 2.05377	3.5164	4.2900e-003	2.5700e-003	4.3908
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		3.5164	4.2900e-003	2.5700e-003	4.3908

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.6688	0.2759	0.0000	11.5667
Unmitigated	4.6688	0.2759	0.0000	11.5667

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	23	4.6688	0.2759	0.0000	11.5667
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		4.6688	0.2759	0.0000	11.5667

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Apartments Low Rise	23	4.6688	0.2759	0.0000	11.5667
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		4.6688	0.2759	0.0000	11.5667

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Los Pinos Apartments - Sonoma-North Coast County, Annual

**Los Pinos Apartments - 2030
Sonoma-North Coast County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	123.00	Space	0.00	80,784.00	0
Apartments Low Rise	50.00	Dwelling Unit	2.47	53,541.00	143

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	75
Climate Zone	4			Operational Year	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	210	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Most recent Intensity Factor

Land Use - Measured off of site plan

Construction Phase - Added trenching

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Trip Emissions caled using EMFAC2017 spreadsheet. Assume 2,000 CY concrete, 10CY per delivery, 200 RTs, 400 Trips. Assume asphalt is 2 RTs per day.

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	27.50	45.00
tblFireplaces	NumberWood	17.50	0.00
tblFleetMix	HHD	0.03	0.02
tblFleetMix	HHD	0.03	0.02
tblFleetMix	LDA	0.63	0.59
tblFleetMix	LDA	0.63	0.59
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT1	0.03	0.05
tblFleetMix	LDT2	0.16	0.15
tblFleetMix	LDT2	0.16	0.15
tblFleetMix	LHD1	0.01	0.03
tblFleetMix	LHD1	0.01	0.03
tblFleetMix	LHD2	4.6320e-003	6.9360e-003
tblFleetMix	LHD2	4.6320e-003	6.9360e-003
tblFleetMix	MCY	4.3050e-003	0.02
tblFleetMix	MCY	4.3050e-003	0.02
tblFleetMix	MDV	0.09	0.10
tblFleetMix	MDV	0.09	0.10
tblFleetMix	MH	6.6200e-004	8.2866e-004
tblFleetMix	MH	6.6200e-004	8.2866e-004
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03

tbIFleetMix	OBUS	3.1960e-003	1.7608e-003
tbIFleetMix	OBUS	3.1960e-003	1.7608e-003
tbIFleetMix	SBUS	8.9700e-004	1.4307e-003
tbIFleetMix	SBUS	8.9700e-004	1.4307e-003
tbIFleetMix	UBUS	1.3730e-003	8.3910e-004
tbIFleetMix	UBUS	1.3730e-003	8.3910e-004
tblLandUse	LandUseSquareFeet	49,200.00	80,784.00
tblLandUse	LandUseSquareFeet	50,000.00	53,541.00
tblLandUse	LotAcreage	1.11	0.00
tblLandUse	LotAcreage	3.13	2.47
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
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tblTripsAndVMT	WorkerTripNumber	14.00	0.00
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tblVehicleEF	HHD	0.08	0.05
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tblVehicleEF	HHD	1,556.84	1,274.41
tblVehicleEF	HHD	7.45	0.10

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tblVehicleEF	HHD	19.89	2.87
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tblVehicleEF	HHD	4.2000e-005	2.0100e-006
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tblVehicleEF	HHD	3.6600e-004	8.5943e-004
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tblVehicleEF	LDT1	0.11	0.19
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tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.02	0.02
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tblVehicleEF	LDT2	0.03	0.05
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tblVehicleEF	LHD1	1.65	0.95
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tblVehicleEF	LHD1	0.02	0.01
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tblVehicleEF	LHD1	2.6250e-003	2.5420e-003
tblVehicleEF	LHD1	0.02	0.01
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tblVehicleEF	LHD1	0.01	0.02
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tblVehicleEF	LHD1	0.46	0.84
tblVehicleEF	LHD1	0.20	0.05
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tblVehicleEF	LHD1	6.4020e-003	6.8670e-003
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tblVehicleEF	LHD1	2.3490e-003	1.8450e-003
tblVehicleEF	LHD1	0.12	0.09
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.2270e-003	9.4829e-004
tblVehicleEF	LHD1	0.17	0.13
tblVehicleEF	LHD1	0.46	0.84
tblVehicleEF	LHD1	0.22	0.06
tblVehicleEF	LHD2	2.7630e-003	2.5346e-003
tblVehicleEF	LHD2	6.2340e-003	6.3229e-003
tblVehicleEF	LHD2	4.5080e-003	5.7121e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.54	0.63
tblVehicleEF	LHD2	0.94	0.46
tblVehicleEF	LHD2	13.97	14.12
tblVehicleEF	LHD2	684.77	710.65
tblVehicleEF	LHD2	21.66	6.14
tblVehicleEF	LHD2	0.08	0.10
tblVehicleEF	LHD2	0.53	0.86
tblVehicleEF	LHD2	0.34	0.14
tblVehicleEF	LHD2	1.1300e-003	1.5621e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.5500e-004	9.2300e-005
tblVehicleEF	LHD2	1.0820e-003	1.4946e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	2.7110e-003	2.7315e-003
tblVehicleEF	LHD2	0.01	0.02

tblVehicleEF	LHD2	3.2600e-004	8.4900e-005
tblVehicleEF	LHD2	6.2900e-004	7.2924e-004
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.7900e-004	4.3623e-004
tblVehicleEF	LHD2	0.10	0.12
tblVehicleEF	LHD2	0.06	0.20
tblVehicleEF	LHD2	0.06	0.03
tblVehicleEF	LHD2	1.3600e-004	1.3463e-004
tblVehicleEF	LHD2	6.6520e-003	6.8450e-003
tblVehicleEF	LHD2	2.3300e-004	6.0700e-005
tblVehicleEF	LHD2	6.2900e-004	7.2924e-004
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.7900e-004	4.3623e-004
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.06	0.20
tblVehicleEF	LHD2	0.07	0.03
tblVehicleEF	MCY	0.49	0.35
tblVehicleEF	MCY	0.17	0.26
tblVehicleEF	MCY	19.45	19.65
tblVehicleEF	MCY	10.53	9.37
tblVehicleEF	MCY	179.08	216.84
tblVehicleEF	MCY	45.01	61.60
tblVehicleEF	MCY	1.17	1.18
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	4.0000e-003	4.0000e-003
tblVehicleEF	MCY	2.2940e-003	2.2561e-003
tblVehicleEF	MCY	3.3980e-003	2.8454e-003

tblVehicleEF	MCY	5.0400e-003	5.0400e-003
tblVehicleEF	MCY	2.1410e-003	2.1064e-003
tblVehicleEF	MCY	3.1900e-003	2.6699e-003
tblVehicleEF	MCY	0.86	1.77
tblVehicleEF	MCY	0.76	0.79
tblVehicleEF	MCY	0.44	0.90
tblVehicleEF	MCY	2.36	2.37
tblVehicleEF	MCY	0.58	1.79
tblVehicleEF	MCY	2.25	2.00
tblVehicleEF	MCY	2.1790e-003	2.1458e-003
tblVehicleEF	MCY	6.8900e-004	6.0961e-004
tblVehicleEF	MCY	0.86	1.77
tblVehicleEF	MCY	0.76	0.79
tblVehicleEF	MCY	0.44	0.90
tblVehicleEF	MCY	2.93	2.95
tblVehicleEF	MCY	0.58	1.79
tblVehicleEF	MCY	2.45	2.17
tblVehicleEF	MDV	6.9960e-003	2.3676e-003
tblVehicleEF	MDV	0.01	0.05
tblVehicleEF	MDV	0.78	0.63
tblVehicleEF	MDV	2.34	2.59
tblVehicleEF	MDV	380.32	318.76
tblVehicleEF	MDV	87.00	67.66
tblVehicleEF	MDV	0.10	0.05
tblVehicleEF	MDV	0.20	0.23
tblVehicleEF	MDV	0.04	0.04
tblVehicleEF	MDV	8.0000e-003	8.0000e-003
tblVehicleEF	MDV	1.5060e-003	1.1855e-003
tblVehicleEF	MDV	2.2440e-003	1.4708e-003
tblVehicleEF	MDV	0.02	0.02

tblVehicleEF	MDV	2.0000e-003	2.0000e-003
tblVehicleEF	MDV	1.3870e-003	1.0934e-003
tblVehicleEF	MDV	2.0630e-003	1.3523e-003
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.19	0.15
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.02	9.7323e-003
tblVehicleEF	MDV	0.12	0.53
tblVehicleEF	MDV	0.16	0.26
tblVehicleEF	MDV	3.8050e-003	3.1496e-003
tblVehicleEF	MDV	9.1100e-004	6.6954e-004
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.19	0.15
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.03	0.01
tblVehicleEF	MDV	0.12	0.53
tblVehicleEF	MDV	0.18	0.29
tblVehicleEF	MH	0.01	6.5256e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.80	0.46
tblVehicleEF	MH	4.52	1.64
tblVehicleEF	MH	1,197.79	1,387.36
tblVehicleEF	MH	56.88	15.21
tblVehicleEF	MH	1.18	1.56
tblVehicleEF	MH	0.80	0.24
tblVehicleEF	MH	0.13	0.13
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	8.8700e-004	1.9116e-004
tblVehicleEF	MH	0.06	0.06

tblVehicleEF	MH	3.2310e-003	3.3356e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	8.1600e-004	1.7576e-004
tblVehicleEF	MH	0.66	0.45
tblVehicleEF	MH	0.06	0.04
tblVehicleEF	MH	0.25	0.18
tblVehicleEF	MH	0.06	0.06
tblVehicleEF	MH	0.02	0.82
tblVehicleEF	MH	0.28	0.08
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.4800e-004	1.5054e-004
tblVehicleEF	MH	0.66	0.45
tblVehicleEF	MH	0.06	0.04
tblVehicleEF	MH	0.25	0.18
tblVehicleEF	MH	0.08	0.07
tblVehicleEF	MH	0.02	0.82
tblVehicleEF	MH	0.30	0.08
tblVehicleEF	MHD	0.02	2.2515e-003
tblVehicleEF	MHD	2.6490e-003	9.3172e-004
tblVehicleEF	MHD	0.04	5.1673e-003
tblVehicleEF	MHD	0.22	0.33
tblVehicleEF	MHD	0.26	0.15
tblVehicleEF	MHD	2.68	0.58
tblVehicleEF	MHD	195.43	63.79
tblVehicleEF	MHD	1,163.39	948.94
tblVehicleEF	MHD	30.64	5.12
tblVehicleEF	MHD	0.54	0.34
tblVehicleEF	MHD	1.15	1.53
tblVehicleEF	MHD	15.46	1.88
tblVehicleEF	MHD	8.6000e-005	1.5407e-004

tblVehicleEF	MHD	0.13	0.13
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	3.2980e-003	7.6149e-003
tblVehicleEF	MHD	4.3800e-004	6.5300e-005
tblVehicleEF	MHD	8.2000e-005	1.4741e-004
tblVehicleEF	MHD	0.06	0.06
tblVehicleEF	MHD	3.0000e-003	3.0000e-003
tblVehicleEF	MHD	3.1520e-003	7.2816e-003
tblVehicleEF	MHD	4.0300e-004	6.0000e-005
tblVehicleEF	MHD	4.6000e-004	2.1841e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.01
tblVehicleEF	MHD	2.6400e-004	1.2489e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.01	0.07
tblVehicleEF	MHD	0.17	0.03
tblVehicleEF	MHD	1.8710e-003	6.0431e-004
tblVehicleEF	MHD	0.01	9.0155e-003
tblVehicleEF	MHD	3.5300e-004	5.0600e-005
tblVehicleEF	MHD	4.6000e-004	2.1841e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	2.6400e-004	1.2489e-004
tblVehicleEF	MHD	0.05	0.01
tblVehicleEF	MHD	0.01	0.07
tblVehicleEF	MHD	0.18	0.03
tblVehicleEF	OBUS	0.01	6.8348e-003
tblVehicleEF	OBUS	4.2840e-003	2.7457e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.25	0.72

tblVehicleEF	OBUS	0.36	0.35
tblVehicleEF	OBUS	4.51	1.76
tblVehicleEF	OBUS	217.22	110.91
tblVehicleEF	OBUS	1,287.01	1,190.08
tblVehicleEF	OBUS	56.65	13.53
tblVehicleEF	OBUS	0.52	0.50
tblVehicleEF	OBUS	1.12	1.54
tblVehicleEF	OBUS	5.34	1.21
tblVehicleEF	OBUS	4.8000e-005	1.6725e-004
tblVehicleEF	OBUS	0.13	0.13
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	3.3260e-003	8.4554e-003
tblVehicleEF	OBUS	8.4300e-004	1.6432e-004
tblVehicleEF	OBUS	4.6000e-005	1.6001e-004
tblVehicleEF	OBUS	0.06	0.06
tblVehicleEF	OBUS	3.0000e-003	3.0000e-003
tblVehicleEF	OBUS	3.1700e-003	8.0772e-003
tblVehicleEF	OBUS	7.7500e-004	1.5108e-004
tblVehicleEF	OBUS	1.2470e-003	1.3561e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.04	0.05
tblVehicleEF	OBUS	5.6000e-004	6.0094e-004
tblVehicleEF	OBUS	0.05	0.02
tblVehicleEF	OBUS	0.03	0.29
tblVehicleEF	OBUS	0.28	0.08
tblVehicleEF	OBUS	2.0820e-003	1.0521e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.4600e-004	1.3387e-004
tblVehicleEF	OBUS	1.2470e-003	1.3561e-003
tblVehicleEF	OBUS	0.02	0.02

tblVehicleEF	OBUS	0.05	0.07
tblVehicleEF	OBUS	5.6000e-004	6.0094e-004
tblVehicleEF	OBUS	0.06	0.03
tblVehicleEF	OBUS	0.03	0.29
tblVehicleEF	OBUS	0.31	0.09
tblVehicleEF	SBUS	0.86	0.04
tblVehicleEF	SBUS	4.9420e-003	3.7658e-003
tblVehicleEF	SBUS	0.06	3.2713e-003
tblVehicleEF	SBUS	4.62	1.84
tblVehicleEF	SBUS	0.35	0.30
tblVehicleEF	SBUS	3.58	0.46
tblVehicleEF	SBUS	1,254.65	325.82
tblVehicleEF	SBUS	1,139.38	1,016.49
tblVehicleEF	SBUS	29.22	2.64
tblVehicleEF	SBUS	6.67	2.68
tblVehicleEF	SBUS	2.26	3.29
tblVehicleEF	SBUS	16.03	1.25
tblVehicleEF	SBUS	3.4150e-003	1.8008e-003
tblVehicleEF	SBUS	0.74	0.74
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	5.8000e-004	3.5900e-005
tblVehicleEF	SBUS	3.2680e-003	1.7229e-003
tblVehicleEF	SBUS	0.32	0.32
tblVehicleEF	SBUS	2.8000e-003	2.7963e-003
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	5.3300e-004	3.3000e-005
tblVehicleEF	SBUS	1.3920e-003	4.1387e-004
tblVehicleEF	SBUS	0.01	4.2988e-003
tblVehicleEF	SBUS	0.56	0.18

tblVehicleEF	SBUS	6.5300e-004	2.0120e-004
tblVehicleEF	SBUS	0.08	0.06
tblVehicleEF	SBUS	7.0560e-003	0.03
tblVehicleEF	SBUS	0.18	0.02
tblVehicleEF	SBUS	0.01	3.0940e-003
tblVehicleEF	SBUS	0.01	9.6771e-003
tblVehicleEF	SBUS	3.5400e-004	2.6100e-005
tblVehicleEF	SBUS	1.3920e-003	4.1387e-004
tblVehicleEF	SBUS	0.01	4.2988e-003
tblVehicleEF	SBUS	0.80	0.25
tblVehicleEF	SBUS	6.5300e-004	2.0120e-004
tblVehicleEF	SBUS	0.09	0.07
tblVehicleEF	SBUS	7.0560e-003	0.03
tblVehicleEF	SBUS	0.20	0.02
tblVehicleEF	UBUS	0.24	1.71
tblVehicleEF	UBUS	0.07	0.01
tblVehicleEF	UBUS	2.90	12.99
tblVehicleEF	UBUS	9.65	0.84
tblVehicleEF	UBUS	1,923.50	1,646.36
tblVehicleEF	UBUS	143.20	7.79
tblVehicleEF	UBUS	3.72	0.67
tblVehicleEF	UBUS	12.46	0.08
tblVehicleEF	UBUS	0.50	0.08
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.06	4.8848e-003
tblVehicleEF	UBUS	1.2400e-003	8.8000e-005
tblVehicleEF	UBUS	0.21	0.03
tblVehicleEF	UBUS	3.0000e-003	7.7722e-003
tblVehicleEF	UBUS	0.06	4.6674e-003
tblVehicleEF	UBUS	1.1400e-003	8.0900e-005

tblVehicleEF	UBUS	3.9110e-003	2.4940e-004
tblVehicleEF	UBUS	0.07	3.6220e-003
tblVehicleEF	UBUS	2.3740e-003	1.4794e-004
tblVehicleEF	UBUS	0.23	0.03
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	0.89	0.05
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	1.6100e-003	7.7100e-005
tblVehicleEF	UBUS	3.9110e-003	2.4940e-004
tblVehicleEF	UBUS	0.07	3.6220e-003
tblVehicleEF	UBUS	2.3740e-003	1.4794e-004
tblVehicleEF	UBUS	0.49	1.75
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	0.97	0.05
tblVehicleTrips	ST_TR	7.16	7.95
tblVehicleTrips	SU_TR	6.07	6.74
tblVehicleTrips	WD_TR	6.59	7.32
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
tblWoodstoves	NumberCatalytic	2.50	0.00
tblWoodstoves	NumberNoncatalytic	2.50	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	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	0.3157	0.0349	0.3844	2.2000e-004		4.5400e-003	4.5400e-003		4.5400e-003	4.5400e-003	0.0000	36.0529	36.0529	1.2600e-003	6.5000e-004	36.2781
Energy	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	50.6179	50.6179	3.7500e-003	1.1700e-003	51.0597
Mobile	0.1728	0.2623	1.3294	3.1600e-003	0.3879	2.7700e-003	0.3907	0.1041	2.6000e-003	0.1067	0.0000	314.1300	314.1300	0.0165	0.0000	314.5435
Waste						0.0000	0.0000		0.0000	0.0000	4.6688	0.0000	4.6688	0.2759	0.0000	11.5667
Water						0.0000	0.0000		0.0000	0.0000	1.1526	2.3638	3.5164	4.2900e-003	2.5700e-003	4.3908
Total	0.4912	0.3207	1.7238	3.5300e-003	0.3879	9.2100e-003	0.3972	0.1041	9.0400e-003	0.1132	5.8214	403.1645	408.9859	0.3018	4.3900e-003	417.8388

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	0.3157	0.0349	0.3844	2.2000e-004		4.5400e-003	4.5400e-003		4.5400e-003	4.5400e-003	0.0000	36.0529	36.0529	1.2600e-003	6.5000e-004	36.2781
Energy	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	50.6179	50.6179	3.7500e-003	1.1700e-003	51.0597
Mobile	0.1728	0.2623	1.3294	3.1600e-003	0.3879	2.7700e-003	0.3907	0.1041	2.6000e-003	0.1067	0.0000	314.1300	314.1300	0.0165	0.0000	314.5435
Waste						0.0000	0.0000		0.0000	0.0000	4.6688	0.0000	4.6688	0.2759	0.0000	11.5667
Water						0.0000	0.0000		0.0000	0.0000	1.1526	2.3638	3.5164	4.2900e-003	2.5700e-003	4.3908

Total	0.4912	0.3207	1.7238	3.5300e-003	0.3879	9.2100e-003	0.3972	0.1041	9.0400e-003	0.1132	5.8214	403.1645	408.9859	0.3018	4.3900e-003	417.8388
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	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
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	0.1728	0.2623	1.3294	3.1600e-003	0.3879	2.7700e-003	0.3907	0.1041	2.6000e-003	0.1067	0.0000	314.1300	314.1300	0.0165	0.0000	314.5435
Unmitigated	0.1728	0.2623	1.3294	3.1600e-003	0.3879	2.7700e-003	0.3907	0.1041	2.6000e-003	0.1067	0.0000	314.1300	314.1300	0.0165	0.0000	314.5435

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	366.00	397.50	337.00	1,050,972	1,050,972
Parking Lot	0.00	0.00	0.00		
Total	366.00	397.50	337.00	1,050,972	1,050,972

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	42.90	19.50	37.60	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.592520	0.049804	0.153548	0.102588	0.025706	0.006936	0.025286	0.020119	0.001761	0.000839	0.018633	0.001431	0.000829
Apartments Low Rise	0.592520	0.049804	0.153548	0.102588	0.025706	0.006936	0.025286	0.020119	0.001761	0.000839	0.018633	0.001431	0.000829

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	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
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	23.4054	23.4054	3.2300e-003	6.7000e-004	23.6855
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	23.4054	23.4054	3.2300e-003	6.7000e-004	23.6855
NaturalGas Mitigated	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742
NaturalGas Unmitigated	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas 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					
Apartments Low Rise	509943	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742

Mitigated

	Natural Gas 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					
Apartments Low Rise	509943	2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		2.7500e-003	0.0235	0.0100	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2125	27.2125	5.2000e-004	5.0000e-004	27.3742

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	217440	20.7121	2.8600e-003	5.9000e-004	20.9600
Parking Lot	28274.4	2.6933	3.7000e-004	8.0000e-005	2.7255

Total		23.4054	3.2300e-003	6.7000e-004	23.6855
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Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	217440	20.7121	2.8600e-003	5.9000e-004	20.9600
Parking Lot	28274.4	2.6933	3.7000e-004	8.0000e-005	2.7255
Total		23.4054	3.2300e-003	6.7000e-004	23.6855

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	0.3157	0.0349	0.3844	2.2000e-004		4.5400e-003	4.5400e-003		4.5400e-003	4.5400e-003	0.0000	36.0529	36.0529	1.2600e-003	6.5000e-004	36.2781
Unmitigated	0.3157	0.0349	0.3844	2.2000e-004		4.5400e-003	4.5400e-003		4.5400e-003	4.5400e-003	0.0000	36.0529	36.0529	1.2600e-003	6.5000e-004	36.2781

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	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4442	35.4442	6.8000e-004	6.5000e-004	35.6549
Landscaping	0.0112	4.2800e-003	0.3714	2.0000e-005		2.0600e-003	2.0600e-003		2.0600e-003	2.0600e-003	0.0000	0.6086	0.6086	5.8000e-004	0.0000	0.6232
Total	0.3157	0.0349	0.3844	2.2000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	36.0529	36.0529	1.2600e-003	6.5000e-004	36.2781

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	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4442	35.4442	6.8000e-004	6.5000e-004	35.6549
Landscaping	0.0112	4.2800e-003	0.3714	2.0000e-005		2.0600e-003	2.0600e-003		2.0600e-003	2.0600e-003	0.0000	0.6086	0.6086	5.8000e-004	0.0000	0.6232
Total	0.3157	0.0349	0.3844	2.2000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	36.0529	36.0529	1.2600e-003	6.5000e-004	36.2781

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.5164	4.2900e-003	2.5700e-003	4.3908
Unmitigated	3.5164	4.2900e-003	2.5700e-003	4.3908

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.2577 / 2.05377	3.5164	4.2900e-003	2.5700e-003	4.3908
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		3.5164	4.2900e-003	2.5700e-003	4.3908

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
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Land Use	Mgal	MT/yr			
Apartments Low Rise	3.2577 / 2.05377	3.5164	4.2900e-003	2.5700e-003	4.3908
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		3.5164	4.2900e-003	2.5700e-003	4.3908

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.6688	0.2759	0.0000	11.5667
Unmitigated	4.6688	0.2759	0.0000	11.5667

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	23	4.6688	0.2759	0.0000	11.5667

Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		4.6688	0.2759	0.0000	11.5667

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	23	4.6688	0.2759	0.0000	11.5667
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		4.6688	0.2759	0.0000	11.5667

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Attachment 2: EMFAC2017 Calculations

CalEEMod Construction Inputs

Phase	CalEEMod	CalEEMod	Total	Total	CalEEMod	Worker Trip	Vendor Trip	Hauling Trip	Worker Vehicle	Vendor Vehicle	Hauling Vehicle	Worker	Vendor	Hauling
	WORKER	VENDOR	Worker	Vendor	HAULING									
	TRIPS	TRIPS	Trips	Trips	TRIPS									
Demolition	13	0	260	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	2808	0	0
Site Preparation	8	0	24	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	259.2	0	0
Grading	10	0	60	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	648	0	0
Trenching	10	0	60	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	648	0	0
Building Construction	70	19	15400	4180	400	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	166320	30514	2920
Paving	15	0	150	0	40	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	1620	0	292
Architectural Coating	14	0	140	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1512	0	0

Number of Days Per Year

2021	2021/01/04	12/31/21	362	
2022	1/1/22	2022/01/13	13	
2023				
			375	269 Total Workdays

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	2021/01/04	2021/01/29	5	20
Site Preparation	2021/01/30	2021/02/03	5	3
Grading	2021/02/04	2021/02/11	5	6
Trenching	2021/02/04	2021/02/11	5	6
Building Construction	2021/02/12	2021/12/16	5	220
Paving	2021/12/17	2021/12/30	5	10
Architectural Coating	2021/12/31	2022/01/13	5	10

Adjustment Factors for EMFAC2017 Gasoline Light Duty Vehicles					
Year	NOx Exhaust	TOG Evaporative	TOG Exhaust	PM Exhaust	CO Exhaust
NA	1	1	1	1	1
2021	1.0002	1.0001	1.0002	1.0009	1.0005
2022	1.0004	1.0003	1.0004	1.0018	1.0014
2023	1.0007	1.0006	1.0007	1.0032	1.0027
2024	1.0012	1.0010	1.0011	1.0051	1.0044
2025	1.0018	1.0016	1.0016	1.0074	1.0065
2026	1.0023	1.0022	1.0020	1.0091	1.0083
2027	1.0028	1.0028	1.0024	1.0105	1.0102
2028	1.0034	1.0035	1.0028	1.0117	1.0120
2029	1.0040	1.0042	1.0032	1.0129	1.0138
2030	1.0047	1.0051	1.0037	1.0142	1.0156
2031	1.0054	1.0061	1.0042	1.0155	1.0173
2032	1.0061	1.0072	1.0047	1.0169	1.0189
2033	1.0068	1.0083	1.0052	1.0182	1.0204
2034	1.0075	1.0095	1.0058	1.0196	1.0218
2035	1.0081	1.0108	1.0063	1.0210	1.0232
2036	1.0088	1.0121	1.0069	1.0223	1.0244
2037	1.0094	1.0134	1.0074	1.0236	1.0255
2038	1.0099	1.0148	1.0079	1.0248	1.0265
2039	1.0104	1.0161	1.0085	1.0259	1.0274
2040	1.0109	1.0174	1.0090	1.0270	1.0281
2041	1.0113	1.0186	1.0095	1.0279	1.0288
2042	1.0116	1.0198	1.0099	1.0286	1.0294
2043	1.0119	1.0207	1.0103	1.0293	1.0299
2044	1.0122	1.0216	1.0106	1.0299	1.0303
2045	1.0124	1.0225	1.0109	1.0303	1.0306
2046	1.0125	1.0233	1.0111	1.0308	1.0309
2047	1.0127	1.0240	1.0113	1.0311	1.0311
2048	1.0128	1.0246	1.0115	1.0314	1.0313
2049	1.0128	1.0252	1.0116	1.0316	1.0315
2050	1.0129	1.0257	1.0117	1.0318	1.0316

*PM Exhaust off model factor is only applied to the PM Exhaust emissions not start/idle

The off-model adjustment factors need to be applied only to emissions from gasoline light duty vehicles (LDA, LDT1, LDT2 and MDV). Please note that the adjustment factors are by calendar year and includes all model years.

Enter NA in the date field if adjustments do not apply

CalEEMod EMFAC2017 Emission Factors Input

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004195	0.002993	0.002505	0.020914779	0.007501	0	0	0.028194	0
A	CH4_RUNEX	0.003014	0.00833	0.004877	0.006028	0.013957	0.008579	0.005563	0.043447389	0.008191	3.173252	0.363786	0.004397	0.016231
A	CH4_STREX	0.058285	0.097333	0.082576	0.102288	0.015081	0.008911	0.007556	4.02694E-07	0.020446	0.010316	0.270234	0.002418	0.023913
A	CO_IDLEX	0	0	0	0	0.159883	0.130113	0.329149	5.120040204	0.595853	0	0	1.455488	0
A	CO_RUNEX	0.710023	1.588047	1.02652	1.175524	1.363084	0.828204	0.499564	0.578346677	0.86042	24.5025	22.34289	0.326148	1.861999
A	CO_STREX	2.387383	2.810975	3.099389	3.80613	0.991539	0.573395	1.004232	0.021125286	2.351564	0.840986	9.13441	0.364103	2.297315
A	CO2_NBIO_IDLEX	0	0	0	0	9.680097	15.02028	72.8721	957.547574	100.1752	0	0	337.3634	0
A	CO2_NBIO_RUNEX	260.754	318.5637	340.3292	418.0795	774.9255	788.024	1093.778	1538.112879	1393.824	1777.093	218.0199	1088.658	1573.544
A	CO2_NBIO_STREX	54.33961	68.11177	72.8141	89.00829	9.553761	7.024571	7.07751	0.208130914	17.24537	8.69034	64.07041	2.099941	18.7928
A	NOX_IDLEX	0	0	0	0	0.098521	0.128233	0.550347	5.377235454	0.492729	0	0	3.283994	0
A	NOX_RUNEX	0.049353	0.153377	0.104849	0.128363	1.900284	1.603277	2.151133	3.703132091	1.829584	0.594186	1.196036	4.416705	2.015377
A	NOX_STREX	0.207687	0.34138	0.346522	0.43643	0.275806	0.182788	1.476507	2.446683408	0.959423	0.074162	0.27578	0.95906	0.236634
A	PM10_IDLEX	0	0	0	0	0.001144	0.001506	0.001371	0.005322572	0.000834	0	0	0.002983	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.058383889	0.13034	0.075778	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.01023	0.010898	0.012	0.034007905	0.012	0.031089	0.004	0.01134	0.013226
A	PM10_RUNEX	0.001728	0.00256	0.001685	0.001836	0.021532	0.022232	0.036073	0.035535016	0.018809	0.004278	0.00212	0.027889	0.043489
A	PM10_STREX	0.001935	0.002973	0.001952	0.002214	0.000275	0.000117	0.000108	5.22265E-06	0.000187	7.15E-05	0.003707	2.49E-05	0.000288
A	PM25_IDLEX	0	0	0	0	0.001095	0.001441	0.001312	0.00509232	0.000798	0	0	0.002854	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.025021667	0.05586	0.032476	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002558	0.002724	0.003	0.008501976	0.003	0.007772	0.001	0.002835	0.003307
A	PM25_RUNEX	0.001596	0.002359	0.001552	0.001695	0.020553	0.021249	0.034508	0.033997664	0.017981	0.004088	0.00199	0.026674	0.041557
A	PM25_STREX	0.001779	0.002734	0.001795	0.002036	0.000253	0.000108	9.89E-05	4.80203E-06	0.000172	6.58E-05	0.003508	2.29E-05	0.000265
A	ROG_DIURN	0.047673	0.145504	0.07719	0.092024	0.002322	0.00096	0.000479	1.67896E-05	0.001461	0.000233	1.81852	0.000175	0.837952
A	ROG_HTSK	0.120509	0.300904	0.168921	0.200367	0.09944	0.0433	0.023432	0.00089043	0.022583	0.003337	0.907095	0.001752	0.077002
A	ROG_IDLEX	0	0	0	0	0.019479	0.015834	0.016608	0.378561323	0.053177	0	0	0.139942	0
A	ROG_RESTL	0.039424	0.108277	0.066673	0.08232	0.001111	0.000499	0.000231	8.46367E-06	0.000612	0.000136	0.972504	7.87E-05	0.29183
A	ROG_RUNEX	0.012414	0.038121	0.020909	0.026836	0.157891	0.138286	0.088691	0.08551735	0.075044	0.046863	2.547009	0.074601	0.107195
A	ROG_RUNLS	0.244154	1.13135	0.614434	0.677089	0.794429	0.299821	0.148417	0.005918984	0.287839	0.021547	2.715162	0.012476	1.886636
A	ROG_STREX	0.270541	0.518903	0.404422	0.533467	0.0786	0.044973	0.043366	2.10508E-06	0.109534	0.04511	2.105361	0.013541	0.104189
A	SO2_IDLEX	0	0	0	0	9.33E-05	0.000143	0.000691	0.008951393	0.000952	0	0	0.0032	0
A	SO2_RUNEX	0.000106	0.003034	0.010391	0.004132	0.007527	0.007593	0.010391	0.01422213	0.013433	0.007576	0.002157	0.010349	0.01543
A	SO2_STREX	0	0	7E-05	0.000881	9.45E-05	6.95E-05	7E-05	2.05962E-06	0.000171	8.6E-05	0.000634	2.08E-05	0.000186
A	TOG_DIURN	0.047673	0.145504	0.07719	0.092024	0.002322	0.00096	0.000479	1.67896E-05	0.001461	0.000233	1.81852	0.000175	0.837952
A	TOG_HTSK	0.120509	0.300904	0.168921	0.200367	0.09944	0.0433	0.023432	0.00089043	0.022583	0.003337	0.907095	0.001752	0.077002
A	TOG_IDLEX	0	0	0	0	0.027003	0.021206	0.021672	0.434315683	0.068028	0	0	0.196778	0
A	TOG_RESTL	0.039424	0.108277	0.066673	0.08232	0.001111	0.000499	0.000231	8.46367E-06	0.000612	0.000136	0.972504	7.87E-05	0.29183
A	TOG_RUNEX	0.018001	0.05553	0.030445	0.038904	0.194169	0.161508	0.10407	0.137344755	0.095022	3.240302	3.09972	0.086769	0.142848
A	TOG_RUNLS	0.244154	1.13135	0.614434	0.677089	0.794429	0.299821	0.148417	0.005918984	0.287839	0.021547	2.715162	0.012476	1.886636
A	TOG_STREX	0.296207	0.568129	0.442789	0.584065	0.086057	0.049239	0.047481	2.3048E-06	0.119926	0.04939	2.289557	0.014825	0.114074

CalEEMod EMFAC2017 Fleet Mix Input

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.539437	0.054819	0.169782	0.121941	0.037072	0.0092	0.02484	0.01767	0.001937	0.00089	0.019826	0.001449	0.001139
Apartments Low Rise	0.539437	0.054819	0.169782	0.121941	0.037072	0.0092	0.02484	0.01767	0.001937	0.00089	0.019826	0.001449	0.001139

CalEEMod EMFAC2017 Emission Factors Input

Season	EmissionTy	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.003742	0.002535	0.002251	0.021098	0.006835	0	0	0.036822	0
A	CH4_RUNE	0.0012	0.002656	0.002194	0.002368	0.007995	0.006323	0.000932	0.050477	0.002746	1.714809	0.348092	0.003766	0.006526
A	CH4_STRE	0.031959	0.046816	0.04816	0.054694	0.010346	0.005712	0.005167	3.38E-07	0.015871	0.011265	0.257907	0.003271	0.019577
A	CO_IDLEX	0	0	0	0	0.16062	0.126807	0.327783	5.31945	0.719552	0	0	1.844377	0
A	CO_RUNEX	0.444058	0.691323	0.624087	0.630407	0.792575	0.631788	0.151559	0.439984	0.352806	12.98795	19.65442	0.295613	0.461281
A	CO_STREX	1.824891	2.024646	2.435199	2.586926	0.864887	0.455109	0.575379	0.008814	1.759741	0.840986	9.370738	0.45764	1.638413
A	CO2_NBIO_	0	0	0	0	9.018424	14.11637	63.79476	799.7178	110.9113	0	0	325.8152	0
A	CO2_NBIO_	207.5564	254.0153	260.1551	318.7557	706.545	710.6532	948.9356	1274.408	1190.08	1646.355	216.8355	1016.492	1387.363
A	CO2_NBIO_	43.11437	54.09326	55.69199	67.65929	8.916815	6.136498	5.116431	0.097552	13.52812	7.790805	61.60322	2.636774	15.21228
A	NOX_IDLEX	0	0	0	0	0.079477	0.104523	0.344628	4.534394	0.502082	0	0	2.679712	0
A	NOX_RUNE	0.022621	0.050891	0.044395	0.047699	0.949463	0.856379	1.534	2.563711	1.535971	0.668541	1.17501	3.289593	1.563942
A	NOX_STRE	0.135415	0.190079	0.195654	0.227032	0.223239	0.141422	1.884294	2.870274	1.207955	0.080685	0.274344	1.250674	0.238014
A	PM10_IDLE	0	0	0	0	0.001102	0.001562	0.000154	0.002118	0.000167	0	0	0.001801	0
A	PM10_PMI	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.058093	0.13034	0.075778	0.01176	0.7448	0.13034
A	PM10_PMI	0.008	0.008	0.008	0.008	0.010168	0.010926	0.012	0.033854	0.012	0.031089	0.004	0.011185	0.013342
A	PM10_RUN	0.001077	0.001301	0.001166	0.001186	0.014098	0.018882	0.007615	0.020321	0.008455	0.004885	0.002256	0.022803	0.032895
A	PM10_STR	0.001345	0.001679	0.001425	0.001471	0.000223	9.23E-05	6.53E-05	8.38E-07	0.000164	8.80E-05	0.002845	3.59E-05	0.000191
A	PM25_IDLE	0	0	0	0	0.001054	0.001495	0.000147	0.002027	0.00016	0	0	0.001723	0
A	PM25_PMI	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.024897	0.05586	0.032476	0.00504	0.3192	0.05586
A	PM25_PMI	0.002	0.002	0.002	0.002	0.002542	0.002731	0.003	0.008464	0.003	0.007772	0.001	0.002796	0.003336
A	PM25_RUN	0.000991	0.001196	0.001074	0.001093	0.013444	0.018045	0.007282	0.019442	0.008077	0.004667	0.002106	0.021806	0.031437
A	PM25_STR	0.001237	0.001544	0.00131	0.001352	0.000205	8.49E-05	6.00E-05	7.70E-07	0.000151	8.09E-05	0.00267	3.30E-05	0.000176
A	ROG_DIUR	0.02755	0.074113	0.058425	0.074582	0.001845	0.000729	0.000218	3.14E-06	0.001356	0.000249	1.766022	0.000414	0.447617
A	ROG_HTSK	0.074085	0.157433	0.117886	0.145742	0.086564	0.032721	0.01246	0.000164	0.021833	0.003622	0.785519	0.004299	0.041995
A	ROG_IDLEX	0	0	0	0	0.017129	0.014022	0.012846	0.357976	0.054437	0	0	0.177372	0
A	ROG_RESTI	0.024156	0.060403	0.053846	0.070401	0.000948	0.000436	0.000125	2.01E-06	0.000601	0.000148	0.904058	0.000201	0.181274
A	ROG_RUNE	0.004265	0.01118	0.008726	0.009732	0.107897	0.116426	0.012218	0.024027	0.020548	0.026025	2.374883	0.063054	0.056147
A	ROG_RUNL	0.188124	0.606457	0.463298	0.526214	0.837725	0.204324	0.071247	0.000859	0.289857	0.022786	1.79274	0.029625	0.815274
A	ROG_STRE	0.133983	0.224291	0.219578	0.264444	0.053042	0.0278	0.026679	1.76E-06	0.084703	0.049459	1.997172	0.018373	0.076724
A	SO2_IDLEX	0	0	0	0	8.69E-05	0.000135	0.000604	0.007434	0.001052	0	0	0.003094	0
A	SO2_RUNE	0.000101	0.003063	0.009015	0.00315	0.006867	0.006845	0.009015	0.011646	0.011422	0.010616	0.002146	0.009677	0.013586
A	SO2_STRE	0	0	5.06E-05	0.00067	8.82E-05	6.07E-05	5.06E-05	9.65E-07	0.000134	7.71E-05	0.00061	2.61E-05	0.000151
A	TOG_DIURI	0.02755	0.074113	0.058425	0.074582	0.001845	0.000729	0.000218	3.14E-06	0.001356	0.000249	1.766022	0.000414	0.447617
A	TOG_HTSK	0.074085	0.157433	0.117886	0.145742	0.086564	0.032721	0.01246	0.000164	0.021833	0.003622	0.785519	0.004299	0.041995
A	TOG_IDLEX	0	0	0	0	0.023574	0.018504	0.017046	0.412023	0.068383	0	0	0.251657	0
A	TOG_RESTI	0.024156	0.060403	0.053846	0.070401	0.000948	0.000436	0.000125	2.01E-06	0.000601	0.000148	0.904058	0.000201	0.181274
A	TOG_RUNE	0.00619	0.016312	0.012687	0.014111	0.128614	0.134007	0.014581	0.077047	0.026922	1.751856	2.95164	0.073405	0.069325
A	TOG_RUNL	0.188124	0.606457	0.463298	0.526214	0.837725	0.204324	0.071247	0.000859	0.289857	0.022786	1.79274	0.029625	0.815274
A	TOG_STRE	0.146694	0.245571	0.240411	0.289533	0.058074	0.030438	0.02921	1.93E-06	0.092739	0.054152	2.17374	0.020117	0.084003

CalEEMod EMFAC2017 Fleet Mix Input

FleetMixLa	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.59252	0.049804	0.153548	0.102588	0.025706	0.006936	0.025286	0.020119	0.001761	0.000839	0.018633	0.001431	0.000829
Apartment	0.59252	0.049804	0.153548	0.102588	0.025706	0.006936	0.025286	0.020119	0.001761	0.000839	0.018633	0.001431	0.000829

CalEEMod EMFAC2017 Emission Factors Input

Season	EmissionTy	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.003523	0.002276	0.002287	0.021661	0.006601	0	0	0.043797	0
A	CH4_RUNE	0.00085	0.001379	0.001443	0.001532	0.00542	0.005604	0.000736	0.053984	0.001854	1.71481	0.343596	0.002638	0.004829
A	CH4_STRE	0.024441	0.031297	0.035714	0.039582	0.008237	0.004227	0.004875	3.19E-07	0.014249	0.01069	0.2534	0.003971	0.018228
A	CO_IDLEX	0	0	0	0	0.163207	0.125389	0.3316	5.362247	0.733438	0	0	2.176579	0
A	CO_RUNEX	0.396885	0.488599	0.520037	0.520015	0.525653	0.563044	0.128983	0.449068	0.243451	12.98748	18.86415	0.218992	0.293497
A	CO_STREX	1.633395	1.788356	2.196065	2.274856	0.80325	0.423134	0.49088	0.00802	1.552831	0.840986	9.491511	0.526426	1.460096
A	CO2_NBIO_	0	0	0	0	8.477929	13.44414	59.92703	743.3203	109.506	0	0	312.2965	0
A	CO2_NBIO_	191.462	231.7195	233.2934	284.5282	668.9975	668.0961	896.3574	1182.18	1117.552	1639.773	216.4844	955.5978	1304.473
A	CO2_NBIO_	39.32895	48.65673	49.22306	59.41021	8.606223	5.680026	4.740192	0.074454	12.09279	7.433403	60.49476	3.050882	13.81857
A	NOX_IDLEX	0	0	0	0	0.064212	0.088603	0.321306	4.4471	0.523881	0	0	2.0567	0
A	NOX_RUNE	0.019167	0.02788	0.029281	0.031534	0.521886	0.569508	1.501029	2.467997	1.554055	0.667938	1.169068	2.231334	1.307463
A	NOX_STRE	0.122613	0.148504	0.153341	0.173798	0.194965	0.116798	1.89225	2.891298	1.263171	0.076487	0.273568	1.533842	0.233182
A	PM10_IDLE	0	0	0	0	0.001071	0.001541	0.000103	0.001812	0.000174	0	0	0.000988	0
A	PM10_PMI	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.05799	0.13034	0.075778	0.01176	0.7448	0.13034
A	PM10_PMI	0.008	0.008	0.008	0.008	0.01011	0.010933	0.012	0.033798	0.012	0.031089	0.004	0.011077	0.013348
A	PM10_RUN	0.000785	0.000882	0.000859	0.000868	0.009939	0.016399	0.007378	0.019529	0.008643	0.004885	0.002334	0.016047	0.024816
A	PM10_STR	0.001002	0.001167	0.001055	0.001095	0.000174	8.68E-05	6.27E-05	7.35E-07	0.000145	8.80E-05	0.002762	4.45E-05	0.000184
A	PM25_IDLE	0	0	0	0	0.001025	0.001475	9.86E-05	0.001734	0.000167	0	0	0.000945	0
A	PM25_PMI	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.024853	0.05586	0.032476	0.00504	0.3192	0.05586
A	PM25_PMI	0.002	0.002	0.002	0.002	0.002528	0.002733	0.003	0.00845	0.003	0.007772	0.001	0.002769	0.003337
A	PM25_RUN	0.000723	0.000811	0.000791	0.0008	0.00947	0.015669	0.007055	0.018684	0.008258	0.004667	0.002177	0.015341	0.023709
A	PM25_STR	0.000922	0.001073	0.00097	0.001007	0.00016	7.98E-05	5.76E-05	6.75E-07	0.000133	8.09E-05	0.002583	4.09E-05	0.000169
A	ROG_DIUR	0.020521	0.043985	0.044552	0.062192	0.001354	0.000611	0.00018	2.59E-06	0.001163	0.00021	1.725147	0.000608	0.299623
A	ROG_HTSK	0.056928	0.097518	0.085648	0.113323	0.059023	0.024974	0.009865	0.000131	0.02069	0.002906	0.740355	0.006159	0.025771
A	ROG_IDLEX	0	0	0	0	0.015833	0.012973	0.01282	0.358307	0.05456	0	0	0.207941	0
A	ROG_RESTI	0.018636	0.039087	0.042192	0.059485	0.000768	0.000384	0.000111	1.69E-06	0.000548	0.000121	0.86865	0.000299	0.134247
A	ROG_RUNE	0.002786	0.005195	0.005361	0.005912	0.084789	0.107653	0.010757	0.022578	0.016139	0.026025	2.327389	0.043704	0.04505
A	ROG_RUNL	0.172974	0.378112	0.337052	0.388296	0.347213	0.138964	0.055147	0.000724	0.267038	0.018377	1.474759	0.043081	0.348664
A	ROG_STRE	0.09734	0.136236	0.154136	0.18102	0.040243	0.01969	0.024085	1.65E-06	0.074978	0.046661	1.958137	0.022213	0.068134
A	SO2_IDLEX	0	0	0	0	8.18E-05	0.000128	0.000568	0.006893	0.001038	0	0	0.002969	0
A	SO2_RUNE	9.34E-05	0.002929	0.008517	0.002811	0.006507	0.006435	0.008517	0.01076	0.010708	0.010551	0.002142	0.009109	0.012772
A	SO2_STRE	0	0	4.69E-05	0.000588	8.52E-05	5.62E-05	4.69E-05	7.37E-07	0.00012	7.36E-05	0.000599	3.02E-05	0.000137
A	TOG_DIURI	0.020521	0.043985	0.044552	0.062192	0.001354	0.000611	0.00018	2.59E-06	0.001163	0.00021	1.725147	0.000608	0.299623
A	TOG_HTSK	0.056928	0.097518	0.085648	0.113323	0.059023	0.024974	0.009865	0.000131	0.02069	0.002906	0.740355	0.006159	0.025771
A	TOG_IDLEX	0	0	0	0	0.021713	0.016951	0.017036	0.412951	0.068171	0	0	0.296259	0
A	TOG_RESTI	0.018636	0.039087	0.042192	0.059485	0.000768	0.000384	0.000111	1.69E-06	0.000548	0.000121	0.86865	0.000299	0.134247
A	TOG_RUNE	0.004042	0.00758	0.007776	0.008554	0.098877	0.123379	0.012628	0.078961	0.020375	1.751856	2.908266	0.050861	0.054541
A	TOG_RUNL	0.172974	0.378112	0.337052	0.388296	0.347213	0.138964	0.055147	0.000724	0.267038	0.018377	1.474759	0.043081	0.348664
A	TOG_STRE	0.106575	0.149161	0.168759	0.198194	0.044061	0.021558	0.02637	1.81E-06	0.082091	0.051087	2.132044	0.024321	0.074598

CalEEMod EMFAC2017 Fleet Mix Input

FleetMixLa	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.605429	0.048633	0.14922	0.098467	0.022509	0.006198	0.025612	0.021193	0.001758	0.000815	0.018058	0.001366	0.000743
Apartment:	0.605429	0.048633	0.14922	0.098467	0.022509	0.006198	0.025612	0.021193	0.001758	0.000815	0.018058	0.001366	0.000743

**Attachment 3: Climate Action Plan Community Climate Action Plan
Compliance Checklist**

Basic Template for Community Climate Action Plan Compliance Checklist Table for Greenhouse Gas Analysis

Table 1. Private Development Projects

A. General Project Information:

Date: _____

Project name: _____ Case No: _____

Project address: _____

Compliance Checklist Prepared By: _____ Date: _____

Brief Project Description: _____

B. Compliance Checklist Table:

Instructions: Complete the following table by determining if the project will implement actions consistent with the identified GHG reduction measures and providing project-level details in the “Remarks” column. Projects that do not comply with a mandatory measure may be determined to be inconsistent with CA2020.

For voluntary measures, a project is not required to implement the measure, and is only required to identify if it intends to implement the measure for informational purposes only. A project is considered consistent with CA2020 as long as it implements all mandatory measures that are applicable to the project. Voluntary measures implemented should be noted for the purpose of plan monitoring. For the purposes of the monitoring required by CEQA Guideline 15183.5, please email completed checklists to RCPA at checklist@rcpa.ca.gov.

Table 2. Mandatory Requirements and Voluntary Measures Applicable to New Development Projects

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 1: Increase Building Energy Efficiency			
1-S1. Title 24 Standards for Commercial and Residential Buildings <i>[All jurisdictions]</i>	<p>MANDATORY: <i>Does the project comply with local building code regarding energy efficiency?</i></p> <p>The California Building Standards Commission is responsible for adopting and updating Title 24 standards, which then become the default standards for jurisdictions throughout the state. Building departments in each Sonoma County jurisdiction implement this measure through local building code adoption.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	
1-S2. Lighting Efficiency and Toxics Reduction Act (AB 1109) <i>[All jurisdictions]</i>	<p>MANDATORY: <i>Does the project comply with local building code regarding lighting efficiency?</i></p> <p>The California Energy Commission is responsible for implementing this measure through the prescription of minimum efficiency lighting standards. Minimum lighting standards are implemented through local building code.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	
1-L1. Expand the Green Building Ordinance Energy Code <i>[Windsor Only]</i>	<p>MANDATORY: <i>Does the project comply with the Town of Windsor’s building code pertaining to expanded Green Building requirements?</i></p> <p>The Town of Windsor will require compliance with community energy efficiency standards which exceed Title 24 standards 1 by 10%.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
1-L2. Outdoor Lighting <i>[All jurisdictions except Cloverdale]</i>	<p>MANDATORY: <i>Does the project comply with local LED outdoor lighting requirements?</i></p> <p>Participating jurisdictions have identified that they will require new development to use light-emitting diode (LED) bulbs for outdoor lighting.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	
1-L3. Shade Tree Planting <i>[All jurisdictions]</i>	<p>MANDATORY: <i>Does the project comply with local shade tree planting requirements?</i></p> <p>VOLUNTARY: <i>If there are no mandatory shade tree planting requirements applicable to the project, projects are still encouraged to plant shade trees where appropriate. If the project will voluntarily install shade trees, please check “not applicable” and “project includes voluntary shade tree planting,” and describe.</i></p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary shade tree planting	
1-L4. Co-Generation Facilities <i>[Petaluma, unincorporated county only]</i>	<p>VOLUNTARY: <i>Does the project include co-generation facilities?</i></p> <p>For large commercial or industrial projects (>100,000 square feet), co-generation facilities are voluntary but are encouraged for suitable large developments. If the project will voluntarily include cogeneration, please check “not applicable” and describe.</p>	<input type="checkbox"/> Project Includes Co-generation <input type="checkbox"/> Project Does Not Include Co-generation <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 2: Increase Renewable Energy			
2-S2. Solar Water Heaters <i>[All jurisdictions]</i>	<p>VOLUNTARY: <i>Does the project include solar hot water heating?</i></p> <p>Installation of solar water heaters is voluntary (unless required by other statute) but is encouraged for all applicable projects. The state’s Residential Solar Water Heater Program (AB 1470) creates a \$25 million per year, 10-year incentive program to encourage the installation of solar water heating systems that offset natural gas and electricity use in homes and businesses throughout the state. The Public Utilities Commission will design and implement a program of incentives for the installation of solar water heaters.</p>	<input type="checkbox"/> Project Includes Solar Hot Water <input type="checkbox"/> Project Does Not Include Solar Hot Water <input type="checkbox"/> Not Applicable	
2-R1. Community Choice Aggregation <i>[All jurisdictions other than Healdsburg]</i>	<p>VOLUNTARY: <i>Will the project will participate in SCP and, if so, will it participate in CleanStart or EverGreen?</i></p> <p>Participation in SCP is voluntary but is encouraged for all projects. Sonoma Clean Power (SCP) is a community choice aggregation (CCA) program and electricity provider that works with Pacific Gas & Electric Company (PG&E) to provide their customers with electricity that has a higher renewable energy content. SCP offers two participation options for the CCA: the CleanStart option provides 33% renewable power in 2014, and the EverGreen option, which provides 100% renewable power. This measure includes the potential to increase participation in the CleanStart and EverGreen options by 2020.</p>	<input type="checkbox"/> Project Participates in SCP <input type="checkbox"/> Project Does Not Participate in SCP <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
2-L1. Solar in New Residential Development <i>[Cotati, Healdsburg, Petaluma, Rohnert Park, Sebastopol, Sonoma and Windsor only]</i>	<p>MANDATORY: <i>Does the project comply with local requirement(s) for rooftop solar PV on new residential development?</i></p> <p>Each participating jurisdiction will define which new development must provide rooftop solar photovoltaic (PV) by defining qualifying criteria (such as “all projects with more than 5 units”) and the amount of solar required (such as “20% of electricity demand from on-site solar”) depending on the structure of the local measure and target penetration rate.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	
2-L2. Solar in Existing Residential Buildings <i>[All jurisdictions]</i>	<p>MANDATORY: <i>Does the remodel or alteration project comply with local requirement(s) for rooftop solar PV on existing residential development?</i></p> <p>Applies if participating jurisdiction decides that remodels/renovations are required to meet community-defined target for solar installations. Each participating jurisdiction to define qualifying criteria for remodels and renovations (such as the minimum square footage) and amount of solar (such as 10% of remodel square footage) depending on the structure of the local measure and target penetration rate.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
2-L3. Solar in New Non-Residential Developments <i>[Cotati, Healdsburg, Petaluma, Rohnert Park, Sebastopol, Sonoma, and Windsor only]</i>	<p>MANDATORY: <i>Does the project comply with local requirement(s) for rooftop solar PV on new non-residential development?</i></p> <p>Each participating jurisdiction must define which new development must provide rooftop solar PV by defining qualifying criteria (such as “all projects over 50,000 square feet”) and amount of solar required (such as “20% of electricity demand from on-site solar”) depending on the structure of the local measure and target penetration rate.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	
2-L4. Solar in Existing Non-Residential Buildings <i>[All jurisdictions]</i>	<p>MANDATORY: <i>Does the remodel or alteration project comply with local requirement(s) for rooftop solar PV on existing non-residential development?</i></p> <p>Applies if participating jurisdictions decide that removal/renovations are required to meet community-defined targets for solar installations. Each participating jurisdiction must define which remodels/renovations must provide rooftop solar PV by defining qualifying criteria (such as “all projects over 20,000 square feet”) and how much solar is required (such as “provide 10% of electricity demand from remodeled space”) depending on the structure of the local measure and target penetration rate.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 3: Switch Equipment from Fossil Fuel to Electricity			
3-R1. Stationary Fuel Switching Incentives [All jurisdictions]	<p>VOLUNTARY: <i>Does the project will include installation of alternatives to propane, fuel oil, and other fossil fuels for heating</i></p> <p>New buildings are encouraged to use on-site PV electric generation instead of propane for heating and other applicable uses. The Regional Climate Protection Authority (RCPA), SCP, County of Sonoma Energy and Sustainability Division, and Northern Sonoma County Air Pollution Control District (NSCAPCD) will be creating the incentives to support this measure. These agencies will coordinate with the local jurisdictions to develop outreach efforts to achieve widespread implementation each jurisdiction.</p>	<input type="checkbox"/> Project Includes Alternative Fuels <input type="checkbox"/> Project Does Not Include Alternative Fuels <input type="checkbox"/> Not Applicable	
3-L1 Convert to Electric Water Heating [Healdsburg, Petaluma, Rohnert Park, Sebastopol and Windsor only]	<p>MANDATORY: <i>Does the project comply with mandatory requirements adopted by the local jurisdiction?</i></p> <p>VOLUNTARY: <i>If no mandatory requirement applies, but the project will voluntarily include conversion to electric water heating, please check “not applicable” and “project includes voluntary conversion to electric water heating,” and describe.</i></p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary conversion to electric water heating	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 4: Reduce Travel Demand Through Focused Growth			
4-L1. Mixed-Use Development in City Centers and Along Transit Corridors [All jurisdictions]	<p>MANDATORY: <i>Is the project consistent with the jurisdiction’s adopted policies regarding mixed use development, including policies and requirements in adopted general plans, area plans, specific plans, and zoning codes?</i></p> <p>The jurisdictions will identify and support mixed use development in city-centers and transit-oriented development locations through their General Plans, Area Plans, and Specific Plans and zoning codes.</p>	<input type="checkbox"/> Project is Consistent <input type="checkbox"/> Project is Not Consistent <input type="checkbox"/> Not Applicable	
4-L2. Increase Transit Accessibility [All jurisdictions, except unincorporated county]	<p>MANDATORY: <i>Is the project consistent with the jurisdiction’s adopted policies regarding transit accessibility, including policies and requirements in adopted general plans, area plans, specific plans, and zoning codes?</i></p> <p>Each jurisdiction will identify potential areas for transit-oriented development and include policies and incentives to encourage development near high-quality transit service. General Plans, Specific Plans, zoning codes, and ordinances will define requirements for transit accessibility to encourage transit-oriented development. Each jurisdiction will also identify potential incentives that may include reduced parking requirements, reductions in building and permit fees, density increases, and other related items.</p>	<input type="checkbox"/> Project is Consistent <input type="checkbox"/> Project is Not Consistent <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
4-L3. Supporting Land Use Measures [All jurisdictions]	<p>VOLUNTARY: <i>Does the project include installation of transit and/or other amenities as described below?</i></p> <p>Participating jurisdictions will encourage new development to provide amenities to support transit and other modes of transportation, including transit stops, bicycle facilities, good pedestrian networks, car-sharing locations, and electric vehicle (EV) charging stations and to encourage residential developments at a variety of price points to increase options for workers (especially public serving employees) of Sonoma to live within the county.</p>	<input type="checkbox"/> Project Includes Transit and/or Other Amenities <input type="checkbox"/> Project Does Not Include Transit and/or Other Amenities <input type="checkbox"/> Not Applicable	
4-L4. Affordable Housing Linked to Transit [All jurisdictions, except unincorporated county]	<p>MANDATORY: <i>Does the project comply with adopted policies and ordinances regarding location of affordable housing near transit corridors, transit hubs and downtown cores?</i></p> <p>VOLUNTARY: <i>If there are no mandatory requirements and the project will voluntarily provide support for affordable housing near transit, please check “not applicable” and “project includes voluntary support,” and describe.</i></p> <p>Each jurisdiction would develop policies and incentives to encourage affordable housing development for cities and unincorporated county. The jurisdictions would draft new ordinances or offer incentives encouraging the affordable housing development near transit hubs and city centers. Potential incentives could include reduced parking requirements, reductions in building and permit fees, increased density, and other related items.</p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary support for affordable housing near transit	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 5: Encourage a Shift Toward Low-Carbon Transportation Options			
5-R3. Sonoma Marin Area Rail Transit [Cloverdale, Healdsburg, Windsor, Rohnert Park, Cotati, Petaluma and unincorporated county]	<p>MANDATORY: <i>If project is in proximity to a SMART station or connecting pedestrian and bicycle facilities, is it consistent with any adopted requirements supportive of SMART, including policies and requirements in General Plans, Area Plans, Specific Plans, Station Area Plans, zoning codes, or infrastructure plans?</i></p> <p>SMART and jurisdictions along the SMART Corridor are establishing policies to support SMART, such as transit-oriented development at planned SMART stations, future local transit planning for SMART, and pedestrian and bicycle facilities to connect to SMART stations.</p>	<input type="checkbox"/> Project is Consistent <input type="checkbox"/> Project is Not Consistent <input type="checkbox"/> Not Applicable	
5-R4. Trip Reduction Ordinance [All jurisdictions]	<p>MANDATORY: <i>Does the project comply with the adopted Trip Reduction Ordinance?</i></p> <p>Sonoma County Transportation Authority (SCTA) will develop and local jurisdictions will adopt and both will implement a Trip Reduction Ordinance (TRO) requiring employers with 50+ employees to offer one of the following: pre-tax transit expenses, transit or vanpool subsidy, free or low-cost shuttle, or an alternate benefit. The TRO may also consider more ambitious recommendations such as specific transportation demand management (TDM) programs offered to all employees, annual monitoring and reporting requirements, or specific trip reduction or mode share target rates. The TRO will also provide a non-trip reduction alternative in the form of purchase of an equivalent amount of GHG offsets for employer.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
5-R5. Supporting Measures for the Transportation Management Program <i>[All jurisdictions]</i>	<p>VOLUNTARY: <i>Does the project include Transportation Demand Management measures?</i></p> <p>SCTA will develop a TDM program that incorporates the following: Support for employer-based TDM program efficiency; TDM programs in specified business districts; support for development of jurisdiction-specific TDM programs, including programs such as transit subsidies or parking cash-out for new development. The jurisdictions may develop a TDM program for employers which may include the strategies mentioned above and assist interested employers in implementing strategies, and may offer financial incentives for employers.</p>	<input type="checkbox"/> Project Includes TDM Measures <input type="checkbox"/> Project Does Not Include TDM Measures <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
5-R6. Reduced Cost Transit Passes [All jurisdictions]	<p>MANDATORY: <i>Does the project comply with any adopted reduced-cost transit pass requirements?</i></p> <p>VOLUNTARY: <i>Where subsidized transit pass provision is not a mandatory requirement, it is nonetheless encouraged. If the project will include the voluntary provision of subsidized transit passes, please check “not applicable” and “includes voluntary reduced-cost transit passes,” and describe.</i></p> <p>SCTA would work to identify funding for and/or assist in subsidizing reduced transit passes. Sonoma County Transit, Petaluma Transit, and Santa Rosa Transit would be responsible for rolling out and publicizing reduced transit passes. Agencies would encourage employers and new developments to provide reduced-cost monthly transit passes. Each jurisdiction would partner with transit agencies to negotiate cost-sharing and facilitate transit pass distribution. Requirements could be implemented for new or expanded employers with 50 employees or more (to be consistent with Senate Bill 1339) and new residential projects of 25 units or more. If a local jurisdiction decides to make requirements mandatory, then a non-trip reduction alternative, in the form of required purchase of an equivalent amount of GHG offsets, shall be provided for employers choosing not to implement trip reductions.</p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary reduced-cost transit passes	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
5-R7. Alternative Travel Marketing & Optimize Online Service [All jurisdictions]	<p>MANDATORY: <i>Does the project comply with any adopted requirements for marketing alternative transportation services?</i></p> <p>VOLUNTARY: <i>Where alternative transportation marketing is not a mandatory requirement, it is nonetheless encouraged. If the project will include the voluntary marketing for alternative transportation, please check “not applicable” and “includes voluntary marketing measures,” and describe.</i></p> <p>SCTA would be the lead agency to implement this measure and would find funding for or subsidize communication channels to provide information on alternate travel means. Local jurisdictions would work with SCTA to ensure that consistency in service and information is maintained throughout the county. SMART will also be doing travel marketing for its services.</p> <p>The jurisdictions would provide targeted marketing in various formats to employees, employers, residents, and developers. Agencies would update existing online resources with current TDM strategy information and promote the use of these online resources when implementing other TDM strategies. Marketing materials should provide accurate and timely information regarding commute reduction strategies. Information could be rolled into human resources policies for new employee orientation. Real-time transit data could be made available online with trip planning tools, with mobile phone apps as a future development. These marketing efforts could be made mandatory for new residential projects consisting of 25 units or more, and new or expanded projects with 50 employees or more (consistent with Senate Bill 1339).</p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary marketing measures for alternative transportation	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
5-R8. Safe Routes to School [All jurisdictions]	<p>MANDATORY: <i>Is the project consistent with adopted requirements for safe routes to school?</i></p> <p>VOLUNTARY: <i>Where these requirements are not mandatory, they are encouraged where applicable. If the project will provide any voluntary support for safe routes to school, please check “not applicable” and “includes voluntary Safe Routes to School,” and describe.</i></p> <p>SCTA, working with local school districts, would be the lead agency to implement this measure and find funding for or subsidize safe routes to school programs. Local jurisdictions and school districts would need to coordinate on bus routes that cross jurisdictions. SCTA would partner with local schools to tailor the program to fit each school’s needs and help look for funding to support the program.</p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary Safe Routes to School measures	
5-R9. Car Sharing Program [All jurisdictions]	<p>VOLUNTARY: <i>Will the project provide car share parking spaces?</i></p> <p>RCPA/SCTA would be the lead agency to implement this measure, and would work with the Sonoma County Air Resources Team and find funding for or subsidize mobile device infrastructure needed to implement a car sharing program. RCPA/SCTA could consider partnering with commercial car sharing service providers to identify locations or markets to roll out the service.</p>	<input type="checkbox"/> Project Includes Car Share Parking <input type="checkbox"/> Project Does Not Include Car Share Parking <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
5-L1. Local Transportation Demand Management Program [Cloverdale, Cotati, Healdsburg, Rohnert Park, Sebastopol, unincorporated county]	<p>MANDATORY: <i>Is the project consistent with adopted TDM requirements for businesses with 50 or more employees?</i></p> <p>VOLUNTARY: <i>If the project is not required to implement TDM, then TDM measures are still encouraged where appropriate. If any voluntary TDM measures will be implemented by the project, please check “not applicable” and “includes voluntary TDM above minimum TRO requirements,” and describe.</i></p> <p>This measure supports TDM measures for employers with fewer than 50 employees, additional voluntary TDM measures (beyond the minimum TRO requirements) for larger employers, and requirements for TDM measures in new large residential projects.</p> <p>TDM programs may include: participation in vanpool programs, EV charging stations, reduced parking requirements for affordable or senior housing projects, reduced cost transit passes, unbundled parking costs, priced parking, bicycle amenities, car-share pods, telecommuting and alternative work schedules, ride-matching services, and emergency ride home.</p> <p>Each jurisdiction will define the threshold for application of the ordinance, the specific TDM measures to be implemented, and methods to methods for monitoring employer compliance. Incentives for voluntary TDM by employers with fewer than 50 employees may also be used, such as reduced parking requirements, reductions in fees, and other related items.</p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary TDM measures above minimum TRO requirements	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
5-L2. Carpool-Incentives & Ride-Sharing Program <i>[Cloverdale, Cotati, Healdsburg, Rohnert Park, Sebastopol, unincorporated county]</i>	<p>VOLUNTARY: <i>Does the project will include voluntary carpool or rideshare elements or support?</i></p> <p>Each participating jurisdiction will create or promote a regional ride-sharing program and encourage participation by local employers through their TDM programs with a focus on large employers to create programs.</p>	<input type="checkbox"/> Project Includes Carpool or Rideshare Measures <input type="checkbox"/> Project Does Not Include Carpool or Rideshare Measures <input type="checkbox"/> Not Applicable	
5-L3. Guaranteed Ride Home <i>[Cloverdale, Cotati, Sebastopol, unincorporated county]</i>	<p>MANDATORY: <i>Does the project comply with any adopted “guaranteed ride home” requirements?</i></p> <p>VOLUNTARY: <i>If there are no mandatory guaranteed ride home requirements applicable to the project and the project will voluntarily implement guaranteed ride home programs, please check “not applicable” and “voluntary guaranteed ride home measures,” and describe.</i></p> <p>Participating jurisdictions would implement a guaranteed ride home program that provides a free car share, shuttle, or taxi ride home to employees in case of an emergency (illness, family crisis, unscheduled overtime) for employees who uses an alternative to driving alone to work (public transit, carpooling, vanpooling, biking, or walking) on the day of the emergency.</p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary guaranteed ride home measures	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
5-L4. Supporting Bicycle/Pedestrian Measures <i>[All jurisdictions]</i>	<p>MANDATORY: <i>Does the project comply with mandatory bike and pedestrian master plan requirements?</i></p> <p>VOLUNTARY: <i>If there are no facilities in the bike and pedestrian master plan in the project area and no relevant municipal code requirement, but the project will voluntarily include bicycle and pedestrian facilities, please check “not applicable” and “voluntary bicycle/pedestrian facilities,” and describe.</i></p> <p>SCTA will work with the cities and county transit agencies to coordinate the identification and implementation of cross-jurisdictional bicycle and pedestrian corridor projects. Each jurisdiction will update municipal codes and prepare or update their bike/pedestrian master plan, as needed. The bike and pedestrian master plans will outline needed improvements and the areas identified for expansion. Communities will also coordinate with transit agencies to improve the bike-transit facilities. Facilities may include projects to close bicycle/pedestrian route gaps, increased bike storage on buses, at bus stops, and at transit hubs, bicycle facilities at all park-and-ride lots and transit stations, and bike sharing programs.</p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary bicycle and pedestrian facilities	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
5-L5. Traffic Calming [All jurisdictions]	<p>MANDATORY: <i>Is the project consistent with adopted traffic calming measures?</i></p> <p>Each jurisdiction will develop a strategy to implement traffic-calming measures in downtown cores, accident hotspot locations, near schools and libraries, and other areas appropriate to their community setting. Traffic-calming measures can be made a condition of new development approvals where appropriate and can be incorporated in General Plans, Area Plans, and Specific Plans. Specific measures may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.</p>	<input type="checkbox"/> Project is Consistent <input type="checkbox"/> Project is Not Consistent <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
5-L6. Parking Policies [Cloverdale, Healdsburg, and unincorporated county only]	<p>MANDATORY: Does the project comply with parking policies or ordinances adopted to reduce single-occupancy vehicle travel?</p> <p>VOLUNTARY: If there are no mandatory parking requirements applicable to the project, but the project will voluntarily implement any measures such as shared parking, reduced parking, providing transit or bicycle facilities, etc., please check “not applicable” and “voluntary parking measures,” and describe</p> <p>This measure would implement additional parking policies to promote reduction in single-occupancy vehicle travel. Requirements may include on-street market pricing in downtown areas, reduced parking requirements, shared parking, and in-lieu fees, in combination with providing transit and bicycle facilities, in appropriate areas.</p> <p>Each participating jurisdiction would be responsible for implementing this measure. Staff would develop a process for implementation and management, which may include updating municipal codes. The jurisdictions would draft new ordinances and/or general plan policies, or offer incentives encouraging reduced parking requirements and increased transit or bicycle facilities.</p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary parking measures	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
5-L7. Supporting Parking Policy Measures <i>[All jurisdictions, except Rohnert Park]</i>	<p>MANDATORY: <i>Does the project comply with any mandatory requirements for prioritized parking for hybrid/EV cars, carpools, and vanpools?</i></p> <p>VOLUNTARY: <i>If there are no mandatory prioritized parking requirements, but the project will voluntarily implement any prioritized parking, please check “not applicable” and “voluntary measures,” and describe</i></p> <p>This measure includes the promotion of prioritized parking for hybrid/EV cars, carpools, vanpools at city-centered corridors, new developments, public parking areas, and municipal facilities. Participating jurisdictions may consider amending zoning code to require new parking lots to provide prioritized parking for carpools, vanpools, hybrids, and EVs, and provide charging facilities and/or incentives.</p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary priority parking for EVs and/or other transport modes	

Goal 6: Increase Vehicle and Equipment Fuel Efficiency

All measures supporting this goal (Measure 6-S1. Pavley Emissions Standards for Passenger Vehicles and the Low Carbon Fuel Standard [LCFS], Measure 6-S2. Advanced Clean Cars, and Measure 6-S3. Assembly Bill 32 Vehicle Efficiency Measures) are state measures that will benefit new projects using passenger vehicles and trucks, but will require no project-level actions.

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 7: Encourage a Shift Toward Low-Carbon Fuels in Vehicle and Equipment			
7-R1. Shift Sonoma County (Electric Vehicles)	<p>With RCPA/SCTA as the lead, and in partnership with SCP, this measure would implement a countywide EV promotion program. The measure may include incentives for EV home, commercial, or institutional chargers, promotion of EV purchase, preferential public parking, working with employers to provide preferential parking and charging stations, working with the hospitality and wineries to promote an “EV/wine trail,” demonstration projects, education, and outreach.</p> <p>Implementation of this measure for new development projects will occur under local measure 7-L1.</p>	Not Applicable to development projects; see Measure 7-L1	
7-R2. Alternative Fuels for Transit Vehicles	<p>VOLUNTARY: <i>Does the project will include the use of alternatively fueled vehicles?</i></p> <p>SCTA will work with transit agencies to replace diesel and gasoline buses with hybrid buses or compressed natural gas buses and to establish a goal to replace at least 50% of the bus fleet with alternatively fueled buses. This measure may also include the replacement of diesel and gasoline buses with electric buses as feasible.</p>	<input type="checkbox"/> Project Includes Alternative Fueled Vehicles <input type="checkbox"/> Project Does Not Include Alternative Fueled Vehicles <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
7-L1. Electric Vehicle Charging Station Program <i>[All jurisdictions]</i>	<p>VOLUNTARY: <i>Does the project include EV charging stations and/or EV-ready infrastructure?</i></p> <p>The participating jurisdictions would work with PG&E and SCP to identify grants and other funding sources to help finance the installation of charging stations throughout the county. In addition, SCP, County of Sonoma Energy and Sustainability Division (through available PACE financing options), and NSCAPCD would create a package to install and finance charging stations.</p>	<input type="checkbox"/> Project Includes EV Charging or Infrastructure <input type="checkbox"/> Project Does Not Include EV Charging or Infrastructure <input type="checkbox"/> Not Applicable	
7-L2 Electrify Landscaping Equipment <i>[Cotati, Healdsburg, Petaluma, Sebastopol, and Windsor]</i>	<p>MANDATORY: <i>Does the project comply with adopted requirements for electrified landscaping equipment?</i></p> <p>Participating jurisdictions would adopt an ordinance that reduces gasoline-powered landscaping equipment use and/or reduces the number and operating time of such equipment. New development would be required to provide adequate amount and location of electrical outlets to allow use of electrical landscaping equipment. New development would also be also required to prepare landscaping plans that commit to any jurisdictional targets for use of alternatively fueled or electric landscape equipment goals.</p>	<input type="checkbox"/> Project is Consistent <input type="checkbox"/> Project is Not Consistent <input type="checkbox"/> Not Applicable	
7-L3. Electrify Construction Equipment <i>[Cotati, Healdsburg, Petaluma, Sebastopol, and Windsor]</i>	<p>MANDATORY: <i>Does the project comply with adopted requirements for use of alternatively fueled equipment (including electrical equipment) during project construction?</i></p> <p>Each participating jurisdiction has identified a goal for construction equipment use of alternative fuels or electricity in place of diesel and gasoline.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
7-L4. Reduce Fossil Fuel Use in Equipment through Efficiency or Fuel Switching <i>[Only applies to agricultural projects]</i>	<p>VOLUNTARY: <i>Does the project include use of alternatively fueled and/or efficient agricultural equipment and vehicles?</i></p> <p>This voluntary measure would include supporting farmers to reduce fuel use in agricultural equipment by converting equipment currently using gasoline, diesel, or liquid propane gas to alternative fuels with lower GHG intensity (such as natural gas, biofuels, or solar electricity) as feasible, keep equipment maintained and in good working order, replace old equipment with newer and more efficient equipment, and use global positioning systems (GPS) to optimize equipment operation. A particular focus may be expanding renewable energy use for water pumps and wind machines.</p>	<input type="checkbox"/> Project Includes Alternatively Fueled equipment/vehicles <input type="checkbox"/> Project Does Not Include Alternatively Fueled equipment/vehicles <input type="checkbox"/> Not Applicable	
Goal 8: Reduce Idling			
8-L1. Idling Ordinance <i>[Petaluma, Rohnert Park, Sebastopol, Sonoma, and unincorporated county only]</i>	<p>MANDATORY: <i>Does the project comply with the adopted idling ordinance?</i></p> <p>Participating jurisdictions will adopt new ordinances that limit idling for commercial vehicles to no more than 3 minutes.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	
8-L2. Idling Ordinance for Construction Equipment <i>[Petaluma, Rohnert Park, Sebastopol, and unincorporated county only]</i>	<p>MANDATORY: <i>Does the project comply with the adopted idling ordinance for construction equipment.</i></p> <p>Participating jurisdictions will adopt new ordinances that limit idling for construction vehicles and equipment to no more than 3 minutes.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 9: Increase Solid Waste Diversion			
9-R1. Waste Diversion Goal <i>[All jurisdictions]</i>	<p>MANDATORY: <i>Does the project comply with applicable countywide and/or jurisdictional ordinances concerning mandatory waste minimization and diversion requirements?</i></p> <p>The Sonoma County Waste Management Agency (SCWMA) would be the lead agency for implementing this measure. SCWMA could create a fund for new and expanded waste collection programs that the jurisdictions could contribute money to, and facilitate countywide or individual jurisdiction waste ordinances. Local jurisdictions would work with waste providers to identify baseline diversion rates, opportunities for additional waste diversion, and achievable diversion goals before a certain time period, all of which can be incorporated into the waste provider’s contract with a jurisdiction.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	
9-L1. Construction and Demolition Reuse and Recycling Ordinance <i>[All jurisdictions]</i>	<p>MANDATORY: <i>Does the project include a Construction Phase Recycling Plan that meets the minimum diversion rate for C&D waste?</i></p> <p>Each jurisdiction has or will adopt minimum diversion rates for Construction and Demolition (C&D) waste. <i>[NOTE: Community to identify specific diversion rate.]</i></p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	
Goal 10: Increase Capture and Use of Methane from Landfills			
<p>The measure supporting this goal (Measure 10-R1. Waste-to-Energy Facilities) would only apply to landfills and would support installation of methane capture technology and associated monitoring systems on all landfills without methane capture and that are not otherwise required to install or upgrade equipment under the state rule, with a goal of reaching the highest feasible methane capture rate (i.e., approaching 100%). This measure would also increase methane capture at landfills that already capture methane by expanding existing collection wells and would support increased electricity generation capacity at the Central Disposal Site by an additional 1.8 gigawatt-hour (GWh) by 2020. While this measure will help to reduce the GHG emissions associated with landfilled waste from new development, it requires no project-level action by development projects.</p>			

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 11: Reduce Water Consumption			
11-R1. Countywide Water Conservation Support and Incentives [All jurisdictions]	<p>MANDATORY: <i>Does the project comply with all local or regionally adopted water conservation measures?</i></p> <p>Sonoma County Water Agency (SCWA) is responsible for implementing this measure in cooperation with the local jurisdictions. SCWA would identify areas where additional conservation would be most effective and develop conservation goals. The local jurisdictions would work with SCWA to identify conservation opportunities, and to develop new ordinances or general plan policies pertaining to water conservation.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	
11-L1. Senate Bill X7-7 – Water Conservation Act of 2009 [All jurisdictions]	<p>MANDATORY: <i>Does the project comply with all local or regionally adopted water conservations to implement the requirements of SB X7-7?</i></p> <p>This statute requires urban water agencies throughout California to increase conservation to achieve a statewide goal of a 20% reduction in urban per-capita use (compared to nominal 2005 levels) by December 31, 2020 (referred to as the “20X2020 goal”). Each urban water retailer in the county subject to the law has established a 2020 per-capita urban water use target (in terms of gallons per capita per day) to meet this goal. Specific per-capita water use reduction goals vary by water agency.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
11-L2. Water Conservation for New Construction <i>[Petaluma, Rohnert Park, Sebastopol, Sonoma, and Windsor only]</i>	<p>MANDATORY: <i>Does the project comply with all local building standards and codes relative to water efficiency in new construction?</i></p> <p>Under this measure, participating jurisdictions will update building standards and codes for new buildings to require adoption of voluntary CALGreen Tier 1 water efficiency measures, including use of low-water irrigation systems, installation of rainwater systems, installation of water-efficient appliances and plumbing fixtures, a 30% to 40% reduction over baseline indoor water use, and a 55% to 60% reduction in outdoor potable water use (CALGreen Tier 1 or 2).</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	
11-L3. Water Conservation for Existing Buildings <i>[Petaluma, Rohnert Park, Sebastopol, Sonoma, and Windsor only]</i>	<p>MANDATORY: <i>Does the project comply with adopted requirements to implement water conservation upgrades in existing buildings?</i></p> <p>Under this measure, the participating jurisdictions would adopt a water reduction target for existing development that exceeds the Senate Bill X7-7 20% reduction target and implement a program to renovate existing buildings to achieve higher levels of water efficiency. The participating jurisdictions could require water conservation upgrades for all existing buildings that undergo substantial remodels or renovations (such as compliance with Title 24 Part 6 (2013) CALGreen Tier 1 voluntary water efficiency standards) and/or incentivize water efficiency upgrades outside the permitting process.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 12: Increased Recycled Water and Greywater Use			
12-R1. Recycled Water <i>[All jurisdictions]</i>	<p>VOLUNTARY: <i>Does the project include the use of recycled water, where available?</i></p> <p>Under this measure, the wastewater treatment providers in the county and the jurisdictions would coordinate on the strategies for implementation of this measure, including use of recycled water where appropriate in new development and encouraging the retrofit of irrigation systems to promote the use of recycled water for landscaping and irrigation.</p> <p>Consider programs to collect stormwater for on-site reuse for landscape irrigation.</p>	<input type="checkbox"/> Project Includes the Use of Recycled Water <input type="checkbox"/> Project Does Not Include the Use of Recycled Water <input type="checkbox"/> Not Applicable	
12-L1. Greywater Use <i>[All jurisdictions except Cloverdale, Cotati, and Rohnert Park]</i>	<p>MANDATORY: <i>Does the project comply with adopted requirements for the use of greywater for non-potable uses?</i></p> <p>VOLUNTARY: <i>If no local mandate exists, and the project will use greywater for non-potable uses, please check “not applicable” and describe.</i></p> <p>Each participating jurisdiction has established a goal to replace a certain percentage of potable water that was previously being used for residential non-potable uses (landscaping, toilet water, etc.) with greywater.</p>	<input type="checkbox"/> Project Complies with Mandatory Requirements <input type="checkbox"/> Project Does Not Comply with Mandatory Requirements <input type="checkbox"/> Mandatory Requirements Not Applicable <input type="checkbox"/> Project includes voluntary use of greywater for non-potable uses	
Goal 13: Increase Water and Wastewater Infrastructure Efficiency			
<p>The measures supporting this goal (Measure 13-R1. Infrastructure and Water Supply Improvement and Measure 13-R2. Wastewater Treatment Equipment Efficiency) apply to water and wastewater infrastructure only and not to individual development projects, but will benefit new development by reducing the indirect GHG emissions of providing water and wastewater services by promoting increased efficiency. No project action is required.</p>			

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 14: Increase Use of Renewable Energy in Water and Wastewater Systems Including Methane			
<p>The measures supporting this goal (Measure 14-R1. Sonoma County Agency Carbon Free Water by 2015 and Measure 14-L1. Green Energy for Water Production and Wastewater Processing in Healdsburg and Cloverdale) apply to water infrastructure only and not to individual development projects, but will benefit new development by reducing the indirect GHG emissions of providing water and wastewater services by promoting use of renewable energy. No project action is required.</p>			
Goal 15: Reduce Emissions from Livestock Operations			
15-L1. Livestock Manure Management <i>[Livestock and Dairy projects only]</i>	<p>VOLUNTARY: <i>Does the project include manure management measures to reduce methane emissions?</i></p> <p>This voluntary measure would encourage manure management techniques that reduce emissions from the decomposition of manure at dairies. Strategies include on-site management approaches that reduce methane emissions, like dry composting or pasturing, as well as opportunities to convert methane to fuel using some form of methane digestion.</p>	<input type="checkbox"/> Project Includes Manure Management Measures <input type="checkbox"/> Project Does Not Include Manure Management Measures <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
15-L2 Reduce Emissions from Enteric Fermentation <i>[Dairy and livestock projects only]</i>	<p>VOLUNTARY: <i>Does the project include enteric fermentation reduction methods?</i></p> <p>This voluntary measure would encourage dairies and livestock operations to explore ways to reduce GHG emissions from enteric fermentation (both methane and nitrous oxide). Potential methods for reducing these emissions include manipulating animal diet to inhibit a rumen environment favorable to methanogens. A range of potential emission options include dietary oils (such as whole cottonseed oil, sunflower oil, coconut oil, and palm oil), the use of corn or legume silage in place of grass silage, use of concentrate feeds, nitrates, ionophores, and tannins, and improving forage quality and the overall efficiency of dietary nutrient use. Potential use of pomace from wine-making should also be explored.</p>	<input type="checkbox"/> Project Includes Enteric Fermentation Reduction <input type="checkbox"/> Project Does Not Include Enteric Fermentation Reduction <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
Goal 16: Reduce Emissions from Fertilizer Use			
16-L1. Optimize Fertilizer Use [Agricultural projects only]	<p>VOLUNTARY: <i>Exploration of methods to optimize fertilizer is encouraged, where feasible, especially when it results in reduction of nitrogen fertilizer usage. If the project will employ methods to optimize fertilizer use, please check “implements” and describe.</i></p> <p>Under this measure, the County would implement a policy to encourage voluntary agricultural practices that reduce or eliminate the need for fertilizer (especially synthetic fertilizer). The County and any other interested jurisdictions would work with growers to provide incentives for organic fertilizers as an alternative. The County would create an outreach program to help growers optimize nitrogen application rates, decrease overall fertilizer inputs and cost, maintain current crop yields, and reduce emissions of nitrous oxide.</p>	<input type="checkbox"/> Project Includes Fertilizer Optimization <input type="checkbox"/> Project Does Not Include Fertilizer Optimization <input type="checkbox"/> Not Applicable	
Goal 17: Protect and Enhance the Value of Open and Working Lands			
17-R1. Conserve Open Space and Working Lands [SCAPOSD, working with other agencies (including cities and the County) and non-governmental partners]	<p>VOLUNTARY: <i>Does the project include conservation of open space and/or working lands?</i></p> <p>Under this measure, the partnering agencies and other entities will support the preservation of natural open space and working lands to prevent loss of carbon stock.</p>	<input type="checkbox"/> Project Includes Land Conservation Element <input type="checkbox"/> Project Does Not Include a Land Conservation Element? <input type="checkbox"/> Not Applicable	

GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
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17-R2. Enhance Natural Resources on Open and Working Lands through Climate Beneficial Management Practices <i>[RCD and partners]</i>	<p>VOLUNTARY: <i>Does the project include enhancement of natural resources on open and working lands?</i></p> <p>Under this measure, the communities and regional partners would continue to work to enhance the natural resources of open and working lands, including agricultural and timber lands.</p>	<input type="checkbox"/> Project Includes Enhancement of Open and Working Lands <input type="checkbox"/> Project Does Not Include Enhancement of Open and Working Lands <input type="checkbox"/> Not Applicable	
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Goal 18: Promote Sustainable Agriculture

18-L1. Certification Programs <i>[Agricultural projects and wineries only]</i>	<p>VOLUNTARY: <i>Does the project seek certification under relevant certification protocols, including providing documentation of that certification when achieved?</i></p> <p>The County would support sustainable agricultural certification programs that promote practices that will reduce GHG emissions and/or enhance carbon stocks and sequestration. This measure supports development and implementation of rigorous standards in documenting, tracking, and disclosing sustainability practices that reduce GHG emissions. Some of the certification programs include Certified Organic, Certified Biodynamic, and Certified California Sustainable Winegrowing, among others. Sonoma County Winegrowers is leading a 100% sustainable wine partnership with county wineries and vineyard owners and operators.</p>	<input type="checkbox"/> Project Includes Sustainable Certification <input type="checkbox"/> Project Does Not Include Sustainable Certification <input type="checkbox"/> Not Applicable	
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GHG Reduction Measure [Communities]	Measure Descriptions and Requirements	Project Compliance	Remarks
18-L2. Promote the Sale of Local, Sustainable, and Organic Grown Foods and/or Products [All jurisdictions]	VOLUNTARY: <i>Does the project include any support for local, sustainable, and organic (or equivalent) foods?</i> The County and local jurisdictions would support local farmers' markets to provide community residents with local, sustainable, and organic (or equivalent) sources of food that can displace carbon-intensive food production practices.	<input type="checkbox"/> Project Implements Measure <input type="checkbox"/> Project Does Not Implement Measure <input type="checkbox"/> Not Applicable	
18-L3. Urban Agriculture [All jurisdictions]	VOLUNTARY: <i>Does the project include any opportunities for small-scale urban farming areas and/or gardens?</i> Under this measure, participating jurisdictions would amend zoning code to allow for small-scale urban farming areas and gardens in the cities in appropriate areas (excluding areas that are more suitable for infill and transit-oriented mixed land uses).	<input type="checkbox"/> Project Implements Measure <input type="checkbox"/> Project Does Not Implement Measure <input type="checkbox"/> Not Applicable	
Goal 19: Increase Carbon Sequestration			
19-R1. Carbon Farming [The County, Resource Conservation Districts, Natural Resources Conservation Service, and the SCAPOSD]	VOLUNTARY: <i>Does the project include carbon farming activities?</i> Under this measure, the County and the partnering agencies will promote increased carbon sequestration on croplands and working rangelands by adding soil organic material and other measures and will support increasing availability of local compost.	<input type="checkbox"/> Project Includes Carbon Farming <input type="checkbox"/> Project Does Not Include Carbon Farming <input type="checkbox"/> Not Applicable	
19-R2. Establish a Target for Increased Carbon Sequestration [RCPA, SCAPOSD, RCDs, NRCS, and partners]	VOLUNTARY: <i>Does the project meet or support any established carbon sequestration targets?</i> Under this measure, the RCPA will work with local partners to establish short- and long-term targets for increasing carbon sequestration throughout the County.	<input type="checkbox"/> Project Meets Established Target(s) <input type="checkbox"/> Project Does Meet Established Target (s) <input type="checkbox"/> Not Applicable	