APPENDIX C

AIR QUALITY AND GREENHOUSE GAS EMISSIONS ASSESSMENT

STANFORD WEDGE HOUSING DEVELOPMENT AIR QUALITY & GREENHOUSE GAS EMISSIONS ASSESSMENT

Portola Valley, California

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Introduction

The purpose of this report is to address air quality and greenhouse gas (GHG) emissions impacts associated with the proposed faculty housing project on a portion of Stanford University property referred to as the "Stanford Wedge." The property is 75.4 acres in size located adjacent to Alpine Road in Portola Valley, California. The air quality impacts and GHG emissions associated with the project would be from the demolition of the existing uses, site grading, installation of infrastructure, and construction and operation of 27 single-family homes and 12 multifamily housing units. Air pollutant and GHG emissions associated with the construction and operation of the project were predicted using appropriate computer models. In addition, the potential construction community risk impact to nearby sensitive receptors and the impact of existing toxic air contaminant (TAC) sources affecting the new residential units were evaluated. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

Stanford University (Stanford) proposes to develop a portion of the "Stanford Wedge" to create 27 single-family residences for Stanford faculty and 12 affordable multifamily housing units to make progress toward Portola Valley's fair share low-income housing needs under the Housing Element of its General Plan. Approximately 4 acres of the 75.4-acer property would be developed as part of the project. The remainder would be preserved as open space. The project is in the part of the "Wedge" that is flattest and closest to existing infrastructure.

Setting

The project is in San Mateo 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 except for ground-level ozone, respirable particulate matter (PM_{10}), 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, reduce 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 (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both

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

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.

Toxic Air Contaminants

TACs are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complicated scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. The most recent California State Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015.[2] See *Attachment 1* for a detailed description of the community risk modeling methodology used in this assessment.

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, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the site are infants and children that may be living in the single-family homes adjacent to the northern property border. Ledera Preschool is approximately 2,467 feet to the north of the project site and represents the next closest sensitive receptor to the construction site, other than the infants and children living in the nearby single-family homes. Once constructed, the faculty housing project would introduce new sensitive receptors (i.e., residents) to the area.

[2] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

Regulatory Agencies

CARB has adopted and implemented several 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.[3] 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.[4] The detailed community risk modeling methodology used in this assessment is contained in *Attachment 1*.

Town of Portola Valley General Plan

Portola Valley's General Plan includes goals, policies, and actions to reduce exposure of the City's population to exposure of air pollution and toxic air contaminants or TACs. The following goals, policies, and actions are applicable to the proposed project:

Applicable Goals and Objectives

Sustainability Goal: *New Buildings* - Encourage, and where feasible, require new buildings to adhere to "green" building design standards.

Objective 1. Require all new buildings to achieve a minimum level of sustainability based on an accepted "green" rating system

Sustainability Goal: *Transportation* – Provide for transportation needs by methods that reduce greenhouse gas emissions.

Objective 3. Reduce motor vehicle trips in the town.

Objective 4. Encourage and enable use of energy efficient low or zero emission vehicles and /or those powered by non-petroleum-based alternative fuels.

[3] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: November 21, 2014.
[4] Bay Area Air Quality Management District. 2017. *BAAQMD CEQA Air Quality Guidelines*. May.

Alpine Scenic Corridor Plan

The *Alpine Scenic Corridor Plan* is a schematic guide for the conservation and development of the Alpine Road corridor, which is adjacent to the project. The plan delineates the scenic corridor, proposes activities appropriate within the scenic corridor, and identifies problems and opportunities. The basic goal of this plan is the conservation and enhancement of the beauty of landscape and the rich variety of plants and wildlife of the scenic corridor to maintain this band of pleasant open country for the enjoyment of all.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under 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 that were used in this analysis are summarized in Table 1.

Table 1. Air Quality Significance 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	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	>10 per one million	>100 per one million	
Hazard Index	>1.0	>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3	>0.8 µg/m^3	
Greenhouse Gas Emissions			
Land Use Projects – direct and indirect emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons annually (for 2020)* OR 4.6 metric tons per capita (for 2020)*		

Note: ROG = reactive organic gases, NOx = 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.

IMPACTS AND MITIGATION MEASURES

Impact: Conflict with or obstruct implementation of the applicable air quality plan?

BAAQMD is the regional agency responsible for overseeing compliance with State and Federal laws, regulations, and programs within the San Francisco Bay Area Air Basin (SFBAAB). BAAQMD, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), has prepared and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.[5] The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHGs.

The 2017 Clean Air Plan, adopted by BAAQMD in April 2017, includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. Plans must show consistency with the control measures listed within the Clean Air Plan. At the project-level, there are no consistency measures or thresholds. The proposed project would not conflict with the latest Clean Air planning efforts since the project would have emissions below the BAAQMD thresholds (see below), and the project would be considered infill.

Impact: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable State or federal ambient air quality standard?

The Bay Area is considered a non-attainment area for ground-level O_3 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 PM_{10} 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 (CO). As part of an effort to attain and maintain ambient air quality standards for O_3, $PM_{2.5}$ and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for O_3 precursor pollutants (ROG and NOx), PM_{10}, 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, construction vehicle trips, and evaporative emissions. The project land use types and size were input to CalEEMod along with the construction schedule and phases proposed by the applicant. The CARB EMission FACtors 2017 (EMFAC2017) model was used to predict emissions from construction traffic, which includes worker travel, vendor

[5] Bay Area Air Quality Management District (BAAQMD), 2017. *Final 2017 Clean Air Plan.*

trucks and haul trucks.[6] The model output from CalEEMod along with construction inputs are included as *Attachment 2* and EMFAC2017 vehicle emissions modeling outputs are included in *Attachment 3*.

Land Use Inputs

The proposed project land uses were input into CalEEMod as follows:

- 27 single family dwelling units and 64,868 square feet (sf) entered as "Residential Single Family Housing" on 4 acres,
- 12 multifamily dwelling units and 7,575 sf of residential space entered as "Residential Condo/Townhouse,"
- 29 parking spaces and 11,600 sf entered as "Parking Lot" that will be dispersed throughout the development, and
- 20,300 sf entered as "Other Asphalt Surfaces" to account for emissions from the new residential streets being constructed.

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, including equipment list and schedule, were based on CalEEMod defaults for a project of this type and size that was modified and approved by the applicant.

Construction equipment types, equipment quantities, average hours of equipment use per day, and work schedule for each phase were provided by the applicant with an assumed construction start date of March 2021. The construction schedule provided was approximately 22 months, or 462 construction workdays. Construction was estimated to be complete by December 2022, with the first full year of operation assumed to be 2023.

Construction Truck Traffic Emissions

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 and haul trips that were estimated for demolition material to be exported, soil material imported and/or exported to the site, and cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition were estimated using CalEEMod defaults for trips per ton of debris anticipated. The estimate for the tons of debris cleared from the site was provided by the applicant as were the number of concrete and asphalt total round haul trips. Concrete/asphalt round trips were converted to total one-way trips by assuming two trips per round trip. 173 cubic yards (CY) of soil is expected to be exported from the site, based on the excavation plans provided.

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

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. The construction traffic information was combined with EMFAC2017 motor vehicle emissions factors. EMFAC2017 provides aggregate emission rates in grams per mile for each vehicle type. The construction traffic vehicle mix for this study 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 LDT1and 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 hauling (demolition material export). Since CalEEMod does not address cement or asphalt trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes and emissions associated with vehicle starts were also included. EMFAC2017 emission rates from calendar year 2021for San Mateo County were used. Table 2 provides the traffic inputs that were combined with the EMFAC2017 emission factors 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	
Vehicle mix[1]	63.6% LDA 8.6% LDT1 27.8% LDT2	76.6% MHDT 24.3% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0 (Demo/Export) 7.3 (Cement/Asphalt)	5 Minute Truck Idle Time
Demolition	39	-	37	371 ton of debris. CalEEMod default worker trips
Site Preparation	144	-	22	173 CY of Soil Export. CalEEMod default worker trips
Grading	50	-	-	CalEEMod default worker trips
Trenching	100	-	-	CalEEMod default worker trips
Building Construction	960	270	624	312 Cement Truck Deliveries. CalEEMod default worker and vendor trips
Architectural Coating	1,836	-	-	CalEEMod default worker trips
Paving	2,340	-	176	88 CY Asphalt. CalEEMod default worker trips

Notes:
[1] Based on 2021 EMFAC2017 vehicle fleet mix for San Mateo County.

Summary of Computed Construction Period Emissions

Annual emissions were predicted using CalEEMod and EMFAC2017. Average daily emissions were computed by dividing the total construction emissions by the number of construction days (462 construction workdays). Table 3 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust estimated 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 - Unmitigated

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total construction emissions (tons)	0.8 tons	1.9 tons	0.11 tons	0.10 tons
Average daily emissions (pounds)[1]	3.3 lbs./day	8.4 lbs./day	0.5 lbs./day	0.4 lbs./day
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Notes: [1]Assumes 462 workdays.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} 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: Implement BAAQMD-Recommended Measures to Control Particulate Matter Emissions 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 possible. Building pads shall be laid as soon as possible 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 above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by future residents. 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.

Land Uses

The project land uses were input to CalEEMod as described above for the construction period modeling.

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. The earliest full year of operation would be 2023 if construction begins in March of 2021. Emissions associated with build-out later than 2023 would be lower than those estimated for 2023.

Trip Generation Rates

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rate for Single-Family Homes (Institute of Transportation Engineers Land Use Code 210) and Multifamily Condos/Townhomes (Code 220) were provided by the traffic consultant.[7] 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 to the default weekday rate. 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 model for on-road and off-road mobile sources. Since the release of CalEEMod Version 2016.3.2, a new emission model has 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.[8,9] 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 and GHG emissions (i.e., CO_2) 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. On-road emission rates for San Mateo County, calendar year 2023 were used. More details about the updates in emissions calculation methodologies and data are available in the EMFAC2017 Technical Support documents.[10]

Energy

CalEEMod defaults for energy use were used, which include the 2016 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. The electricity produced emission rate was modified in CalEEMod. CalEEMod has a default emission factor of 641.3 pounds of CO_2 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

[7] Hexagon Transportation Consultants, Inc., *Preliminary Trip Generation and Trip Distribution for Discussion Prior to Use in Traffic Modeling*, July 27, 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] California Air Resource Board, 2020. *EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO_20 Emissions to Accounts for the SAFE Vehicles Rule Part One and the Final SAFE Rule*. June. Web: https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf?utm_medium=email&utm_source=govdelivery

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

to 210 pounds CO_2 per megawatt of electricity delivered in the year 2017.[11] This intensity factor was used in the model and it was assumed that all powered 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 fueled per BAAQMD Regulation 6, Rule 3, which prohibits new building construction from installing wood-burning devices (effective as of November 1, 2016).[12]

Existing Uses

A vast majority of the 4 acres involved in the project is currently undeveloped land except for a portion of the site occupied by the Alpine Rock Ranch, a horse boarding facility with stables. Therefore, no existing land use model was developed since operational period emissions would be low for the current land use. For analysis purposes, existing emissions were assumed to be zero (0).

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 PM_{10}, and total $PM_{2.5}$ during operation of the project. The operational period emissions would not exceed the BAAQMD significance thresholds.

Table 4. Operational Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2023 Project Operational Emissions (*tons/year*)	0.48 tons	0.22 tons	0.30 tons	0.09 tons
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	No	No	No	No
2023 Project Operational Emissions (*lbs./day*)[1]	2.7 lbs.	1.2 lbs.	1.6 lbs.	0.5 lbs.
BAAQMD Thresholds (lbs./day)	*54 lbs.*	*54 lbs.*	*82 lbs.*	*54 lbs.*
Exceed Threshold?	No	No	No	No

Notes: [1] Assumes 365-day operation.

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

[12] Bay Area Air Quality Management District, 2015: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-6-rule-3-woodburning-devices/documents/rg0603.pdf?la=en

Impact: Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased community risk can occur either by introducing a new source of TACs during construction and operation with the potential to adversely affect existing sensitive receptors in the project vicinity or by introducing a new sensitive receptor, such as residents, in proximity to an existing source of TACs.

Project construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors. A construction community health risk assessment was prepared to address project construction impacts on the surrounding off-site sensitive receptors. Operation of the project is not expected to be a source of TAC or localized air pollutant emissions, as the project would not generate substantial truck traffic or include stationary sources of emissions, such as generators powered by diesel engines. Emissions from automobile traffic generated by the project would be spread out over a broad geographical area and not localized.

The project would introduce residents that are sensitive receptors. Alpine Road is adjacent to the project and could be a source of TACs for the new residents. However, there are no existing stationary sources of TACs in the vicinity of the project that need to be assessed.

Community risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations, and computing the Hazard Index (HI) for non-cancer health risks. This involved the modeling of TAC and $PM_{2.5}$ emissions, dispersion modeling and cancer risk computations. The methodology for computing community risks impacts is contained in *Attachment 1*.

Project Construction Activity

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. Although it was concluded in the previous sections (see Table 3) that construction exhaust air pollutant emissions would not contribute substantially to existing or projected air quality violations, construction exhaust emissions may still pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issue associated with construction emissions are cancer risk from exposure to DPM and exposure to $PM_{2.5}$. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[13]

Construction Period Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and EMFAC2017 was used to estimate exhaust emissions from on-road vehicles. Total DPM emissions from the construction site was estimated to be 0.104 tons (209 pounds). The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. It was assumed emissions from on-road vehicles traveling at or near the site would occur at the construction site.

[13] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

Fugitive $PM_{2.5}$ dust emissions were estimated to be 0.043 tons (85.1 pounds) using the same methods and assumptions used to estimate site DPM emissions.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (i.e., residents, school children, elderly) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling ambient impacts of these types of emission activities for CEQA projects.[14] The modeling utilized two area sources to represent the on-site construction emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 19.7 feet (6 meters) was used. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 6.6 feet (2 meters) was used. Emissions from the construction equipment and on-site vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 7:00 a.m. to 4:00 p.m. when most of the construction activity would occur.

The modeling used a five-year data set (2013-2017) of hourly meteorological data from Moffett Field that was prepared for use with the AERMOD model by BAAQMD. Annual DPM and $PM_{2.5}$ concentrations from construction activities during two construction periods (2021-2022 and 2022-2023) were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters) were used to represent the breathing height at the nearby single-family residences. There are no multi-family residences located near the project site.

Project Construction Community Risk Impacts

The maximum modeled annual DPM and $PM_{2.5}$ concentrations, which includes both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEIs). Using the maximum annual modeled DPM concentrations, the maximum increased cancer risks were calculated using BAAQMD recommended methods and exposure parameters described in *Attachment 1*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Results of this assessment indicated that the construction MEI was located at a single-family residence approximately 230 feet northwest of the project site (see Figure 1). The unmitigated maximum increased cancer risks, maximum $PM_{2.5}$ concentration, and non-cancer hazards during construction did not exceed their respective BAAQMD single-source thresholds of greater than 10.0 per million for cancer risk, greater than 0.3 $\mu g/m^3$, and below 1.0, respectively. Table 5

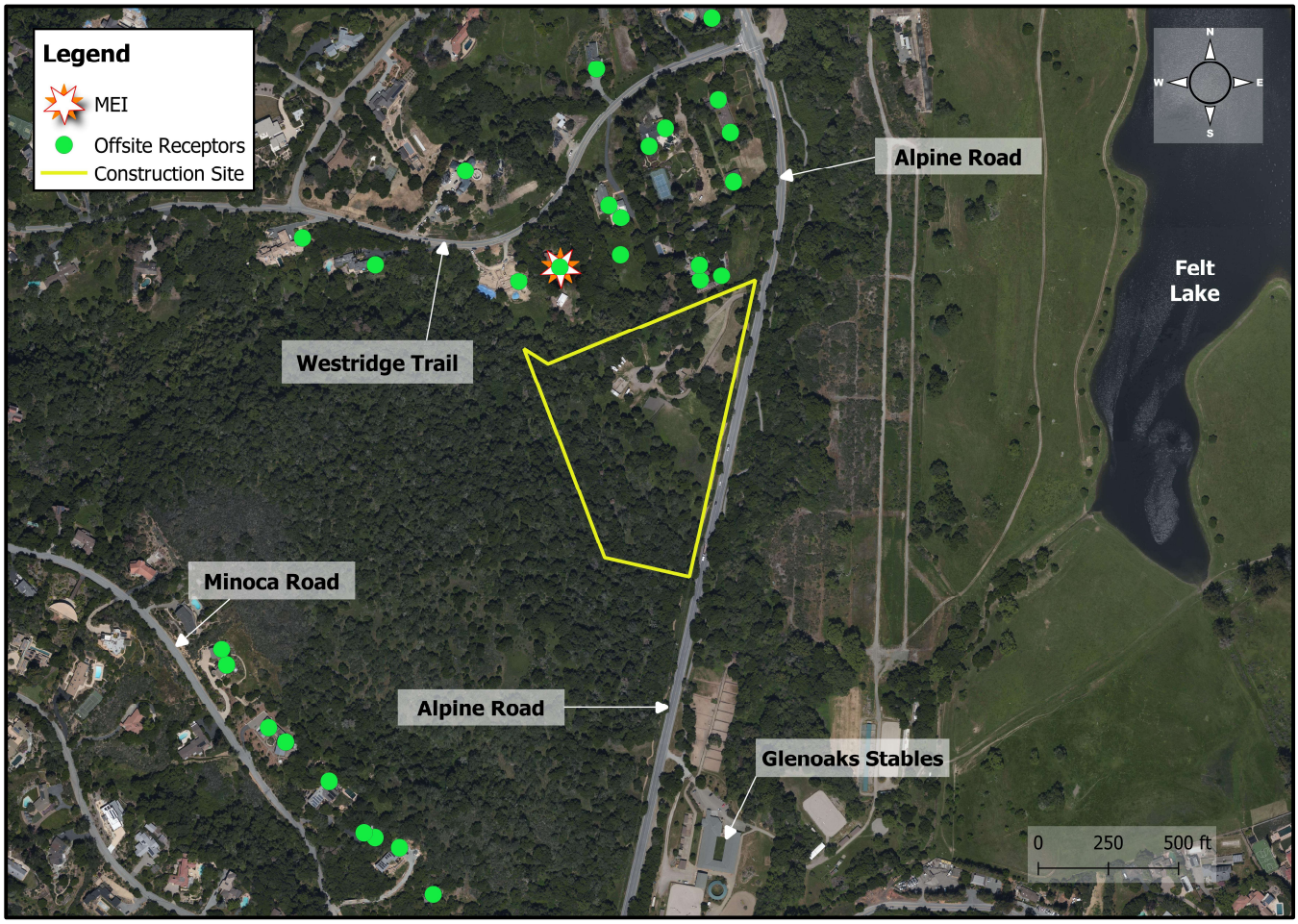
[14] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the off-site residential MEI.

Table 5. Construction Risk Impacts at the Off-site Residential MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	4.7 (infant)	0.03	<0.01
	BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

Figure 1. Project Construction Site, Locations of Off-Site Sensitive Receptors, and Locations of TAC Impacts



Combined Impact of All TAC Sources on the Off-Site Construction MEI

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of the project site (i.e. influence area). These sources include railroads, freeways or highways, busy surface streets, and stationary sources identified by BAAQMD. A review of the project area indicates that traffic on Alpine Road does not exceed the average daily traffic (ADT) threshold of 10,000 vehicles. Likewise, the other roadways within the area are below the 10,000 ADT threshold. Additionally, there are no stationary sources of TACs located within the 1,000-foot influence area according to BAAQMD's *Permitted Stationary Sources 2018* GIS website,[15] which provides the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. Therefore, a community risk impacts analysis is not warranted.

Non-CEQA Impact: Exposure of Project Residents to Existing TACs Sources

Operational Community Health Risk Impacts – New Residents

In addition to evaluating health impact from project construction, a health risk assessment for nearby sources of TACs is conducted for the new dwelling units to assess the impact they may have on the new proposed sensitive receptors (residents) that the project would introduce. However, because there are no roadways near the project with an ADT of 10,000 or greater and because there are no stationary sources of TACs withing 1,000 feet of the project, an operational community risk assessment is not warranted.

Impact: Create objectionable odors affecting a substantial number of people?

The project would generate localized emissions of diesel exhaust during construction equipment operation and truck activity. These emissions may be noticeable from time to time by adjacent receptors. However, they would be localized and are not likely to adversely affect people off-site by resulting in confirmed odor complaints. The project would not include any sources of significant odors that would cause complaints from surrounding uses.

[15] BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

GREENHOUSE GAS EMISSIONS

Setting

Gases that trap heat in the atmosphere, GHGs, 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 (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2, CH_4, and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 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 CO_2 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 CO_2 equivalents (CO_2e).

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 for GHG Emissions

Executive Order S-3-05 – California GHG Reduction Targets

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

Assembly Bill 32 – California Global Warming Solutions Act (2006)

Assembly Bill (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, which has a target of reducing GHG emissions 80 percent below 1990 levels.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It 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.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons (MMT) of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, due to the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

Executive Order B-30-15 & Senate Bill 32 GHG Reduction Targets – 2030 GHG Reduction Target

In April 2015, Governor Brown signed EO B-30-15, 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 Senate Bill (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*.[16] 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.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB is currently working on a second update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The proposed Scoping Plan Update was published on January 20, 2017 as directed by SB 32 companion legislation AB 197. The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive

[16] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

Order S-3-05. The Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and obtain the statewide goals.

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 hydrofluorocarbons 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.

Executive Order B-55-18 – Carbon Neutrality

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant state agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal.

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.

Senate Bill 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.

Senate Bill 100 – Current Renewable Portfolio Standards

In September 2018, SB 100 was signed by Governor Brown to revise California's RPS program goals, furthering California's focus on using renewable energy and carbon-free power sources for its energy needs. The bill would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retails sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2017 the target would be 52 percent, and by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

California Building Standards Code – Title 24 Part 11 & Part 6

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[17] The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2019 California Building Standard Code) was effective as of January 1, 2020.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2019 Energy Code) replaced the 2016 Energy Code as of January 1,2020. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic

[17] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.

systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.[18]

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2018, total gross nationwide GHG emissions were 6,676.6 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[19] These emissions were lower than peak levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2017 emissions.[20] 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 computed for the year 2011.[21] The Bay Area GHG emission were 87 MMT. As a point of comparison, statewide emissions were about 444 MMT in 2011.

Town of Portola Valley

The Town of Portola Valley developed a Sustainability Element to their General Plan in January 2009. The element is intended to help the community achieve its goal of ensuring sustainability by the reduction of GHG emissions, green building for new and existing structures, protection of water resources, protection of the natural environment, and community education and involvement. An overarching goal of reducing carbon emissions to 1990 levels by the year 2020 and to 80% below 1990 levels by the year 2050 was established with the adoption of the General Plan's Sustainability Element.[22]

The California Energy Commission (CEC) updates the California Building Energy Efficiency Standards every three years, in alignment with the California Code of regulations. Title 24 Parts 6 and 11 of the California Building Energy Efficiency Standards and the California Green Building Standards Code (CALGreen) address the need for regulations to improve energy efficiency and combat climate change. The 2019 CALGreen standards include substantial changes intended to increase the energy efficiency of buildings. For example, the code encourages the installation of solar and heat pump water heaters in low-rise residential buildings. The 2019 California Code went before Town Council in December 2019 for approval, with an effective date of January 1, 2020.

[18] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf
[19] United States Environmental Protection Agency, 2020. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018*. April. Web: https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf
[20] CARB. 2019. *2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017*. Web: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf
[21] BAAQMD. 2015. *Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011*. January. Web: http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf accessed Nov. 26, 2019.
[22] Town of Portola Valley. 2009. *Town of Portola Valley General Plan – Sustainability Plan*. Web: https://www.portolavalley.net/home/showdocument?id=1982

Additionally, the Town requires new development to complete a *Build It Green* checklist as part of its Green Building Ordinance. *Build It Green* is a nonprofit organization focused on reducing carbon emissions by connecting more homes to clean power and advanced energy technologies.[23] Their checklists are used to estimate a *GreenPoint* Rating score, which the Town uses to assess if a new development project meets the requirements of the Town's Green Building Ordinance. The applicant has completed the checklist and identified 173 points. A minimum of 75 point are required per the Town's Green Building Ordinance.

BAAQMD Significance Thresholds

For quantified emissions, the BAAQMD's CEQA Air Quality 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. Although BAAQMD has not published a quantified threshold for 2030 yet, this assessment uses a "Substantial Progress" efficiency metric of 2.8 MT CO_2e/year/service population and a bright-line threshold of 660 MT CO_2e/year based on the GHG reduction goals of EO B-30-15. The service population metric of 2.8 is calculated for 2030 based on the 1990 inventory and the projected 2030 statewide population and employment levels.[24] The 2030 bright-line threshold is a 40 percent reduction of the 2020 1,100 MT CO_2e/year threshold.

Impact: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

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 for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

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 previously described. CalEEMod output is included in *Attachment 2*.

Service Population Emissions

The project service population efficiency rate is based on the number of future residents. According to Town of Portola Valley demographic data, there are an average of 2.58 persons per

[23] Build It Green Website. Accessed August 28, 2020.
[24] Association of Environmental Professionals, 2016. *Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*. April.

household.[25] Given the 39 dwelling units being proposed for the project (27 single family units and 12 multifamily units), it is estimated the total residents living at the development will be approximately 101.

Construction Emissions

GHG emissions associated with construction were computed to be 462 MT of CO_2e for the construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the Town 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 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 6, the net annual emissions resulting from operation of the proposed project are predicted to be 364 MT of CO_{2e} in 2030 (392 MT of CO_2e in 2023). The service population emissions are predicted to be 3.6 MT/CO_{2e}/year/service population (3.5 MT of CO_2e in 2023).

To be considered an exceedance, the project must exceed both the GHG significance threshold in metric tons per year and the service population significance threshold. As shown in Table 6, the project would not exceed the 660 MT CO_2e/year bright-line threshold in 2030 but would exceed the per capita threshold of 2.8 MT of CO_2e/year/service population in 2030. Therefore, the project is not considered to generate enough GHG emissions to be considered significant either directly or indirectly.

Table 6. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	**Proposed Project**
	2030
Area	3
Energy Consumption	103
Mobile	236
Solid Waste Generation	19
Water Usage	3
Total (MT CO_2e/yr)	364
Bright-Line Significance Threshold	***660 MT CO_2e/year***
Service Population Emissions (MT CO2e/year/service population)	**3.6**
Per Capita Significance Threshold	***2.8 MT of CO2e/year/service population in 2030***
Exceed both thresholds?	*No*

[25] State of California, Department of Finance. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2010-2019.*

Impact: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan. For example, proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures and water-efficient irrigation systems. The project would also be subject to local policies that may affect emissions of greenhouse gases.

Supporting Documentation

Attachment 1 is the methodology used to compute community risk impacts, including the methods to compute lifetime cancer risk from exposure to project emissions.

Attachment 2 includes the CalEEMod modeling assumptions and output for project construction and operational criteria air pollutant and GHG emissions. The operational outputs for existing and 2030 uses are also included in this attachment.

Attachment 3 includes the EMFAC2017 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

Attachment 4 is the construction health risk assessment. AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[26] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[27] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[28] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs is calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults,

[26] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[27] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[28] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR^* \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.

The health risk parameters used in this evaluation are summarized as follows:

Parameter	*Exposure Type* →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Modeling Output

Stanford Wedge Housing Project - San Mateo County, Annual

Stanford Wedge Housing Project - Construction and Ops

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	29.00	Space	0.00	11,600.00	0
Condo/Townhouse	12.00	Dwelling Unit	0.00	7,575.00	34
Single Family Housing	27.00	Dwelling Unit	4.00	64,868.00	77
Other Asphalt Surfaces	20.30	1000sqft	0.00	20,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Rate

Land Use - Based on Construction Data Sheet 8-6-20

Construction Phase - Per Construction Data Sheet 8-4-20

Off-road Equipment - Per Construction Data Sheet

Off-road Equipment - Per Construction Data Sheet

Off-road Equipment - Per Construction Data sheet

Off-road Equipment - Per Construction Data Sheet

Off-road Equipment - Per Construction data Sheet

Off-road Equipment - Per Construction Data Sheet

Off-road Equipment - Per Construction Data Sheet

Grading - Per Cover Sheet of Plan Set 7-14-20

Demolition - Per Construction Data Sheet

Trips and VMT - 312 Cement Truck RT, 86 TR for asphalt per construction data sheet

Architectural Coating - There are parking spaces, but not a parking lot, so the default sqft should be appropriate

Vehicle Trips - Per ITE Trip Generation Rates (10th Edition) ITE LU 210 average rate and ITE LU 220 Average rate. Adjusted based on CalEEMod Defaults for Sat and Sun

Vehicle Emission Factors - EMFAC2017 EFs for San Mateo Co. 2023

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Assume no wood burning hearths

Energy Use -

Water And Wastewater - Assume 100% WWTP

Construction Off-road Equipment Mitigation - Assume a T3L3 Mitigation and basic BAAQMD fugitive dust BMPs

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	18.00	180.00
tblConstructionPhase	NumDays	230.00	306.00
tblConstructionPhase	NumDays	20.00	13.00

tblConstructionPhase	NumDays	8.00	20.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	1.80	3.84
tblFireplaces	NumberGas	6.75	18.36
tblFireplaces	NumberWood	2.04	0.00
tblFireplaces	NumberWood	11.61	0.00
tblFleetMix	HHD	6.5950e-003	6.1440e-003
tblFleetMix	HHD	6.5950e-003	6.1440e-003
tblFleetMix	HHD	6.5950e-003	6.1440e-003
tblFleetMix	HHD	6.5950e-003	6.1440e-003
tblFleetMix	LDA	0.47	0.48
tblFleetMix	LDA	0.47	0.48
tblFleetMix	LDA	0.47	0.48
tblFleetMix	LDA	0.47	0.48
tblFleetMix	LDT1	0.05	0.07
tblFleetMix	LDT1	0.05	0.07
tblFleetMix	LDT1	0.05	0.07
tblFleetMix	LDT1	0.05	0.07
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tblFleetMix	LDT2	0.27	0.23
tblFleetMix	LDT2	0.27	0.23
tblFleetMix	LDT2	0.27	0.23
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tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD2	6.9960e-003	6.8790e-003

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tblFleetMix	LHD2	6.9960e-003	6.8790e-003
tblFleetMix	LHD2	6.9960e-003	6.8790e-003
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tblFleetMix	MCY	9.1590e-003	0.01
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tblFleetMix	MDV	0.14	0.14
tblFleetMix	MDV	0.14	0.14
tblFleetMix	MDV	0.14	0.14
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tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
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tblFleetMix	OBUS	4.2150e-003	3.2575e-003
tblFleetMix	OBUS	4.2150e-003	3.2575e-003
tblFleetMix	OBUS	4.2150e-003	3.2575e-003
tblFleetMix	SBUS	4.8800e-004	5.3895e-004
tblFleetMix	SBUS	4.8800e-004	5.3895e-004
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tblFleetMix	SBUS	4.8800e-004	5.3895e-004
tblFleetMix	UBUS	3.1040e-003	1.4932e-003

tblFleetMix	UBUS	3.1040e-003	1.4932e-003
tblFleetMix	UBUS	3.1040e-003	1.4932e-003
tblFleetMix	UBUS	3.1040e-003	1.4932e-003
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tblGrading	MaterialExported	0.00	173.00
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tblLandUse	LandUseSquareFeet	48,600.00	64,868.00
tblLandUse	LotAcreage	0.26	0.00
tblLandUse	LotAcreage	0.75	0.00
tblLandUse	LotAcreage	8.77	4.00
tblLandUse	LotAcreage	0.47	0.00
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tblOffRoadEquipment	UsageHours	6.00	0.00

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tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
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tblTripsAndVMT	HaulingTripLength	20.00	7.30
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tblTripsAndVMT	HaulingTripNumber	22.00	0.00
tblTripsAndVMT	VendorTripNumber	9.00	0.00
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tblVehicleEF	LDA	0.01	9.9430e-003

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tblVehicleEF	LDA	0.07	0.23
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tblVehicleEF	LDT1	0.09	0.20
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tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.11	0.41
tblVehicleEF	LDT1	0.11	0.27

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tblVehicleEF	LDT2	4.9310e-003	0.06
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tblVehicleEF	LHD1	0.08	0.05
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.0410e-003	7.5700e-004
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tblVehicleEF	LHD1	0.26	0.38
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tblVehicleEF	LHD2	0.01	0.01
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tblVehicleEF	LHD2	3.6500e-004	1.2000e-004
tblVehicleEF	LHD2	5.0200e-004	6.8000e-004

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tblVehicleEF	LHD2	0.06	0.22
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tblVehicleEF	LHD2	0.02	0.02
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tblVehicleEF	LHD2	0.11	0.11
tblVehicleEF	LHD2	0.06	0.22
tblVehicleEF	LHD2	0.08	0.04
tblVehicleEF	MCY	0.46	0.33
tblVehicleEF	MCY	0.16	0.26
tblVehicleEF	MCY	18.45	18.72
tblVehicleEF	MCY	10.39	9.21
tblVehicleEF	MCY	172.84	212.96
tblVehicleEF	MCY	43.50	60.41
tblVehicleEF	MCY	1.15	1.15
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.0930e-003	2.1160e-003
tblVehicleEF	MCY	3.7000e-003	3.2150e-003
tblVehicleEF	MCY	1.9540e-003	1.9760e-003
tblVehicleEF	MCY	3.4740e-003	3.0180e-003

tblVehicleEF	MCY	0.60	1.23
tblVehicleEF	MCY	0.52	0.54
tblVehicleEF	MCY	0.35	0.74
tblVehicleEF	MCY	2.17	2.19
tblVehicleEF	MCY	0.45	1.88
tblVehicleEF	MCY	2.18	1.95
tblVehicleEF	MCY	2.0950e-003	2.1070e-003
tblVehicleEF	MCY	6.6900e-004	5.9800e-004
tblVehicleEF	MCY	0.60	1.23
tblVehicleEF	MCY	0.52	0.54
tblVehicleEF	MCY	0.35	0.74
tblVehicleEF	MCY	2.72	2.73
tblVehicleEF	MCY	0.45	1.88
tblVehicleEF	MCY	2.38	2.12
tblVehicleEF	MDV	6.1010e-003	2.5170e-003
tblVehicleEF	MDV	0.01	0.06
tblVehicleEF	MDV	0.73	0.63
tblVehicleEF	MDV	1.94	2.89
tblVehicleEF	MDV	421.91	359.84
tblVehicleEF	MDV	96.67	76.49
tblVehicleEF	MDV	0.08	0.05
tblVehicleEF	MDV	0.16	0.26
tblVehicleEF	MDV	1.7360e-003	1.4660e-003
tblVehicleEF	MDV	2.4070e-003	1.8650e-003
tblVehicleEF	MDV	1.6000e-003	1.3520e-003
tblVehicleEF	MDV	2.2130e-003	1.7150e-003
tblVehicleEF	MDV	0.04	0.04
tblVehicleEF	MDV	0.11	0.09

tblVehicleEF	MDV	0.04	0.04
tblVehicleEF	MDV	0.02	0.01
tblVehicleEF	MDV	0.09	0.31
tblVehicleEF	MDV	0.14	0.30
tblVehicleEF	MDV	4.2190e-003	3.5120e-003
tblVehicleEF	MDV	1.0000e-003	7.4800e-004
tblVehicleEF	MDV	0.04	0.04
tblVehicleEF	MDV	0.11	0.09
tblVehicleEF	MDV	0.04	0.04
tblVehicleEF	MDV	0.02	0.01
tblVehicleEF	MDV	0.09	0.31
tblVehicleEF	MDV	0.15	0.33
tblVehicleEF	MH	0.01	6.8080e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.97	0.59
tblVehicleEF	MH	4.38	1.93
tblVehicleEF	MH	1,191.71	1,479.74
tblVehicleEF	MH	57.04	17.54
tblVehicleEF	MH	0.89	0.98
tblVehicleEF	MH	0.64	0.24
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	9.6600e-004	2.5800e-004
tblVehicleEF	MH	3.2240e-003	3.2750e-003
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	8.8900e-004	2.3700e-004
tblVehicleEF	MH	0.35	0.32
tblVehicleEF	MH	0.03	0.03

tblVehicleEF	MH	0.15	0.14
tblVehicleEF	MH	0.05	0.04
tblVehicleEF	MH	0.01	0.77
tblVehicleEF	MH	0.25	0.09
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.4600e-004	1.7400e-004
tblVehicleEF	MH	0.35	0.32
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	0.15	0.14
tblVehicleEF	MH	0.07	0.06
tblVehicleEF	MH	0.01	0.77
tblVehicleEF	MH	0.27	0.09
tblVehicleEF	MHD	0.02	3.9700e-003
tblVehicleEF	MHD	3.9320e-003	1.8740e-003
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.37	0.39
tblVehicleEF	MHD	0.32	0.25
tblVehicleEF	MHD	5.43	1.20
tblVehicleEF	MHD	134.00	65.21
tblVehicleEF	MHD	1,183.49	1,084.56
tblVehicleEF	MHD	60.23	10.30
tblVehicleEF	MHD	0.36	0.37
tblVehicleEF	MHD	1.03	1.29
tblVehicleEF	MHD	10.26	1.64
tblVehicleEF	MHD	9.7000e-005	3.2800e-004
tblVehicleEF	MHD	2.9220e-003	6.0860e-003
tblVehicleEF	MHD	8.8000e-004	1.2600e-004
tblVehicleEF	MHD	9.3000e-005	3.1400e-004

tblVehicleEF	MHD	2.7900e-003	5.8150e-003
tblVehicleEF	MHD	8.0900e-004	1.1500e-004
tblVehicleEF	MHD	5.9400e-004	3.1700e-004
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	3.8000e-004	2.0100e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.11
tblVehicleEF	MHD	0.32	0.05
tblVehicleEF	MHD	1.2910e-003	6.1900e-004
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	6.9700e-004	1.0200e-004
tblVehicleEF	MHD	5.9400e-004	3.1700e-004
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	0.04	0.03
tblVehicleEF	MHD	3.8000e-004	2.0100e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.11
tblVehicleEF	MHD	0.35	0.06
tblVehicleEF	OBUS	0.01	6.6440e-003
tblVehicleEF	OBUS	5.3730e-003	3.0880e-003
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.25	0.61
tblVehicleEF	OBUS	0.38	0.38
tblVehicleEF	OBUS	4.63	1.56
tblVehicleEF	OBUS	120.06	102.06
tblVehicleEF	OBUS	1,294.27	1,321.95
tblVehicleEF	OBUS	64.70	13.37

tblVehicleEF	OBUS	0.27	0.42
tblVehicleEF	OBUS	0.91	1.45
tblVehicleEF	OBUS	3.11	1.21
tblVehicleEF	OBUS	2.4000e-005	1.3700e-004
tblVehicleEF	OBUS	2.7730e-003	7.1910e-003
tblVehicleEF	OBUS	8.6200e-004	1.4200e-004
tblVehicleEF	OBUS	2.3000e-005	1.3100e-004
tblVehicleEF	OBUS	2.6340e-003	6.8680e-003
tblVehicleEF	OBUS	7.9200e-004	1.3100e-004
tblVehicleEF	OBUS	7.9000e-004	7.9900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	4.1600e-004	4.0800e-004
tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.02	0.14
tblVehicleEF	OBUS	0.28	0.07
tblVehicleEF	OBUS	1.1570e-003	9.6900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.2800e-004	1.3200e-004
tblVehicleEF	OBUS	7.9000e-004	7.9900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	4.1600e-004	4.0800e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.02	0.14
tblVehicleEF	OBUS	0.31	0.08
tblVehicleEF	SBUS	0.85	0.09
tblVehicleEF	SBUS	0.02	0.01

tblVehicleEF	SBUS	0.06	8.8030e-003
tblVehicleEF	SBUS	12.70	3.32
tblVehicleEF	SBUS	0.92	0.91
tblVehicleEF	SBUS	12.57	1.37
tblVehicleEF	SBUS	863.34	363.12
tblVehicleEF	SBUS	867.56	1,010.61
tblVehicleEF	SBUS	86.67	6.88
tblVehicleEF	SBUS	4.52	3.40
tblVehicleEF	SBUS	2.16	4.86
tblVehicleEF	SBUS	6.82	0.66
tblVehicleEF	SBUS	4.2180e-003	4.2000e-003
tblVehicleEF	SBUS	9.3910e-003	0.01
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	1.6480e-003	1.0600e-004
tblVehicleEF	SBUS	4.0350e-003	4.0180e-003
tblVehicleEF	SBUS	2.3480e-003	2.5730e-003
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	1.5150e-003	9.7000e-005
tblVehicleEF	SBUS	2.7140e-003	5.5800e-004
tblVehicleEF	SBUS	0.03	7.1600e-003
tblVehicleEF	SBUS	1.53	0.40
tblVehicleEF	SBUS	1.4040e-003	2.6400e-004
tblVehicleEF	SBUS	0.08	0.10
tblVehicleEF	SBUS	0.02	0.05
tblVehicleEF	SBUS	0.61	0.05
tblVehicleEF	SBUS	8.6860e-003	3.4700e-003
tblVehicleEF	SBUS	8.4760e-003	9.7050e-003
tblVehicleEF	SBUS	1.0830e-003	6.8000e-005

tblVehicleEF	SBUS	2.7140e-003	5.5800e-004
tblVehicleEF	SBUS	0.03	7.1600e-003
tblVehicleEF	SBUS	2.22	0.57
tblVehicleEF	SBUS	1.4040e-003	2.6400e-004
tblVehicleEF	SBUS	0.10	0.13
tblVehicleEF	SBUS	0.02	0.05
tblVehicleEF	SBUS	0.67	0.06
tblVehicleEF	UBUS	0.27	0.84
tblVehicleEF	UBUS	0.04	0.01
tblVehicleEF	UBUS	3.92	5.27
tblVehicleEF	UBUS	6.89	0.82
tblVehicleEF	UBUS	2,057.40	1,802.91
tblVehicleEF	UBUS	95.96	9.26
tblVehicleEF	UBUS	6.98	3.45
tblVehicleEF	UBUS	15.02	0.10
tblVehicleEF	UBUS	0.61	0.08
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.13	7.7540e-003
tblVehicleEF	UBUS	1.0290e-003	5.0000e-005
tblVehicleEF	UBUS	0.26	0.03
tblVehicleEF	UBUS	3.0000e-003	7.8010e-003
tblVehicleEF	UBUS	0.13	7.4170e-003
tblVehicleEF	UBUS	9.4600e-004	4.6000e-005
tblVehicleEF	UBUS	1.4610e-003	4.7000e-004
tblVehicleEF	UBUS	0.03	8.2320e-003
tblVehicleEF	UBUS	8.9700e-004	3.6000e-004
tblVehicleEF	UBUS	0.38	0.01
tblVehicleEF	UBUS	7.7290e-003	0.05

tblVehicleEF	UBUS	0.52	0.06
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	1.0830e-003	9.2000e-005
tblVehicleEF	UBUS	1.4610e-003	4.7000e-004
tblVehicleEF	UBUS	0.03	8.2320e-003
tblVehicleEF	UBUS	8.9700e-004	3.6000e-004
tblVehicleEF	UBUS	0.69	0.86
tblVehicleEF	UBUS	7.7290e-003	0.05
tblVehicleEF	UBUS	0.57	0.06
tblVehicleTrips	ST_TR	5.67	7.14
tblVehicleTrips	ST_TR	9.91	9.83
tblVehicleTrips	SU_TR	4.84	6.10
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	5.81	7.32
tblVehicleTrips	WD_TR	9.52	9.44
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
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	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

tblWoodstoves	WoodstoveWoodMass	956.80	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	0.1418	1.1468	1.1280	1.6600e-003	0.0814	0.0650	0.1464	0.0422	0.0608	0.1030	0.0000	139.9293	139.9293	0.0389	0.0000	140.9016
2022	0.6138	0.7281	0.9115	1.3500e-003	0.0000	0.0388	0.0388	0.0000	0.0371	0.0371	0.0000	112.8614	112.8614	0.0236	0.0000	113.4504
Maximum	**0.6138**	**1.1468**	**1.1280**	**1.6600e-003**	**0.0814**	**0.0650**	**0.1464**	**0.0422**	**0.0608**	**0.1030**	**0.0000**	**139.9293**	**139.9293**	**0.0389**	**0.0000**	**140.9016**

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	0.0484	0.9506	1.1447	1.6600e-003	0.0366	8.9400e-003	0.0456	0.0190	8.9400e-003	0.0279	0.0000	139.9291	139.9291	0.0389	0.0000	140.9014
2022	0.5537	0.7518	0.9123	1.3500e-003	0.0000	7.5800e-003	7.5800e-003	0.0000	7.5800e-003	7.5800e-003	0.0000	112.8612	112.8612	0.0236	0.0000	113.4503
Maximum	**0.5537**	**0.9506**	**1.1447**	**1.6600e-003**	**0.0366**	**8.9400e-003**	**0.0456**	**0.0190**	**8.9400e-003**	**0.0279**	**0.0000**	**139.9291**	**139.9291**	**0.0389**	**0.0000**	**140.9014**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**20.30**	**9.20**	**-0.86**	**0.00**	**55.00**	**84.08**	**71.29**	**55.01**	**83.13**	**74.66**	**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	**3-1-2021**	**5-31-2021**	0.5465	0.3749
2	**6-1-2021**	**8-31-2021**	0.3165	0.2660
3	**9-1-2021**	**11-30-2021**	0.3130	0.2631
4	**12-1-2021**	**2-28-2022**	0.2926	0.2602
5	**3-1-2022**	**5-31-2022**	0.4840	0.4629
6	**6-1-2022**	**8-31-2022**	0.3860	0.3813
7	**9-1-2022**	**9-30-2022**	0.0909	0.0923
		Highest	0.5465	0.4629

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	0.3457	5.7400e-003	0.2911	3.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	3.2453	3.2453	5.1000e-004	5.0000e-005	3.2732
Energy	7.6300e-003	0.0652	0.0278	4.2000e-004		5.2700e-003	5.2700e-003		5.2700e-003	5.2700e-003	0.0000	102.1623	102.1623	5.1300e-003	2.1500e-003	102.9298
Mobile	0.1310	0.1509	1.0371	3.2600e-003	0.2883	1.9000e-003	0.2902	0.0773	1.7700e-003	0.0790	0.0000	263.2140	263.2140	0.0133	0.0000	263.5475
Waste						0.0000	0.0000		0.0000	0.0000	7.6852	0.0000	7.6852	0.4542	0.0000	19.0399
Water						0.0000	0.0000		0.0000	0.0000	0.8990	1.8438	2.7428	3.3500e-003	2.0100e-003	3.4248
Total	**0.4843**	**0.2219**	**1.3560**	**3.7100e-003**	**0.2883**	**8.9700e-003**	**0.2973**	**0.0773**	**8.8400e-003**	**0.0861**	**8.5843**	**370.4653**	**379.0496**	**0.4765**	**4.2100e-003**	**392.2152**

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	0.3457	5.7400e-003	0.2911	3.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	3.2453	3.2453	5.1000e-004	5.0000e-005	3.2732
Energy	7.6300e-003	0.0652	0.0278	4.2000e-004		5.2700e-003	5.2700e-003		5.2700e-003	5.2700e-003	0.0000	102.1623	102.1623	5.1300e-003	2.1500e-003	102.9298
Mobile	0.1310	0.1509	1.0371	3.2600e-003	0.2883	1.9000e-003	0.2902	0.0773	1.7700e-003	0.0790	0.0000	263.2140	263.2140	0.0133	0.0000	263.5475
Waste						0.0000	0.0000		0.0000	0.0000	7.6852	0.0000	7.6852	0.4542	0.0000	19.0399
Water						0.0000	0.0000		0.0000	0.0000	0.8990	1.8438	2.7428	3.3500e-003	2.0100e-003	3.4248
Total	**0.4843**	**0.2219**	**1.3560**	**3.7100e-003**	**0.2883**	**8.9700e-003**	**0.2973**	**0.0773**	**8.8400e-003**	**0.0861**	**8.5843**	**370.4653**	**379.0496**	**0.4765**	**4.2100e-003**	**392.2152**

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

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	3/1/2021	3/17/2021	5	13	
2	Paving	Paving	3/3/2021	3/26/2021	5	18	
3	Site Preparation	Site Preparation	3/10/2021	3/16/2021	5	5	
4	Grading	Grading	3/17/2021	4/13/2021	5	20	
5	Trenching/Foundation	Trenching	4/1/2021	5/12/2021	5	30	

6	Building Construction	Building Construction	5/1/2021	7/4/2022	5	306	
7	Architectural Coating	Architectural Coating	3/29/2022	12/5/2022	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 146,697; Residential Outdoor: 48,899; 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
Architectural Coating	Air Compressors	1	8.00	78	0.48
Building Construction	Cranes	0	0.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	0	0.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Excavators	0	0.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching/Foundation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Architectural Coating	Aerial Lifts	1	8.00	63	0.31

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
Architectural Coating	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.80	7.30	7.30	LD_Mix	HDT_Mix	HHDT
Demolition	1	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
Paving	5	0.00	0.00	0.00	10.80	7.30	7.30	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
Trenching/Foundation	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					3.9700e-003	0.0000	3.9700e-003	6.0000e-004	0.0000	6.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0140	0.0213	3.0000e-005		6.8000e-004	6.8000e-004		6.2000e-004	6.2000e-004	0.0000	2.9495	2.9495	9.5000e-004	0.0000	2.9733
Total	**1.4900e-003**	**0.0140**	**0.0213**	**3.0000e-005**	**3.9700e-003**	**6.8000e-004**	**4.6500e-003**	**6.0000e-004**	**6.2000e-004**	**1.2200e-003**	**0.0000**	**2.9495**	**2.9495**	**9.5000e-004**	**0.0000**	**2.9733**

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**	**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					1.7900e-003	0.0000	1.7900e-003	2.7000e-004	0.0000	2.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	8.3000e-004	0.0160	0.0255	3.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	2.9495	2.9495	9.5000e-004	0.0000	2.9733
Total	**8.3000e-004**	**0.0160**	**0.0255**	**3.0000e-005**	**1.7900e-003**	**1.2000e-004**	**1.9100e-003**	**2.7000e-004**	**1.2000e-004**	**3.9000e-004**	**0.0000**	**2.9495**	**2.9495**	**9.5000e-004**	**0.0000**	**2.9733**

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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 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
Category	tons/yr										MT/yr					
Off-Road	9.0600e-003	0.0927	0.1092	1.7000e-004		4.9200e-003	4.9200e-003		4.5200e-003	4.5200e-003	0.0000	14.6879	14.6879	4.7500e-003	0.0000	14.8067
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.0600e-003**	**0.0927**	**0.1092**	**1.7000e-004**		**4.9200e-003**	**4.9200e-003**		**4.5200e-003**	**4.5200e-003**	**0.0000**	**14.6879**	**14.6879**	**4.7500e-003**	**0.0000**	**14.8067**

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**	**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					
Off-Road	4.1100e-003	0.0839	0.1268	1.7000e-004		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	14.6879	14.6879	4.7500e-003	0.0000	14.8067
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.1100e-003**	**0.0839**	**0.1268**	**1.7000e-004**		**7.0000e-004**	**7.0000e-004**		**7.0000e-004**	**7.0000e-004**	**0.0000**	**14.6879**	**14.6879**	**4.7500e-003**	**0.0000**	**14.8067**

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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 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					0.0151	0.0000	0.0151	8.2800e-003	0.0000	8.2800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5500e-003	0.0369	0.0214	4.0000e-005		1.8900e-003	1.8900e-003		1.7400e-003	1.7400e-003	0.0000	3.2413	3.2413	1.0500e-003	0.0000	3.2675
Total	**3.5500e-003**	**0.0369**	**0.0214**	**4.0000e-005**	**0.0151**	**1.8900e-003**	**0.0170**	**8.2800e-003**	**1.7400e-003**	**0.0100**	**0.0000**	**3.2413**	**3.2413**	**1.0500e-003**	**0.0000**	**3.2675**

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**	**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					6.7800e-003	0.0000	6.7800e-003	3.7200e-003	0.0000	3.7200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	0.0188	0.0230	4.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	3.2413	3.2413	1.0500e-003	0.0000	3.2675
Total	**9.0000e-004**	**0.0188**	**0.0230**	**4.0000e-005**	**6.7800e-003**	**1.5000e-004**	**6.9300e-003**	**3.7200e-003**	**1.5000e-004**	**3.8700e-003**	**0.0000**	**3.2413**	**3.2413**	**1.0500e-003**	**0.0000**	**3.2675**

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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Grading - 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					0.0623	0.0000	0.0623	0.0333	0.0000	0.0333	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0187	0.2069	0.1033	2.1000e-004		9.4400e-003	9.4400e-003		8.6800e-003	8.6800e-003	0.0000	18.7863	18.7863	6.0800e-003	0.0000	18.9382
Total	**0.0187**	**0.2069**	**0.1033**	**2.1000e-004**	**0.0623**	**9.4400e-003**	**0.0718**	**0.0333**	**8.6800e-003**	**0.0420**	**0.0000**	**18.7863**	**18.7863**	**6.0800e-003**	**0.0000**	**18.9382**

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**	**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					0.0281	0.0000	0.0281	0.0150	0.0000	0.0150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2300e-003	0.1065	0.1273	2.1000e-004		7.7000e-004	7.7000e-004		7.7000e-004	7.7000e-004	0.0000	18.7863	18.7863	6.0800e-003	0.0000	18.9382
Total	**5.2300e-003**	**0.1065**	**0.1273**	**2.1000e-004**	**0.0281**	**7.7000e-004**	**0.0288**	**0.0150**	**7.7000e-004**	**0.0158**	**0.0000**	**18.7863**	**18.7863**	**6.0800e-003**	**0.0000**	**18.9382**

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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Trenching/Foundation - 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	5.6200e-003	0.0569	0.0678	9.0000e-005		3.3500e-003	3.3500e-003		3.0800e-003	3.0800e-003	0.0000	8.1892	8.1892	2.6500e-003	0.0000	8.2554
Total	**5.6200e-003**	**0.0569**	**0.0678**	**9.0000e-005**		**3.3500e-003**	**3.3500e-003**		**3.0800e-003**	**3.0800e-003**	**0.0000**	**8.1892**	**8.1892**	**2.6500e-003**	**0.0000**	**8.2554**

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**	**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					
Off-Road	2.2800e-003	0.0520	0.0703	9.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	8.1892	8.1892	2.6500e-003	0.0000	8.2554
Total	**2.2800e-003**	**0.0520**	**0.0703**	**9.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**8.1892**	**8.1892**	**2.6500e-003**	**0.0000**	**8.2554**

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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Building Construction - 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	0.1033	0.7395	0.8051	1.1200e-003		0.0447	0.0447		0.0422	0.0422	0.0000	92.0751	92.0751	0.0234	0.0000	92.6605
Total	**0.1033**	**0.7395**	**0.8051**	**1.1200e-003**		**0.0447**	**0.0447**		**0.0422**	**0.0422**	**0.0000**	**92.0751**	**92.0751**	**0.0234**	**0.0000**	**92.6605**

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**	**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					
Off-Road	0.0351	0.6734	0.7718	1.1200e-003		6.6500e-003	6.6500e-003		6.6500e-003	6.6500e-003	0.0000	92.0750	92.0750	0.0234	0.0000	92.6604
Total	**0.0351**	**0.6734**	**0.7718**	**1.1200e-003**		**6.6500e-003**	**6.6500e-003**		**6.6500e-003**	**6.6500e-003**	**0.0000**	**92.0750**	**92.0750**	**0.0234**	**0.0000**	**92.6604**

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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Building Construction - 2022

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	0.0694	0.5087	0.5955	8.4000e-004		0.0280	0.0280		0.0264	0.0264	0.0000	68.9449	68.9449	0.0173	0.0000	69.3768
Total	**0.0694**	**0.5087**	**0.5955**	**8.4000e-004**		**0.0280**	**0.0280**		**0.0264**	**0.0264**	**0.0000**	**68.9449**	**68.9449**	**0.0173**	**0.0000**	**69.3768**

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**	**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					
Off-Road	0.0263	0.5041	0.5777	8.4000e-004		4.9800e-003	4.9800e-003		4.9800e-003	4.9800e-003	0.0000	68.9449	68.9449	0.0173	0.0000	69.3767
Total	**0.0263**	**0.5041**	**0.5777**	**8.4000e-004**		**4.9800e-003**	**4.9800e-003**		**4.9800e-003**	**4.9800e-003**	**0.0000**	**68.9449**	**68.9449**	**0.0173**	**0.0000**	**69.3767**

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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Architectural Coating - 2022

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	0.5166					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0278	0.2194	0.3161	5.1000e-004		0.0107	0.0107		0.0107	0.0107	0.0000	43.9164	43.9164	6.2900e-003	0.0000	44.0736
Total	**0.5444**	**0.2194**	**0.3161**	**5.1000e-004**		**0.0107**	**0.0107**		**0.0107**	**0.0107**	**0.0000**	**43.9164**	**43.9164**	**6.2900e-003**	**0.0000**	**44.0736**

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**	**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	0.5166					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0109	0.2478	0.3346	5.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	43.9164	43.9164	6.2900e-003	0.0000	44.0736
Total	**0.5275**	**0.2478**	**0.3346**	**5.1000e-004**		**2.6000e-003**	**2.6000e-003**		**2.6000e-003**	**2.6000e-003**	**0.0000**	**43.9164**	**43.9164**	**6.2900e-003**	**0.0000**	**44.0736**

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**	**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	0.1310	0.1509	1.0371	3.2600e-003	0.2883	1.9000e-003	0.2902	0.0773	1.7700e-003	0.0790	0.0000	263.2140	263.2140	0.0133	0.0000	263.5475
Unmitigated	0.1310	0.1509	1.0371	3.2600e-003	0.2883	1.9000e-003	0.2902	0.0773	1.7700e-003	0.0790	0.0000	263.2140	263.2140	0.0133	0.0000	263.5475

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	87.84	85.72	73.17	197,339	197,339
Parking Lot	0.00	0.00	0.00		
Single Family Housing	254.88	265.32	230.78	584,168	584,168
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	342.72	351.04	303.96	781,506	781,506

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Other Asphalt Surfaces	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
Condo/Townhouse	0.479119	0.070193	0.225986	0.142837	0.028110	0.006879	0.021591	0.006144	0.003257	0.001493	0.013003	0.000539	0.000849
Other Asphalt Surfaces	0.479119	0.070193	0.225986	0.142837	0.028110	0.006879	0.021591	0.006144	0.003257	0.001493	0.013003	0.000539	0.000849
Parking Lot	0.479119	0.070193	0.225986	0.142837	0.028110	0.006879	0.021591	0.006144	0.003257	0.001493	0.013003	0.000539	0.000849
Single Family Housing	0.479119	0.070193	0.225986	0.142837	0.028110	0.006879	0.021591	0.006144	0.003257	0.001493	0.013003	0.000539	0.000849

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	26.6326	26.6326	3.6800e-003	7.6000e-004	26.9513
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	26.6326	26.6326	3.6800e-003	7.6000e-004	26.9513
NaturalGas Mitigated	7.6300e-003	0.0652	0.0278	4.2000e-004		5.2700e-003	5.2700e-003		5.2700e-003	5.2700e-003	0.0000	75.5296	75.5296	1.4500e-003	1.3800e-003	75.9785

NaturalGas Unmitigated	7.6300e-003	0.0652	0.0278	4.2000e-004		5.2700e-003	5.2700e-003		5.2700e-003	5.2700e-003	0.0000	75.5296	75.5296	1.4500e-003	1.3800e-003	75.9785

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					
Condo/Townhouse	272630	1.4700e-003	0.0126	5.3500e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.5486	14.5486	2.8000e-004	2.7000e-004	14.6351
Other Asphalt Surfaces	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
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
Single Family Housing	1.14274e+006	6.1600e-003	0.0527	0.0224	3.4000e-004		4.2600e-003	4.2600e-003		4.2600e-003	4.2600e-003	0.0000	60.9810	60.9810	1.1700e-003	1.1200e-003	61.3434
Total		**7.6300e-003**	**0.0652**	**0.0278**	**4.2000e-004**		**5.2800e-003**	**5.2800e-003**		**5.2800e-003**	**5.2800e-003**	**0.0000**	**75.5296**	**75.5296**	**1.4500e-003**	**1.3900e-003**	**75.9785**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	272630	1.4700e-003	0.0126	5.3500e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.5486	14.5486	2.8000e-004	2.7000e-004	14.6351
Other Asphalt Surfaces	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
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
Single Family Housing	1.14274e+006	6.1600e-003	0.0527	0.0224	3.4000e-004		4.2600e-003	4.2600e-003		4.2600e-003	4.2600e-003	0.0000	60.9810	60.9810	1.1700e-003	1.1200e-003	61.3434

Total		**7.6300e-003**	**0.0652**	**0.0278**	**4.2000e-004**		**5.2800e-003**	**5.2800e-003**		**5.2800e-003**	**5.2800e-003**	**0.0000**	**75.5296**	**75.5296**	**1.4500e-003**	**1.3900e-003**	**75.9785**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	60007.6	5.7160	7.9000e-004	1.6000e-004	5.7844
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	4060	0.3867	5.0000e-005	1.0000e-005	0.3914
Single Family Housing	215527	20.5299	2.8400e-003	5.9000e-004	20.7756
Total		**26.6326**	**3.6800e-003**	**7.6000e-004**	**26.9513**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	60007.6	5.7160	7.9000e-004	1.6000e-004	5.7844
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	4060	0.3867	5.0000e-005	1.0000e-005	0.3914

Single Family Housing	215527	20.5299	2.8400e-003	5.9000e-004	20.7756
Total		**26.6326**	**3.6800e-003**	**7.6000e-004**	**26.9513**

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	0.3457	5.7400e-003	0.2911	3.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	3.2453	3.2453	5.1000e-004	5.0000e-005	3.2732
Unmitigated	0.3457	5.7400e-003	0.2911	3.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	3.2453	3.2453	5.1000e-004	5.0000e-005	3.2732

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	0.0517					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2850					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hearth	2.8000e-004	2.3900e-003	1.0200e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7714	2.7714	5.0000e-005	5.0000e-005	2.7879
Landscaping	8.7700e-003	3.3400e-003	0.2901	2.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	0.4739	0.4739	4.6000e-004	0.0000	0.4853
Total	**0.3457**	**5.7300e-003**	**0.2911**	**4.0000e-005**		**1.7900e-003**	**1.7900e-003**		**1.7900e-003**	**1.7900e-003**	**0.0000**	**3.2453**	**3.2453**	**5.1000e-004**	**5.0000e-005**	**3.2732**

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	0.0517					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2850					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.8000e-004	2.3900e-003	1.0200e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7714	2.7714	5.0000e-005	5.0000e-005	2.7879
Landscaping	8.7700e-003	3.3400e-003	0.2901	2.0000e-005		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	0.4739	0.4739	4.6000e-004	0.0000	0.4853
Total	**0.3457**	**5.7300e-003**	**0.2911**	**4.0000e-005**		**1.7900e-003**	**1.7900e-003**		**1.7900e-003**	**1.7900e-003**	**0.0000**	**3.2453**	**3.2453**	**5.1000e-004**	**5.0000e-005**	**3.2732**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	2.7428	3.3500e-003	2.0100e-003	3.4248
Unmitigated	2.7428	3.3500e-003	2.0100e-003	3.4248

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	0.781848 / 0.492904	0.8439	1.0300e-003	6.2000e-004	1.0538
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.75916 / 1.10903	1.8988	2.3200e-003	1.3900e-003	2.3710
Total		**2.7428**	**3.3500e-003**	**2.0100e-003**	**3.4248**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

Condo/Townhouse	0.781848 / 0.492904	0.8439	1.0300e-003	6.2000e-004	1.0538
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.75916 / 1.10903	1.8988	2.3200e-003	1.3900e-003	2.3710
Total		**2.7428**	**3.3500e-003**	**2.0100e-003**	**3.4248**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.6852	0.4542	0.0000	19.0399
Unmitigated	7.6852	0.4542	0.0000	19.0399

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Condo/Townhouse	5.52	1.1205	0.0662	0.0000	2.7760
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	32.34	6.5647	0.3880	0.0000	16.2638
Total		**7.6852**	**0.4542**	**0.0000**	**19.0399**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	5.52	1.1205	0.0662	0.0000	2.7760
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	32.34	6.5647	0.3880	0.0000	16.2638
Total		**7.6852**	**0.4542**	**0.0000**	**19.0399**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Stanford Wedge Housing Project - San Mateo County, Annual

Stanford Wedge Housing Project - 2030 Ops

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	20.30	1000sqft	0.00	20,300.00	0
Parking Lot	29.00	Space	0.00	11,600.00	0
Condo/Townhouse	12.00	Dwelling Unit	0.00	7,575.00	34
Single Family Housing	27.00	Dwelling Unit	4.00	64,868.00	77

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Rate

Land Use - Based on Construction Data Sheet 8-6-20

Construction Phase - Per Construction Data Sheet 8-4-20

Off-road Equipment - Per Construction Data Sheet

Off-road Equipment - Per Construction Data Sheet

Off-road Equipment - Per Construction Data Sheet

Off-road Equipment - Per Construction Data sheet

Off-road Equipment - Per Construction Data Sheet

Off-road Equipment - Per Construction data Sheet

Off-road Equipment - Per Construction Data Sheet

Trips and VMT - 312 Cement Truck RT, 86 TR for asphalt per construction data sheet

Demolition - Per Construction Data Sheet

Grading - Per Cover Sheet of Plan Set 7-14-20

Architectural Coating - There are parking spaces, but not a parking lot, so the default sqft should be appropriate

Vehicle Trips - Per ITE Trip Generation Rates (10th Edition) ITE LU 210 average rate and ITE LU 220 Average rate. Adjusted based on CalEEMod Defaults for Sat and Sun

Vehicle Emission Factors - EMFAC2017 EFs for San Mateo Co. 2030

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Assume no wood burning hearths

Energy Use -

Water And Wastewater - Assume 100% WWTP

Construction Off-road Equipment Mitigation - Assume a T3L3 Mitigation and basic BAAQMD fugitive dust BMPs

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	18.00	180.00
tblConstructionPhase	NumDays	230.00	306.00
tblConstructionPhase	NumDays	20.00	13.00

tblConstructionPhase	NumDays	8.00	20.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	1.80	3.84
tblFireplaces	NumberGas	6.75	18.36
tblFireplaces	NumberWood	2.04	0.00
tblFireplaces	NumberWood	11.61	0.00
tblFleetMix	HHD	6.8130e-003	6.3112e-003
tblFleetMix	HHD	6.8130e-003	6.3112e-003
tblFleetMix	HHD	6.8130e-003	6.3112e-003
tblFleetMix	HHD	6.8130e-003	6.3112e-003
tblFleetMix	LDA	0.45	0.44
tblFleetMix	LDA	0.45	0.44
tblFleetMix	LDA	0.45	0.44
tblFleetMix	LDA	0.45	0.44
tblFleetMix	LDT1	0.05	0.08
tblFleetMix	LDT1	0.05	0.08
tblFleetMix	LDT1	0.05	0.08
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tblFleetMix	LDT2	0.28	0.24
tblFleetMix	LDT2	0.28	0.24
tblFleetMix	LDT2	0.28	0.24
tblFleetMix	LDT2	0.28	0.24
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD2	7.6330e-003	7.8583e-003

tblFleetMix	LHD2	7.6330e-003	7.8583e-003
tblFleetMix	LHD2	7.6330e-003	7.8583e-003
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tblFleetMix	MCY	9.5100e-003	0.01
tblFleetMix	MCY	9.5100e-003	0.01
tblFleetMix	MCY	9.5100e-003	0.01
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tblFleetMix	MDV	0.15	0.16
tblFleetMix	MDV	0.15	0.16
tblFleetMix	MDV	0.15	0.16
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tblFleetMix	MH	8.9600e-004	9.6919e-004
tblFleetMix	MH	8.9600e-004	9.6919e-004
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tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
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tblFleetMix	OBUS	4.4760e-003	2.9572e-003
tblFleetMix	OBUS	4.4760e-003	2.9572e-003
tblFleetMix	OBUS	4.4760e-003	2.9572e-003
tblFleetMix	SBUS	6.0500e-004	6.1275e-004
tblFleetMix	SBUS	6.0500e-004	6.1275e-004
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tblFleetMix	SBUS	6.0500e-004	6.1275e-004
tblFleetMix	UBUS	2.8550e-003	1.4301e-003

tblFleetMix	UBUS	2.8550e-003	1.4301e-003
tblFleetMix	UBUS	2.8550e-003	1.4301e-003
tblFleetMix	UBUS	2.8550e-003	1.4301e-003
tblGrading	AcresOfGrading	10.00	4.00
tblGrading	MaterialExported	0.00	173.00
tblLandUse	LandUseSquareFeet	12,000.00	7,575.00
tblLandUse	LandUseSquareFeet	48,600.00	64,868.00
tblLandUse	LotAcreage	0.47	0.00
tblLandUse	LotAcreage	0.26	0.00
tblLandUse	LotAcreage	0.75	0.00
tblLandUse	LotAcreage	8.77	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	UsageHours	7.00	0.00

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	HaulingTripNumber	37.00	0.00
tblTripsAndVMT	HaulingTripNumber	22.00	0.00
tblTripsAndVMT	VendorTripNumber	9.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
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tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	32.00	0.00
tblTripsAndVMT	WorkerTripNumber	6.00	0.00
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tblVehicleEF	HHD	0.01	3.2200e-004
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tblVehicleEF	HHD	1.9400e-004	5.0000e-006
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tblVehicleEF	LDA	0.03	0.12
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tblVehicleEF	LDA	0.03	0.13

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tblVehicleEF	LDT1	0.04	0.14
tblVehicleEF	LDT1	1.3290e-003	1.0040e-003
tblVehicleEF	LDT1	2.0980e-003	1.3910e-003
tblVehicleEF	LDT1	1.2220e-003	9.2400e-004
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tblVehicleEF	LDT1	0.08	0.07
tblVehicleEF	LDT1	0.02	0.03
tblVehicleEF	LDT1	6.3870e-003	4.4390e-003
tblVehicleEF	LDT1	0.08	0.28
tblVehicleEF	LDT1	0.04	0.13
tblVehicleEF	LDT1	2.2670e-003	2.4210e-003
tblVehicleEF	LDT1	5.4600e-004	0.00
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tblVehicleEF	LDT1	0.08	0.07
tblVehicleEF	LDT1	0.02	0.03
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tblVehicleEF	LDT1	0.08	0.28
tblVehicleEF	LDT1	0.05	0.14
tblVehicleEF	LDT2	2.6000e-003	1.3110e-003
tblVehicleEF	LDT2	2.6890e-003	0.04

tblVehicleEF	LDT2	0.44	0.48
tblVehicleEF	LDT2	0.82	2.26
tblVehicleEF	LDT2	259.84	258.02
tblVehicleEF	LDT2	60.40	55.03
tblVehicleEF	LDT2	0.04	0.03
tblVehicleEF	LDT2	0.04	0.15
tblVehicleEF	LDT2	1.2860e-003	9.9600e-004
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tblVehicleEF	LDT2	1.1830e-003	9.1700e-004
tblVehicleEF	LDT2	1.8630e-003	1.2080e-003
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tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	6.4580e-003	4.8000e-003
tblVehicleEF	LDT2	0.06	0.26
tblVehicleEF	LDT2	0.04	0.16
tblVehicleEF	LDT2	2.6010e-003	9.1510e-003
tblVehicleEF	LDT2	6.1700e-004	8.6000e-005
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tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	9.4150e-003	6.9660e-003
tblVehicleEF	LDT2	0.06	0.26
tblVehicleEF	LDT2	0.04	0.17
tblVehicleEF	LHD1	3.5790e-003	3.9860e-003
tblVehicleEF	LHD1	6.9490e-003	4.4850e-003
tblVehicleEF	LHD1	8.0930e-003	7.3910e-003
tblVehicleEF	LHD1	0.13	0.18

tblVehicleEF	LHD1	0.52	0.40
tblVehicleEF	LHD1	1.42	0.86
tblVehicleEF	LHD1	8.92	8.08
tblVehicleEF	LHD1	630.67	689.79
tblVehicleEF	LHD1	25.19	9.94
tblVehicleEF	LHD1	0.06	0.04
tblVehicleEF	LHD1	0.33	0.18
tblVehicleEF	LHD1	0.54	0.20
tblVehicleEF	LHD1	7.9500e-004	9.1600e-004
tblVehicleEF	LHD1	0.01	9.8940e-003
tblVehicleEF	LHD1	8.7410e-003	5.8960e-003
tblVehicleEF	LHD1	5.7500e-004	2.0100e-004
tblVehicleEF	LHD1	7.6000e-004	8.7600e-004
tblVehicleEF	LHD1	2.6230e-003	2.4740e-003
tblVehicleEF	LHD1	8.3320e-003	5.5970e-003
tblVehicleEF	LHD1	5.2800e-004	1.8500e-004
tblVehicleEF	LHD1	1.0880e-003	8.5500e-004
tblVehicleEF	LHD1	0.05	0.04
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	7.4600e-004	5.9000e-004
tblVehicleEF	LHD1	0.09	0.07
tblVehicleEF	LHD1	0.20	0.29
tblVehicleEF	LHD1	0.11	0.03
tblVehicleEF	LHD1	8.8000e-005	7.8000e-005
tblVehicleEF	LHD1	6.1550e-003	6.7280e-003
tblVehicleEF	LHD1	2.7700e-004	9.8000e-005
tblVehicleEF	LHD1	1.0880e-003	8.5500e-004
tblVehicleEF	LHD1	0.05	0.04

tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	7.4600e-004	5.9000e-004
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.20	0.29
tblVehicleEF	LHD1	0.12	0.04
tblVehicleEF	LHD2	2.5060e-003	2.4420e-003
tblVehicleEF	LHD2	5.0690e-003	4.9160e-003
tblVehicleEF	LHD2	2.8610e-003	4.1310e-003
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.43	0.44
tblVehicleEF	LHD2	0.87	0.49
tblVehicleEF	LHD2	13.54	12.62
tblVehicleEF	LHD2	673.90	670.16
tblVehicleEF	LHD2	21.85	6.49
tblVehicleEF	LHD2	0.07	0.06
tblVehicleEF	LHD2	0.15	0.21
tblVehicleEF	LHD2	0.24	0.12
tblVehicleEF	LHD2	1.0250e-003	1.4740e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	8.6290e-003	0.01
tblVehicleEF	LHD2	3.7300e-004	1.0700e-004
tblVehicleEF	LHD2	9.8000e-004	1.4100e-003
tblVehicleEF	LHD2	2.7070e-003	2.7060e-003
tblVehicleEF	LHD2	8.2320e-003	0.01
tblVehicleEF	LHD2	3.4300e-004	9.9000e-005
tblVehicleEF	LHD2	3.6400e-004	4.2300e-004
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.01	0.01

tblVehicleEF	LHD2	2.6800e-004	3.0400e-004
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.04	0.11
tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	LHD2	1.3200e-004	1.2100e-004
tblVehicleEF	LHD2	6.5470e-003	6.4670e-003
tblVehicleEF	LHD2	2.3300e-004	6.4000e-005
tblVehicleEF	LHD2	3.6400e-004	4.2300e-004
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	2.6800e-004	3.0400e-004
tblVehicleEF	LHD2	0.10	0.11
tblVehicleEF	LHD2	0.04	0.11
tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	MCY	0.47	0.32
tblVehicleEF	MCY	0.16	0.25
tblVehicleEF	MCY	17.68	17.76
tblVehicleEF	MCY	10.53	9.39
tblVehicleEF	MCY	173.86	212.58
tblVehicleEF	MCY	41.80	58.78
tblVehicleEF	MCY	1.14	1.14
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.2080e-003	2.2180e-003
tblVehicleEF	MCY	3.4030e-003	3.0130e-003
tblVehicleEF	MCY	2.0580e-003	2.0680e-003
tblVehicleEF	MCY	3.1790e-003	2.8140e-003
tblVehicleEF	MCY	0.61	1.21
tblVehicleEF	MCY	0.50	0.49

tblVehicleEF	MCY	0.36	0.71
tblVehicleEF	MCY	2.13	2.13
tblVehicleEF	MCY	0.38	1.40
tblVehicleEF	MCY	2.12	1.89
tblVehicleEF	MCY	2.0910e-003	2.1040e-003
tblVehicleEF	MCY	6.5200e-004	5.8200e-004
tblVehicleEF	MCY	0.61	1.21
tblVehicleEF	MCY	0.50	0.49
tblVehicleEF	MCY	0.36	0.71
tblVehicleEF	MCY	2.68	2.68
tblVehicleEF	MCY	0.38	1.40
tblVehicleEF	MCY	2.31	2.06
tblVehicleEF	MDV	3.5530e-003	1.2400e-003
tblVehicleEF	MDV	4.8880e-003	0.04
tblVehicleEF	MDV	0.52	0.46
tblVehicleEF	MDV	1.17	2.24
tblVehicleEF	MDV	345.39	309.56
tblVehicleEF	MDV	79.35	64.69
tblVehicleEF	MDV	0.05	0.02
tblVehicleEF	MDV	0.08	0.15
tblVehicleEF	MDV	1.3240e-003	9.7100e-004
tblVehicleEF	MDV	2.0250e-003	1.2840e-003
tblVehicleEF	MDV	1.2200e-003	8.9500e-004
tblVehicleEF	MDV	1.8620e-003	1.1810e-003
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.09	0.07
tblVehicleEF	MDV	0.04	0.04
tblVehicleEF	MDV	8.9310e-003	4.5600e-003

tblVehicleEF	MDV	0.08	0.26
tblVehicleEF	MDV	0.07	0.16
tblVehicleEF	MDV	3.4520e-003	2.8580e-003
tblVehicleEF	MDV	8.1300e-004	5.9800e-004
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.09	0.07
tblVehicleEF	MDV	0.04	0.04
tblVehicleEF	MDV	0.01	6.5940e-003
tblVehicleEF	MDV	0.08	0.26
tblVehicleEF	MDV	0.07	0.18
tblVehicleEF	MH	5.3780e-003	4.0670e-003
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	0.26	0.22
tblVehicleEF	MH	3.31	1.59
tblVehicleEF	MH	1,174.79	1,315.39
tblVehicleEF	MH	56.01	15.06
tblVehicleEF	MH	0.68	0.84
tblVehicleEF	MH	0.53	0.22
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.9500e-003	9.1290e-003
tblVehicleEF	MH	8.6500e-004	2.2300e-004
tblVehicleEF	MH	3.2220e-003	3.2890e-003
tblVehicleEF	MH	6.6090e-003	8.6970e-003
tblVehicleEF	MH	7.9600e-004	2.0500e-004
tblVehicleEF	MH	0.22	0.16
tblVehicleEF	MH	0.02	0.01
tblVehicleEF	MH	0.11	0.08
tblVehicleEF	MH	0.03	0.03

tblVehicleEF	MH	5.4280e-003	0.25
tblVehicleEF	MH	0.19	0.07
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.1700e-004	1.4900e-004
tblVehicleEF	MH	0.22	0.16
tblVehicleEF	MH	0.02	0.01
tblVehicleEF	MH	0.11	0.08
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	5.4280e-003	0.25
tblVehicleEF	MH	0.21	0.08
tblVehicleEF	MHD	0.02	3.9010e-003
tblVehicleEF	MHD	2.5460e-003	9.3700e-004
tblVehicleEF	MHD	0.03	8.5280e-003
tblVehicleEF	MHD	0.36	0.38
tblVehicleEF	MHD	0.24	0.14
tblVehicleEF	MHD	3.51	0.87
tblVehicleEF	MHD	134.54	55.53
tblVehicleEF	MHD	1,162.44	958.82
tblVehicleEF	MHD	57.83	8.66
tblVehicleEF	MHD	0.34	0.29
tblVehicleEF	MHD	0.99	1.31
tblVehicleEF	MHD	10.23	1.67
tblVehicleEF	MHD	4.2000e-005	1.1600e-004
tblVehicleEF	MHD	2.8940e-003	6.3200e-003
tblVehicleEF	MHD	8.0800e-004	1.1300e-004
tblVehicleEF	MHD	4.0000e-005	1.1100e-004
tblVehicleEF	MHD	2.7630e-003	6.0400e-003
tblVehicleEF	MHD	7.4300e-004	1.0400e-004

tblVehicleEF	MHD	4.5900e-004	2.1500e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	3.3600e-004	1.5500e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.01	0.06
tblVehicleEF	MHD	0.22	0.04
tblVehicleEF	MHD	1.2960e-003	5.2700e-004
tblVehicleEF	MHD	0.01	9.1510e-003
tblVehicleEF	MHD	6.3900e-004	8.6000e-005
tblVehicleEF	MHD	4.5900e-004	2.1500e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	3.3600e-004	1.5500e-004
tblVehicleEF	MHD	0.05	0.01
tblVehicleEF	MHD	0.01	0.06
tblVehicleEF	MHD	0.24	0.05
tblVehicleEF	OBUS	0.01	6.7860e-003
tblVehicleEF	OBUS	3.7210e-003	1.7360e-003
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.24	0.67
tblVehicleEF	OBUS	0.29	0.22
tblVehicleEF	OBUS	3.83	1.34
tblVehicleEF	OBUS	125.90	104.99
tblVehicleEF	OBUS	1,274.07	1,195.47
tblVehicleEF	OBUS	63.49	11.93
tblVehicleEF	OBUS	0.28	0.47
tblVehicleEF	OBUS	0.88	1.49

tblVehicleEF	OBUS	3.03	1.22
tblVehicleEF	OBUS	2.6000e-005	1.5600e-004
tblVehicleEF	OBUS	2.9110e-003	8.0770e-003
tblVehicleEF	OBUS	9.4500e-004	1.4600e-004
tblVehicleEF	OBUS	2.5000e-005	1.4900e-004
tblVehicleEF	OBUS	2.7640e-003	7.7140e-003
tblVehicleEF	OBUS	8.6900e-004	1.3400e-004
tblVehicleEF	OBUS	8.1200e-004	6.9700e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	4.5300e-004	3.8500e-004
tblVehicleEF	OBUS	0.04	0.01
tblVehicleEF	OBUS	0.02	0.15
tblVehicleEF	OBUS	0.24	0.07
tblVehicleEF	OBUS	1.2120e-003	9.9600e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.0200e-004	1.1800e-004
tblVehicleEF	OBUS	8.1200e-004	6.9700e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	4.5300e-004	3.8500e-004
tblVehicleEF	OBUS	0.05	0.02
tblVehicleEF	OBUS	0.02	0.15
tblVehicleEF	OBUS	0.27	0.07
tblVehicleEF	SBUS	0.82	0.16
tblVehicleEF	SBUS	6.7640e-003	5.7190e-003
tblVehicleEF	SBUS	0.05	0.01
tblVehicleEF	SBUS	13.58	5.81

tblVehicleEF	SBUS	0.37	0.52
tblVehicleEF	SBUS	10.81	2.02
tblVehicleEF	SBUS	774.42	372.76
tblVehicleEF	SBUS	809.72	883.04
tblVehicleEF	SBUS	94.79	11.09
tblVehicleEF	SBUS	1.96	2.28
tblVehicleEF	SBUS	0.86	2.37
tblVehicleEF	SBUS	5.09	0.99
tblVehicleEF	SBUS	9.3400e-004	1.7990e-003
tblVehicleEF	SBUS	9.1050e-003	9.6950e-003
tblVehicleEF	SBUS	4.8090e-003	0.01
tblVehicleEF	SBUS	1.9160e-003	1.8900e-004
tblVehicleEF	SBUS	8.9300e-004	1.7210e-003
tblVehicleEF	SBUS	2.2760e-003	2.4240e-003
tblVehicleEF	SBUS	4.5600e-003	0.01
tblVehicleEF	SBUS	1.7620e-003	1.7400e-004
tblVehicleEF	SBUS	3.7070e-003	1.0240e-003
tblVehicleEF	SBUS	0.04	0.01
tblVehicleEF	SBUS	1.61	0.71
tblVehicleEF	SBUS	2.0970e-003	5.6900e-004
tblVehicleEF	SBUS	0.04	0.06
tblVehicleEF	SBUS	0.02	0.08
tblVehicleEF	SBUS	0.55	0.08
tblVehicleEF	SBUS	7.8740e-003	3.5870e-003
tblVehicleEF	SBUS	7.9330e-003	8.5360e-003
tblVehicleEF	SBUS	1.1340e-003	1.1000e-004
tblVehicleEF	SBUS	3.7070e-003	1.0240e-003
tblVehicleEF	SBUS	0.04	0.01

tblVehicleEF	SBUS	2.35	1.03
tblVehicleEF	SBUS	2.0970e-003	5.6900e-004
tblVehicleEF	SBUS	0.05	0.07
tblVehicleEF	SBUS	0.02	0.08
tblVehicleEF	SBUS	0.61	0.09
tblVehicleEF	UBUS	0.25	1.75
tblVehicleEF	UBUS	0.05	8.0630e-003
tblVehicleEF	UBUS	2.66	13.25
tblVehicleEF	UBUS	7.71	0.82
tblVehicleEF	UBUS	1,920.81	1,616.16
tblVehicleEF	UBUS	124.76	7.49
tblVehicleEF	UBUS	3.13	0.67
tblVehicleEF	UBUS	13.14	0.07
tblVehicleEF	UBUS	0.54	0.08
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.05	4.9300e-003
tblVehicleEF	UBUS	1.3970e-003	9.1000e-005
tblVehicleEF	UBUS	0.23	0.03
tblVehicleEF	UBUS	3.0000e-003	7.8010e-003
tblVehicleEF	UBUS	0.05	4.7140e-003
tblVehicleEF	UBUS	1.2850e-003	8.3000e-005
tblVehicleEF	UBUS	2.0810e-003	1.3500e-004
tblVehicleEF	UBUS	0.04	1.6730e-003
tblVehicleEF	UBUS	1.5040e-003	8.4000e-005
tblVehicleEF	UBUS	0.15	0.03
tblVehicleEF	UBUS	9.5820e-003	9.4520e-003
tblVehicleEF	UBUS	0.65	0.04
tblVehicleEF	UBUS	0.02	0.01

tblVehicleEF	UBUS	1.3880e-003	7.4000e-005
tblVehicleEF	UBUS	2.0810e-003	1.3500e-004
tblVehicleEF	UBUS	0.04	1.6730e-003
tblVehicleEF	UBUS	1.5040e-003	8.4000e-005
tblVehicleEF	UBUS	0.41	1.79
tblVehicleEF	UBUS	9.5820e-003	9.4520e-003
tblVehicleEF	UBUS	0.71	0.04
tblVehicleTrips	ST_TR	5.67	7.14
tblVehicleTrips	ST_TR	9.91	9.83
tblVehicleTrips	SU_TR	4.84	6.10
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	5.81	7.32
tblVehicleTrips	WD_TR	9.52	9.44
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
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	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	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	0.3456	5.7300e-003	0.2903	3.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	3.2453	3.2453	5.1000e-004	5.0000e-005	3.2731
Energy	7.6300e-003	0.0652	0.0278	4.2000e-004		5.2700e-003	5.2700e-003		5.2700e-003	5.2700e-003	0.0000	102.1623	102.1623	5.1300e-003	2.1500e-003	102.9298
Mobile	0.0996	0.1186	0.8383	3.0600e-003	0.2889	1.4600e-003	0.2903	0.0775	1.3700e-003	0.0789	0.0000	235.2941	235.2941	0.0111	0.0000	235.5708
Waste						0.0000	0.0000		0.0000	0.0000	7.6852	0.0000	7.6852	0.4542	0.0000	19.0399
Water						0.0000	0.0000		0.0000	0.0000	0.8990	1.8438	2.7428	3.3500e-003	2.0100e-003	3.4248
Total	**0.4528**	**0.1896**	**1.1563**	**3.5100e-003**	**0.2889**	**8.5300e-003**	**0.2974**	**0.0775**	**8.4400e-003**	**0.0859**	**8.5843**	**342.5455**	**351.1298**	**0.4742**	**4.2100e-003**	**364.2384**

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	0.3456	5.7300e-003	0.2903	3.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	3.2453	3.2453	5.1000e-004	5.0000e-005	3.2731
Energy	7.6300e-003	0.0652	0.0278	4.2000e-004		5.2700e-003	5.2700e-003		5.2700e-003	5.2700e-003	0.0000	102.1623	102.1623	5.1300e-003	2.1500e-003	102.9298

Mobile	0.0996	0.1186	0.8383	3.0600e-003	0.2889	1.4600e-003	0.2903	0.0775	1.3700e-003	0.0789	0.0000	235.2941	235.2941	0.0111	0.0000	235.5708
Waste						0.0000	0.0000		0.0000	0.0000	7.6852	0.0000	7.6852	0.4542	0.0000	19.0399
Water						0.0000	0.0000		0.0000	0.0000	0.8990	1.8438	2.7428	3.3500e-003	2.0100e-003	3.4248
Total	**0.4528**	**0.1896**	**1.1563**	**3.5100e-003**	**0.2889**	**8.5300e-003**	**0.2974**	**0.0775**	**8.4400e-003**	**0.0859**	**8.5843**	**342.5455**	**351.1298**	**0.4742**	**4.2100e-003**	**364.2384**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0996	0.1186	0.8383	3.0600e-003	0.2889	1.4600e-003	0.2903	0.0775	1.3700e-003	0.0789	0.0000	235.2941	235.2941	0.0111	0.0000	235.5708
Unmitigated	0.0996	0.1186	0.8383	3.0600e-003	0.2889	1.4600e-003	0.2903	0.0775	1.3700e-003	0.0789	0.0000	235.2941	235.2941	0.0111	0.0000	235.5708

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

Condo/Townhouse	87.84	85.68	73.20	197,333	197,333
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	254.88	265.41	230.85	584,218	584,218
Total	342.72	351.09	304.05	781,551	781,551

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.439373	0.076262	0.240335	0.155302	0.030200	0.007858	0.025976	0.006311	0.002957	0.001430	0.012414	0.000613	0.000969
Other Asphalt Surfaces	0.439373	0.076262	0.240335	0.155302	0.030200	0.007858	0.025976	0.006311	0.002957	0.001430	0.012414	0.000613	0.000969
Parking Lot	0.439373	0.076262	0.240335	0.155302	0.030200	0.007858	0.025976	0.006311	0.002957	0.001430	0.012414	0.000613	0.000969
Single Family Housing	0.439373	0.076262	0.240335	0.155302	0.030200	0.007858	0.025976	0.006311	0.002957	0.001430	0.012414	0.000613	0.000969

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	26.6326	26.6326	3.6800e-003	7.6000e-004	26.9513
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	26.6326	26.6326	3.6800e-003	7.6000e-004	26.9513
NaturalGas Mitigated	7.6300e-003	0.0652	0.0278	4.2000e-004		5.2700e-003	5.2700e-003		5.2700e-003	5.2700e-003	0.0000	75.5296	75.5296	1.4500e-003	1.3800e-003	75.9785
NaturalGas Unmitigated	7.6300e-003	0.0652	0.0278	4.2000e-004		5.2700e-003	5.2700e-003		5.2700e-003	5.2700e-003	0.0000	75.5296	75.5296	1.4500e-003	1.3800e-003	75.9785

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					
Condo/Townhouse	272630	1.4700e-003	0.0126	5.3500e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.5486	14.5486	2.8000e-004	2.7000e-004	14.6351
Other Asphalt Surfaces	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
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
Single Family Housing	1.14274e+006	6.1600e-003	0.0527	0.0224	3.4000e-004		4.2600e-003	4.2600e-003		4.2600e-003	4.2600e-003	0.0000	60.9810	60.9810	1.1700e-003	1.1200e-003	61.3434
Total		**7.6300e-003**	**0.0652**	**0.0278**	**4.2000e-004**		**5.2800e-003**	**5.2800e-003**		**5.2800e-003**	**5.2800e-003**	**0.0000**	**75.5296**	**75.5296**	**1.4500e-003**	**1.3900e-003**	**75.9785**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	272630	1.4700e-003	0.0126	5.3500e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.5486	14.5486	2.8000e-004	2.7000e-004	14.6351
Other Asphalt Surfaces	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
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
Single Family Housing	1.14274e+006	6.1600e-003	0.0527	0.0224	3.4000e-004		4.2600e-003	4.2600e-003		4.2600e-003	4.2600e-003	0.0000	60.9810	60.9810	1.1700e-003	1.1200e-003	61.3434
Total		**7.6300e-003**	**0.0652**	**0.0278**	**4.2000e-004**		**5.2800e-003**	**5.2800e-003**		**5.2800e-003**	**5.2800e-003**	**0.0000**	**75.5296**	**75.5296**	**1.4500e-003**	**1.3900e-003**	**75.9785**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	60007.6	5.7160	7.9000e-004	1.6000e-004	5.7844
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	4060	0.3867	5.0000e-005	1.0000e-005	0.3914
Single Family Housing	215527	20.5299	2.8400e-003	5.9000e-004	20.7756
Total		**26.6326**	**3.6800e-003**	**7.6000e-004**	**26.9513**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	60007.6	5.7160	7.9000e-004	1.6000e-004	5.7844
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	4060	0.3867	5.0000e-005	1.0000e-005	0.3914
Single Family Housing	215527	20.5299	2.8400e-003	5.9000e-004	20.7756
Total		**26.6326**	**3.6800e-003**	**7.6000e-004**	**26.9513**

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	0.3456	5.7300e-003	0.2903	3.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	3.2453	3.2453	5.1000e-004	5.0000e-005	3.2731
Unmitigated	0.3456	5.7300e-003	0.2903	3.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	3.2453	3.2453	5.1000e-004	5.0000e-005	3.2731

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	0.0517					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2850					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.8000e-004	2.3900e-003	1.0200e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7714	2.7714	5.0000e-005	5.0000e-005	2.7879
Landscaping	8.6800e-003	3.3300e-003	0.2893	2.0000e-005		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	0.4739	0.4739	4.5000e-004	0.0000	0.4852
Total	**0.3456**	**5.7200e-003**	**0.2903**	**4.0000e-005**		**1.8000e-003**	**1.8000e-003**		**1.8000e-003**	**1.8000e-003**	**0.0000**	**3.2453**	**3.2453**	**5.0000e-004**	**5.0000e-005**	**3.2731**

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	0.0517					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2850					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.8000e-004	2.3900e-003	1.0200e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7714	2.7714	5.0000e-005	5.0000e-005	2.7879
Landscaping	8.6800e-003	3.3300e-003	0.2893	2.0000e-005		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	0.4739	0.4739	4.5000e-004	0.0000	0.4852
Total	**0.3456**	**5.7200e-003**	**0.2903**	**4.0000e-005**		**1.8000e-003**	**1.8000e-003**		**1.8000e-003**	**1.8000e-003**	**0.0000**	**3.2453**	**3.2453**	**5.0000e-004**	**5.0000e-005**	**3.2731**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.7428	3.3500e-003	2.0100e-003	3.4248
Unmitigated	2.7428	3.3500e-003	2.0100e-003	3.4248

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	0.781848 / 0.492904	0.8439	1.0300e-003	6.2000e-004	1.0538
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.75916 / 1.10903	1.8988	2.3200e-003	1.3900e-003	2.3710
Total		**2.7428**	**3.3500e-003**	**2.0100e-003**	**3.4248**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	0.781848 / 0.492904	0.8439	1.0300e-003	6.2000e-004	1.0538
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.75916 / 1.10903	1.8988	2.3200e-003	1.3900e-003	2.3710
Total		**2.7428**	**3.3500e-003**	**2.0100e-003**	**3.4248**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.6852	0.4542	0.0000	19.0399
Unmitigated	7.6852	0.4542	0.0000	19.0399

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	5.52	1.1205	0.0662	0.0000	2.7760
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	32.34	6.5647	0.3880	0.0000	16.2638
Total		**7.6852**	**0.4542**	**0.0000**	**19.0399**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	5.52	1.1205	0.0662	0.0000	2.7760
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	32.34	6.5647	0.3880	0.0000	16.2638
Total		**7.6852**	**0.4542**	**0.0000**	**19.0399**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3: EMFAC2017 Calculations

CalEEMod EMFAC2017 Fleet Mix Input - 2021

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.499089	0.067187	0.21853	0.136331	0.027161	0.006402	0.01982	0.006061	0.003418	0.001514	0.013197	0.000511	0.000778

CalEEMod EMFAC2017 Emission Factors Input - 2021

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.005539	0.003551	0.003894	0.030875897	0.007013	0	0	0.067973	0
A	CH4_RUNEX	0.002342	0.003857	0.002972	0.003461	0.007925	0.00679	0.008632	0.163077191	0.007487	0.842673	0.332174	0.011777	0.00922
A	CH4_STREX	0.054972	0.063864	0.067267	0.077546	0.014864	0.009132	0.011062	2.93318E-06	0.014977	0.010826	0.26158	0.007396	0.023123
A	CO_IDLEX	0	0	0	0	0.189766	0.145417	0.379236	4.603696337	0.595779	0	0	2.645939	0
A	CO_RUNEX	0.610107	0.876302	0.715245	0.778992	0.675298	0.554697	0.658303	1.115582518	0.650035	5.260244	19.39604	1.099725	0.936325
A	CO_STREX	2.341208	2.446798	2.86158	3.209861	1.13295	0.714771	1.333229	0.029867448	1.584928	0.824296	9.137382	1.167659	2.148533
A	CO2_NBIO_IDLEX	0	0	0	0	8.910969	13.70091	70.40689	973.632059	111.3886	0	0	356.8974	0
A	CO2_NBIO_RUNEX	255.3007	296.5884	318.086	383.6391	812.1666	788.0628	1153.07	1766.75307	1374.86	1803.076	213.2371	1047.57	1530.669
A	CO2_NBIO_STREX	54.22135	63.33393	68.47941	81.97936	12.38014	8.763081	10.44468	0.224372629	13.27183	9.248196	61.23009	5.605339	18.57515
A	NOX_IDLEX	0	0	0	0	0.055668	0.092336	0.583892	5.929904668	0.716047	0	0	3.647097	0
A	NOX_RUNEX	0.040593	0.074553	0.061939	0.07195	0.606564	0.663114	2.385815	4.654205516	2.230976	3.44705	1.157112	5.645922	1.09582
A	NOX_STREX	0.19949	0.230659	0.272812	0.320563	0.330207	0.208484	1.199616	1.918360816	0.992925	0.0903	0.273312	0.581235	0.244062
A	PM10_IDLEX	0	0	0	0	0.000774	0.00133	0.00176	0.008849738	0.002438	0	0	0.004952	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.05968402	0.13034	0.07505	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009651	0.010643	0.012	0.034737411	0.012	0.031203	0.004	0.010511	0.013084
A	PM10_RUNEX	0.001461	0.001906	0.001557	0.001658	0.008799	0.012376	0.057773	0.057617474	0.033801	0.007756	0.00206	0.03177	0.0169
A	PM10_STREX	0.001914	0.002429	0.001954	0.002108	0.00026	0.000148	0.00013	1.4106E-06	0.000134	4.98E-05	0.003423	8.72E-05	0.000288
A	PM25_IDLEX	0	0	0	0	0.00074	0.001272	0.001684	0.008466902	0.002332	0	0	0.004738	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.025578866	0.05586	0.032164	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002413	0.002661	0.003	0.008684353	0.003	0.007801	0.001	0.002628	0.003271
A	PM25_RUNEX	0.001346	0.001754	0.001433	0.001529	0.008369	0.011813	0.055266	0.055124839	0.032328	0.007419	0.001926	0.030369	0.016124
A	PM25_STREX	0.00176	0.002233	0.001797	0.001939	0.000239	0.000136	0.000119	1.297E-06	0.000123	4.58E-05	0.003224	8.02E-05	0.000265
A	ROG_DIURN	0.036342	0.055762	0.038629	0.045217	0.00139	0.000847	0.000376	3.24545E-06	0.000788	0.000296	1.269203	0.000577	0.444578
A	ROG_HTSK	0.098742	0.129608	0.091812	0.103862	0.062301	0.039611	0.021268	0.000156208	0.0119	0.004791	0.597211	0.007517	0.044481
A	ROG_IDLEX	0	0	0	0	0.022306	0.017017	0.021686	0.361808328	0.05762	0	0	0.313661	0
A	ROG_RESTL	0.036045	0.051342	0.041183	0.04883	0.000848	0.000511	0.000228	2.088E-06	0.000394	0.000218	0.780635	0.000254	0.185868
A	ROG_RUNEX	0.009406	0.01662	0.011927	0.015123	0.08367	0.100815	0.147267	0.145452822	0.104961	0.012699	2.234514	0.117806	0.05743
A	ROG_RUNLS	0.216058	0.49362	0.326542	0.345053	0.444424	0.291199	0.126562	0.000722462	0.139064	0.028637	2.102478	0.06151	1.086592
A	ROG_STREX	0.256613	0.309457	0.311233	0.380715	0.074363	0.045585	0.059656	1.53461E-05	0.0747	0.053421	1.982543	0.042794	0.095239
A	SO2_IDLEX	0	0	0	0	8.66E-05	0.000131	0.000668	0.008744122	0.001057	0	0	0.003403	0
A	SO2_RUNEX	0.0001	0.002584	0.011009	0.003783	0.007939	0.007622	0.011009	0.015302015	0.013215	0.015214	0.00211	0.010038	0.015026
A	SO2_STREX	0	0	0.000103	0.000809	0.000123	8.67E-05	0.000103	2.22035E-06	0.000131	9.15E-05	0.000606	5.55E-05	0.000184
A	TOG_DIURN	0.036342	0.055762	0.038629	0.045217	0.00139	0.000847	0.000376	3.24545E-06	0.000788	0.000296	1.269203	0.000577	0.444578
A	TOG_HTSK	0.098742	0.129608	0.091812	0.103862	0.062301	0.039611	0.021268	0.000156208	0.0119	0.004791	0.597211	0.007517	0.044481
A	TOG_IDLEX	0	0	0	0	0.031577	0.023169	0.028975	0.426042532	0.071652	0	0	0.450142	0
A	TOG_RESTL	0.036045	0.051342	0.041183	0.04883	0.000848	0.000511	0.000228	2.088E-06	0.000394	0.000218	0.780635	0.000254	0.185868
A	TOG_RUNEX	0.013677	0.024215	0.017363	0.021442	0.103086	0.118548	0.171265	0.323042012	0.124587	0.86079	2.770018	0.147146	0.076372
A	TOG_RUNLS	0.216058	0.49362	0.326542	0.345053	0.444424	0.291199	0.126562	0.000722462	0.139064	0.028637	2.102478	0.06151	1.086592
A	TOG_STREX	0.280957	0.338814	0.340761	0.416801	0.081418	0.04991	0.065316	1.6802E-06	0.081787	0.058489	2.157734	0.046854	0.104275

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	3	0	39	0	37	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	421.2	0	740
Site Preparation	8	0	144	0	22	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1555.2	0	440
Grading	10	0	50	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	540	0	0
Trenching/Foundation	5	0	100	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1080	0	0
Building Construction	32	9	960	270	624	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	10368	1971	4555.2
Architectural Coating	6	0	1836	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	19828.8	0	0
Paving	13	0	2340	0	176	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	25272	0	1284.8

Number of Days Per Year					
2021	3/1/21	12/31/21	306		
2022	1/1/22	12/5/22	339		
			645	**462**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	3/1/2021	3/17/2021	5	13
Paving	3/3/2021	3/26/2021	5	18
Site Preparation	3/10/2021	3/16/2021	5	5
Grading	3/17/2021	4/13/2021	5	20
Trenching/Foundation	4/1/2021	5/12/2021	5	30
Building Construction	5/1/2021	7/4/2022	5	306
Architectural Coating	3/29/2022	12/5/2022	5	180

Summary of Construction Traffic Emissions (EMFAC2017)

CATEGORY	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
						Grams					
Hauling	1332.64	39414.18	11811.6206	114.933	2098.98	1074.92	3173.9	315.83	634.78	950.61	13239149.23
Vendor	359.87	6614.55	2155.7	24.393	589.33	373.18	962.5	88.68	214.43	303.11	2634268.314
Worker	4592.04	4137.68	52757.2	198.064	17660.49	2744.05	20404.5	2657.34	1141.30	3798.64	16643292.13
Total (g)	6284.56	50166.41267	66724.5217	337.3909612	20348.8038	4192.147846	24540.9516	3061.848438	1990.507205	5052.355643	32516709.67
Total (lbs)	13.86	110.60	147.10	0.74	44.86	9.2	54.10	6.75	4.39	11.14	71687.07372
Total (tons)	0.0069	0.055	0.074	0.000	0.022	0.0046	0.0271	0.0034	0.002	0.006	35.84
Total (MT)											32.52

YEAR											
						Tons					
2021 - 2022	0.0033	0.0262	0.0349	0.0002	0.0106	0.0022	0.0128	0.0016	0.0010	0.0026	15.4265
2022 -2023	0.0036	0.0291	0.0387	0.0002	0.0118	0.0024	0.0142	0.0018	0.0012	0.0029	17.0902

Summary of Construction Traffic Emissions (EMFAC2017) 1 Mile Trips

CATEGORY	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Grams						
Hauling	436.51	10739.62	4938.51667	20.658	256.84	138.20	395.0	38.65	84.06	122.70	2354183.562
Vendor	110.09	1652.64	853.7	3.957	80.73	51.94	132.7	12.15	30.16	42.31	428429.4096
Worker	4017.18	1487.67	17267.4	18.482	1635.23	263.85	1899.1	246.05	114.66	360.71	1833698.904
Total (g)	4563.79	13879.93314	23059.6125	43.09620832	1972.802	453.9964927	2426.79849	296.84402	228.8778634	525.7218834	4616311.876
Total (lbs)	10.06	30.60	50.84	0.10	4.35	1.0	5.35	0.65	0.50	1.16	10177.22559
Total (tons)	0.0050	0.015	0.025	0.000	0.002	0.0005	0.0027	0.0003	0.000	0.001	5.09
Total (MT)											4.62

YEAR										
					Tons					
2021 - 2022	0.0024	0.0073	0.0121	0.0000	0.0010	0.0002	0.0013	0.0002	0.0001	0.0003	2.1901
2022 -2023	0.0026	0.0080	0.0134	0.0000	0.0011	0.0003	0.0014	0.0002	0.0001	0.0003	2.4262

CalEEMod EMFAC2017 Fleet Mix Input - 2023

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.479119	0.070193	0.225986	0.142837	0.02811	0.006879	0.021591	0.006144	0.003257	0.001493	0.013003	0.000539	0.000849

CalEEMod EMFAC2017 Emission Factors Input - 2023

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.005074	0.003178	0.00397	0.031878574	0.006644	0	0	0.087655	0
A	CH4_RUNEX	0.001767	0.002817	0.002369	0.002517	0.006697	0.005938	0.001874	0.168411266	0.003088	0.843499	0.328042	0.010047	0.006808
A	CH4_STREX	0.046487	0.052593	0.057658	0.063773	0.012246	0.007282	0.010434	2.95572E-06	0.014832	0.011589	0.258109	0.008803	0.021514
A	CO_IDLEX	0	0	0	0	0.185918	0.141238	0.387382	5.206640438	0.608145	0	0	3.317362	0
A	CO_RUNEX	0.522776	0.706327	0.622201	0.632343	0.57409	0.490143	0.2477	0.899086849	0.375473	5.268368	18.72293	0.913898	0.586135
A	CO_STREX	2.201162	2.293745	2.697837	2.894146	1.037584	0.627422	1.204345	0.033119758	1.558668	0.823785	9.210173	1.369871	1.929089
A	CO2_NBIO_IDLEX	0	0	0	0	8.75479	13.52873	65.21084	954.7553111	102.0577	0	0	363.1241	0
A	CO2_NBIO_RUNEX	242.0773	282.9823	299.086	359.8382	781.4948	757.376	1084.559	1647.225439	1321.948	1802.912	212.962	1010.613	1479.739
A	CO2_NBIO_STREX	51.52412	60.35462	64.32145	76.49314	11.7078	8.04936	10.30213	0.253254462	13.36919	9.260686	60.40771	6.882728	17.5384
A	NOX_IDLEX	0	0	0	0	0.051299	0.083234	0.370709	5.378779518	0.421449	0	0	3.397188	0
A	NOX_RUNEX	0.031129	0.054424	0.047058	0.050538	0.453567	0.489404	1.289089	3.161210696	1.452664	3.445593	1.151567	4.858463	0.980718
A	NOX_STREX	0.173808	0.19623	0.226642	0.256571	0.288681	0.176437	1.644712	2.387915129	1.207804	0.09674	0.273452	0.65764	0.23628
A	PM10_IDLEX	0	0	0	0	0.000817	0.001377	0.000328	0.004244138	0.000137	0	0	0.0042	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.059816012	0.13034	0.07505	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009737	0.01071	0.012	0.034808665	0.012	0.031203	0.004	0.010292	0.013101
A	PM10_RUNEX	0.00131	0.001628	0.001415	0.001466	0.00778	0.011827	0.006086	0.022981894	0.007191	0.007754	0.002116	0.02734	0.013876
A	PM10_STREX	0.001738	0.002113	0.001799	0.001865	0.000239	0.00013	0.000126	1.75149E-06	0.000142	4.98E-05	0.003215	0.000106	0.000258
A	PM25_IDLEX	0	0	0	0	0.000782	0.001317	0.000314	0.004060539	0.000131	0	0	0.004018	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.025635434	0.05586	0.032164	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002434	0.002678	0.003	0.008702166	0.003	0.007801	0.001	0.002573	0.003275
A	PM25_RUNEX	0.001206	0.001497	0.001302	0.001352	0.007396	0.011289	0.005815	0.021987553	0.006868	0.007417	0.001976	0.02613	0.013234
A	PM25_STREX	0.001598	0.001943	0.001654	0.001715	0.00022	0.00012	0.000115	1.61043E-06	0.000131	4.58E-05	0.003018	9.73E-05	0.000237
A	ROG_DIURN	0.031253	0.044594	0.035226	0.040425	0.001207	0.00068	0.000317	3.54387E-06	0.000799	0.00047	1.225431	0.000558	0.320085
A	ROG_HTSK	0.086907	0.105417	0.081448	0.090016	0.053381	0.031667	0.018405	0.000174325	0.012256	0.008232	0.54113	0.00716	0.031984
A	ROG_IDLEX	0	0	0	0	0.020605	0.015709	0.019015	0.357715857	0.046244	0	0	0.397617	0
A	ROG_RESTL	0.031723	0.04262	0.038513	0.044519	0.000757	0.000428	0.000201	2.43147E-06	0.000408	0.00036	0.73591	0.000264	0.138309
A	ROG_RUNEX	0.006839	0.011758	0.009271	0.010177	0.077455	0.096064	0.015667	0.034751764	0.021313	0.012708	2.192298	0.102471	0.044464
A	ROG_RUNLS	0.199848	0.413187	0.305478	0.312574	0.375956	0.219053	0.105712	0.000819265	0.1446	0.054396	1.878993	0.045436	0.768018
A	ROG_STREX	0.211691	0.246028	0.261302	0.303901	0.060762	0.035893	0.054457	1.5446E-05	0.073611	0.057672	1.950915	0.050686	0.085133
A	SO2_IDLEX	0	0	0	0	8.5E-05	0.000129	0.000619	0.008536055	0.000969	0	0	0.00347	0
A	SO2_RUNEX	0.0001	0.00255	0.010355	0.003512	0.007633	0.007319	0.010355	0.014077158	0.012707	0.01521	0.002107	0.009705	0.014524
A	SO2_STREX	0	0	0.000102	0.000748	0.000116	7.97E-05	0.000102	2.50616E-06	0.000132	9.16E-05	0.000598	6.81E-05	0.000174
A	TOG_DIURN	0.031253	0.044594	0.035226	0.040425	0.001207	0.00068	0.000317	3.54387E-06	0.000799	0.00047	1.225431	0.000558	0.320085
A	TOG_HTSK	0.086907	0.105417	0.081448	0.090016	0.053381	0.031667	0.018405	0.000174325	0.012256	0.008232	0.54113	0.00716	0.031984
A	TOG_IDLEX	0	0	0	0	0.029032	0.021192	0.02612	0.422580329	0.05892	0	0	0.573158	0
A	TOG_RESTL	0.031723	0.04262	0.038513	0.044519	0.000757	0.000428	0.000201	2.43147E-06	0.000408	0.00036	0.73591	0.000264	0.138309
A	TOG_RUNEX	0.009943	0.017143	0.013491	0.014756	0.094085	0.111894	0.020063	0.207509464	0.028295	0.861631	2.733575	0.127565	0.05782
A	TOG_RUNLS	0.199848	0.413187	0.305478	0.312574	0.375956	0.219053	0.105712	0.000819265	0.1446	0.054396	1.878993	0.045436	0.768018
A	TOG_STREX	0.231774	0.269369	0.286093	0.332731	0.066526	0.039298	0.059624	1.69114E-05	0.080595	0.063144	2.123956	0.055495	0.09321

CalEEMod EMFAC2017 Fleet Mix Input - 2030

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.439373	0.076262	0.240335	0.155302	0.0302	0.007858	0.025976	0.006311	0.002957	0.00143	0.012414	0.000613	0.000969

CalEEMod EMFAC2017 Emission Factors Input - 2030

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.003986	0.002442	0.003901	0.035131351	0.006786	0	0	0.158711	0
A	CH4_RUNEX	0.000852	0.001199	0.001311	0.00124	0.004485	0.004916	0.000937	0.194137316	0.001736	1.753545	0.321443	0.005719	0.004067
A	CH4_STREX	0.027995	0.030375	0.036629	0.037086	0.007391	0.004131	0.008528	2.75285E-06	0.013378	0.008063	0.251027	0.013855	0.018813
A	CO_IDLEX	0	0	0	0	0.17763	0.133247	0.380682	5.462542355	0.673868	0	0	5.80684	0
A	CO_RUNEX	0.38385	0.449439	0.477534	0.458815	0.395104	0.439535	0.137795	1.060042122	0.215989	13.24814	17.75932	0.518437	0.217504
A	CO_STREX	1.729372	1.837412	2.255504	2.243412	0.858889	0.486179	0.872262	0.044453299	1.342846	0.821747	9.386142	2.016593	1.589632
A	CO2_NBIO_IDLEX	0	0	0	0	8.079577	12.61932	55.53125	860.0795257	104.9894	0	0	372.7606	0
A	CO2_NBIO_RUNEX	211.7346	252.6221	258.0227	309.5606	689.792	670.1618	958.8152	1405.743927	1195.474	1616.163	212.5811	883.0362	1315.392
A	CO2_NBIO_STREX	44.87769	53.59628	55.03331	64.68695	9.940355	6.489172	8.663679	0.34937093	11.93019	7.489838	58.78275	11.08551	15.05823
A	NOX_IDLEX	0	0	0	0	0.040506	0.063426	0.285781	5.005792808	0.4738	0	0	2.284358	0
A	NOX_RUNEX	0.018181	0.025489	0.025605	0.024058	0.183135	0.213543	1.305825	2.726806679	1.491679	0.672477	1.144949	2.365155	0.842357
A	NOX_STREX	0.12348	0.136613	0.146271	0.15042	0.202777	0.117445	1.670496	2.401347627	1.221337	0.066175	0.273196	0.990806	0.220861
A	PM10_IDLEX	0	0	0	0	0.000916	0.001474	0.000116	0.002738041	0.000156	0	0	0.001799	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.060218687	0.13034	0.07505	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009894	0.010825	0.012	0.035029144	0.012	0.031203	0.004	0.009695	0.013156
A	PM10_RUNEX	0.000873	0.001004	0.000996	0.000971	0.005896	0.012009	0.00632	0.021830157	0.008077	0.00493	0.002218	0.014432	0.009129
A	PM10_STREX	0.001229	0.001391	0.001314	0.001284	0.000201	0.000107	0.000113	3.44186E-06	0.000146	9.08E-05	0.003013	0.000189	0.000223
A	PM25_IDLEX	0	0	0	0	0.000876	0.00141	0.000111	0.002619594	0.000149	0	0	0.001721	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.025808009	0.05586	0.032164	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002474	0.002706	0.003	0.008757286	0.003	0.007801	0.001	0.002424	0.003289
A	PM25_RUNEX	0.000803	0.000924	0.000917	0.000895	0.005597	0.011466	0.00604	0.020885574	0.007714	0.004714	0.002068	0.013773	0.008697
A	PM25_STREX	0.00113	0.001279	0.001208	0.001181	0.000185	9.87E-05	0.000104	3.16466E-06	0.000134	8.34E-05	0.002814	0.000174	0.000205
A	ROG_DIURN	0.020899	0.026166	0.029262	0.034946	0.000855	0.000423	0.000215	6.30401E-06	0.000697	0.000135	1.211607	0.001024	0.162772
A	ROG_HTSK	0.060613	0.065951	0.062747	0.06946	0.038129	0.018293	0.012334	0.00032247	0.011675	0.001673	0.490116	0.011684	0.014309
A	ROG_IDLEX	0	0	0	0	0.016705	0.013194	0.017988	0.358082866	0.050724	0	0	0.707161	0
A	ROG_RESTL	0.022062	0.027928	0.033593	0.039866	0.00059	0.000304	0.000155	4.76063E-06	0.000385	8.4E-05	0.713444	0.000569	0.082497
A	ROG_RUNEX	0.002935	0.004439	0.0048	0.00456	0.066593	0.091611	0.01069	0.030162406	0.014725	0.025667	2.134664	0.057034	0.030394
A	ROG_RUNLS	0.167086	0.27842	0.260943	0.256642	0.291514	0.109021	0.06354	0.001590977	0.145084	0.009452	1.403908	0.077014	0.251023
A	ROG_STREX	0.120212	0.129657	0.157885	0.163786	0.034932	0.019233	0.041593	1.43663E-05	0.065349	0.038467	1.8899	0.078938	0.069343
A	SO2_IDLEX	0	0	0	0	7.83E-05	0.000121	0.000527	0.007595194	0.000996	0	0	0.003587	0
A	SO2_RUNEX	9.16E-05	0.002421	0.009151	0.002858	0.006728	0.006467	0.009151	0.01166111	0.011484	0.010159	0.002104	0.008536	0.012904
A	SO2_STREX	0	0	8.57E-05	0.000598	9.84E-05	6.42E-05	8.57E-05	3.45731E-06	0.000118	7.41E-05	0.000582	0.00011	0.000149
A	TOG_DIURN	0.020899	0.026166	0.029262	0.034946	0.000855	0.000423	0.000215	6.30401E-06	0.000697	0.000135	1.211607	0.001024	0.162772
A	TOG_HTSK	0.060613	0.065951	0.062747	0.06946	0.038129	0.018293	0.012334	0.00032247	0.011675	0.001673	0.490116	0.011684	0.014309
A	TOG_IDLEX	0	0	0	0	0.023206	0.017394	0.024835	0.426245447	0.06396	0	0	1.026146	0
A	TOG_RESTL	0.022062	0.027928	0.033593	0.039866	0.00059	0.000304	0.000155	4.76063E-06	0.000385	8.4E-05	0.713444	0.000569	0.082497
A	TOG_RUNEX	0.004264	0.006476	0.006966	0.006594	0.078009	0.105237	0.01288	0.228314045	0.018506	1.790343	2.681801	0.071055	0.037597
A	TOG_RUNLS	0.167086	0.27842	0.260943	0.256642	0.291514	0.109021	0.06354	0.001590977	0.145084	0.009452	1.403908	0.077014	0.251023
A	TOG_STREX	0.131617	0.141959	0.172864	0.179325	0.038246	0.021057	0.045539	1.57293E-05	0.071549	0.042116	2.05874	0.086427	0.075922

Attachment 4: Construction Health Risk Calculations

Stanford Wedge Housing Development, Portola Valley, CA

DPM Emissions and Modeling Emission Rates - Without Controls

Construction Year	Activity	Area Source	DPM Emissions (ton/year)	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2021-2022	Construction	DPM_CONST	0.0652	130.5	0.03972	5.00E-03	44303.6	1.13E-07
2022-2023	Construction	DPM_CONST	0.0391	78.1	0.0238	0.0030	44304	6.764E-08

hr/day = 9 (7am - 4pm)
days/yr = 365
hours/year = 3285

Stanford Wedge Housing Development, Portola Valley, CA

PM2.5 Fugitive Dust Emissions for Modeling - Without Controls

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2021-2022	Construction	FUG25_CONST	0.0424	84.7	0.02579	3.25E-03	44303.6	7.33E-08
2022-2023	Construction	FUG25_CONST	0.0002	0.3	0.0001	0.00001	44304	2.978E-10

Construction Hours

0.002059101

hr/day = 9 (7am - 4pm)
days/yr = 365
hours/year = 3285

Stanford Wedge Housing Development, Portola Valley, CA - Construction Impacts - Without Controls
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site SF-Home - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

		Infant/Child - Exposure Information				Infant/Child	Adult - Exposure Information			Adult		Maximum	
	Exposure				Age	Cancer	Modeled		Age	Cancer			
Exposure	Duration		DPM Conc (ug/m3)		Sensitivity	Risk	DPM Conc (ug/m3)		Sensitivity	Risk		Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	HI	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2021-2022	0.0168	10	0.23							
1	1	0 - 1	2021-2022	0.0168	10	2.77	2021-2022	0.0168	1	0.05	0.003	0.0130	0.0299
2	1	1 - 2	2022-2023	0.0101	10	1.66	2022-2023	0.0101	1	0.03	0.002	0.0001	0.010
3	1	2 - 3	2023	0.0000	3	0.00	2023	0.0000	1	0.00			
4	1	3 - 4	2024	0.0000	3	0.00	2024	0.0000	1	0.00			
5	1	4 - 5	2025	0.0000	3	0.00	2025	0.0000	1	0.00			
6	1	5 - 6	2026	0.0000	3	0.00	2026	0.0000	1	0.00			
7	1	6 - 7	2027	0.0000	3	0.00	2027	0.0000	1	0.00			
8	1	7 - 8	2028	0.0000	3	0.00	2028	0.0000	1	0.00			
9	1	8 - 9	2029	0.0000	3	0.00	2029	0.0000	1	0.00			
10	1	9 - 10	2030	0.0000	3	0.00	2030	0.0000	1	0.00			
11	1	10 - 11	2031	0.0000	3	0.00	2031	0.0000	1	0.00			
12	1	11 - 12	2032	0.0000	3	0.00	2032	0.0000	1	0.00			
13	1	12 - 13	2033	0.0000	3	0.00	2033	0.0000	1	0.00			
14	1	13 - 14	2034	0.0000	3	0.00	2034	0.0000	1	0.00			
15	1	14 - 15	2035	0.0000	3	0.00	2035	0.0000	1	0.00			
16	1	15 - 16	2036	0.0000	3	0.00	2036	0.0000	1	0.00			
17	1	16-17	2037	0.0000	1	0.00	2037	0.0000	1	0.00			
18	1	17-18	2038	0.0000	1	0.00	2038	0.0000	1	0.00			
19	1	18-19	2039	0.0000	1	0.00	2039	0.0000	1	0.00			
20	1	19-20	2040	0.0000	1	0.00	2040	0.0000	1	0.00			
21	1	20-21	2041	0.0000	1	0.00	2041	0.0000	1	0.00			
22	1	21-22	2042	0.0000	1	0.00	2042	0.0000	1	0.00			
23	1	22-23	2043	0.0000	1	0.00	2043	0.0000	1	0.00			
24	1	23-24	2044	0.0000	1	0.00	2044	0.0000	1	0.00			
25	1	24-25	2045	0.0000	1	0.00	2045	0.0000	1	0.00			
26	1	25-26	2046	0.0000	1	0.00	2046	0.0000	1	0.00			
27	1	26-27	2047	0.0000	1	0.00	2047	0.0000	1	0.00			
28	1	27-28	2048	0.0000	1	0.00	2048	0.0000	1	0.00			
29	1	28-29	2049	0.0000	1	0.00	2049	0.0000	1	0.00			
30	1	29-30	2050	0.0000	1	0.00	2050	0.0000	1	0.00			
Total Increased Cancer Risk						**4.7**				**0.08**			

* Third trimester of pregnancy