BAYWOOD VILLAGE
AIR QUALITY AND GREENHOUSE GAS ASSESSMENT

Petaluma, California

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Introduction

The purpose of this report is to address air quality, community health risk, and greenhouse gas (GHG) impacts associated with the Baywood Village project located in Petaluma, California. The air quality and GHG emissions from this project would be associated with the construction of the new buildings and infrastructure and operation of the project. Air pollutants and GHG emissions associated with construction and operation of the project were predicted using models. In addition, the potential construction health risk impact to nearby sensitive receptors and the impact of existing toxic air contaminant (TAC) sources affecting the proposed residences were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The approximately 14.45-acre project site is be located on the east side of the existing southern terminus of Casa Grande Road. The site is currently vacant. The project proposes to development 299 apartments in 27 buildings on the currently vacant site. There would be 209 garage parking spaces and 244 parking lot spaces, for a total of 453 parking spaces.

Setting

The project is located in southern section of Sonoma County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (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, reduced lung function, and increase coughing and chest discomfort.

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

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

Toxic Air Contaminants

Toxic air contaminants (TAC) 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 complex 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.

Regulatory Setting

Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards. California also has the ability to set motor vehicle emission standards and standards for fuel used in California, as long as they are the same or more stringent than the federal standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_X and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[2]

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The new standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500

[2] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel (from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel (ULSD), is currently required for use by all vehicles in the U.S.

All of the above federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.[3] In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.
CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO_X.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County,

[3] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County, and southern Sonoma County.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[4] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. The detailed community risk modeling methodology used in this assessment is contained in *Attachment 1*.

City of Petaluma General Plan 2025

The City of Petaluma General Plan 2025 includes policies and programs to reduce exposure of the City's sensitive population to exposure of air pollution, TACs, and GHG emissions. The following policies and programs are applicable to the proposed project:

4-P-15 Improve air quality by reducing emissions from stationary point sources of air pollution (e.g. equipment at commercial and industrial facilities) and stationary area sources (e.g. wood-burning fireplaces & gas powered lawn mowers) which cumulatively emit large quantities of emissions.

A. Continue to work with the Bay Area Air Quality Management District to achieve emissions reductions for non-attainment pollutants; including carbon monoxide, ozone, and PM10, by implementation of air pollution control measures as required by State and federal statutes. The BAAQMD's CEQA Guidelines should be used as the foundation for the City's review of air quality impacts under CEQA.

B. Continue to use Petaluma's development review process and the CEQA regulations to evaluate and mitigate the local and cumulative effects of new development on air quality.

C. Continue to require development projects to abide by the standard construction dust abatement measures included in BAAQMD's CEQA Guidelines. These measures would reduce exhaust and particulate emissions from construction and grading activities.

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

D. Reduce emissions from residential and commercial uses by requiring the following:

- Use of high efficiency heating and other appliances, such as cooking equipment, refrigerators, and furnaces, and low NOx water heaters in new and existing residential units;
- Compliance with or exceed requirements of CCR Title 24 for new residential and commercial buildings;
- Incorporation of passive solar building design and landscaping conducive to passive solar energy use for both residential and commercial uses, i.e., building orientation in a south to southeast direction, encourage planting of deciduous trees on west sides of structures, landscaping with drought resistant species, and use of groundcovers rather than pavement to reduce heat reflection;
- Encourage the use of battery-powered, electric, or other similar equipment that does not impact local air quality for nonresidential maintenance activities;
- Provide natural gas hookups to fireplaces or require residential use of EPA-certified wood stoves, pellet stoves, or fireplace inserts. Current building code standards generally ban the installation of open-hearth, wood burning fireplaces and wood stoves in new construction. It does, however, allow for the use of low-polluting wood stoves and inserts in fireplaces approved by the federal Environmental Protection Agency, as well as fireplaces fueled by natural gas.

4-P-16 To reduce combustion emissions during construction and demolition phases, the contractor of future individual projects shall encourage the inclusion in construction contracts of the following requirements or measures shown to be equally effective:

- Maintain construction equipment engines in good condition and in proper tune per manufacturer's specification for the duration of construction;
- Minimize idling time of construction related equipment, including heavy-duty equipment, motor vehicles, and portable equipment;
- Use alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline);
- Use add-on control devices such as diesel oxidation catalysts or particulate filters;
- Use diesel equipment that meets the ARB's 2000 or newer certification standard for off-road heavy-duty diesel engines;
- Phase construction of the project;
- Limit the hours of operation of heavy-duty equipment.

4-P-24 Comply with AB 32 and its governing regulations to the full extent of the City's jurisdictional authority.

4-P-25 To the full extent of the City's jurisdictional authority, implement any additional adopted State legislative or regulatory standards, policies and practices designed to reduce greenhouse gas emissions, as those measures are developed.

4-P-26 Implement all measures identified in the municipal Climate Action Plan to meet the municipal target set in Resolution 2005-118 (20% below 2000 levels by 2010).

4-P-30 Continue to monitor new technology and innovative sustainable design practices for applicability to insure future development minimizes or eliminates the use of fossil fuel and GHG-emitting energy consumption.

City of Petaluma Greenhouse Gas Emissions Reduction Action Plan

The City of Petaluma's Greenhouse Gas Emissions Reduction Action Plan addresses emissions from municipal government activities and sources per Resolution 2002-117. The purpose of the plan is to identify and prioritize programs, projects, and procedural policies that will help the City government achieve the municipal GHG emission goals of Resolution 2005-118 by more than 20 percent below 2000 levels by 2015. The plan does not apply to land development projects.

The Sonoma County Regional Climate Action Plan, developed in 2016, includes 2020 GHG emission reduction measures for Petaluma.[5] This plan is an advisory document that the City uses to assist in achieving reduction of GHG emissions. Development projects within the City of Petaluma are encouraged to comply with the intent of the Climate Action Plan and realize GHG reductions through voluntary application of reduction measures. The reduction measures are categorized by goals for State and Regional Measures and then by Local Measures. Under a Business as Usual scenario, emissions in Petaluma would be 542,970 metric tons (MT) in 2020. State measures (e.g., vehicle reduction, cap and trade, renewable portfolios) would reduce these emissions by 119,660 MT. Regional measures are anticipated to reduce emissions by another 28,200 MT and Local Measures would reduce emissions by 18,490 MT. Under this plan, Petaluma's GHG emissions would be reduced to 376,620 MT in 2020. These emissions would be 31 percent below business as usual projection and below estimated 1990 emission of 387,020 MT.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. The closest sensitive receptors to the project site are the multi-family residences north of the project site. The project would include new sensitive receptors.

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

[5] Sonoma County Regional Climate Protection Authority. 2016. *Climate Action 2020 and Beyond*. July.

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 1,000-foot zone of influence)**	
Excess Cancer Risk	>10.0 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 or 4.6 metric tons per capita (for 2020) 660 metric tons annually or 2.8 metric tons per capita (for 2030) *		

Note: ROG = reactive organic gases, 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.

Air Quality Impacts and Mitigation Measures

Impact 1: 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

The Bay Area is considered a non-attainment area for ground-level ozone and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-

attainment for 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. As part of an effort to attain and maintain ambient air quality standards for ozone and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NO_X), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction and operation of the site assuming full build-out of the project. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The model output from CalEEMod is included as *Attachment 2*.

Construction Period Emissions

CalEEMod provided annual emissions for construction. CalEEMod 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. A construction build-out scenario, including equipment list and schedule, was based on information provided by the project applicant.

The proposed project land uses were input into CalEEMod, which included: 299 dwelling units entered as "Apartment Mid Rise", 209 spaces entered as "Enclosed Parking Structures", and 244 spaces entered as "Parking Lot". In addition, 42,000 cubic yards (cy) of imported soil for the grading phase, 214 one-way cerement truck trips during the building construction phase, and 464 one-way asphalt truck trips during the paving phase was estimated and entered into the model.

The construction schedule assumed that the project would be built out over a period of approximately 18 months, beginning in June 2019. Based on the applicant provided construction schedule and equipment usage assumptions, there were an estimated 387 construction workdays. Average daily emissions were computed by dividing the total construction emissions by the number of construction days. Table 2 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 2, predicted construction period emissions would not exceed the BAAQMD significance thresholds.

Table 2. Construction Period Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total construction emissions (tons)	2.8 tons	5.6 tons	0.2 tons	0.2 tons
Average daily emissions (pounds)[1]	**14.5 lbs./day**	**29.1 lbs./day**	**1.1 lbs./day**	**1.0 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**

[1]Assumes 387 workdays.

Additionally, 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*.

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 the project could possibly be constructed and begin operating would be 2021. Emissions associated with build-out later than 2021 would be lower.

Traffic

CalEEMod allows the user to enter specific vehicle trip generation rates, which were input to the model using the daily trip generation rate provided in the project trip generation table.[6] For each land use type, the forecasted daily trip rate with trip reductions applied was divided by the quantity of that land use to identify the weekday daily trip rate. The Saturday and Sunday trip rates were assumed to be the weekday rate adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips. The default trip lengths and trip types specified by CalEEMod were used.

Energy

CalEEMod defaults for energy use were used, which include the 2016 Title 24 Building Standards. Indirect emissions from electricity were computed in CalEEMod. The model has a default rate of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. The rate was adjusted to account for PG&E's projected 2020 CO_2

[6] W-Trans, *Draft Traffic Impact Study for the Baywood Village Project*, July 2018.

intensity rate. This 2020 rate is based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. The derived 2020 rate for PG&E was estimated at 290 pounds of CO_2 per megawatt of electricity delivered.[7]

Other Inputs

Wood-burning stoves and fireplaces are not allowed in new developments in the Bay Area; however, it was assumed that residential units could contain gas-powered fireplaces. Default model assumptions for emissions associated with solid waste generation and water/wastewater use were applied to the project. Water/wastewater use were changed to 100% aerobic conditions to represent wastewater treatment plant conditions. There are no developments or land uses currently on the project site; therefore, the existing land use emissions would not exist.

As shown in Table 3, operational emissions would not exceed the BAAQMD significance thresholds. This would be considered a *less-than-significant* impact.

Table 3. Operational Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2021 Project Operational Emissions (*tons/year*)	2.2 tons	3.7 tons	1.9 tons	0.5 tons
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	***No***	***No***	***No***	***No***
2021 Project Operational Emissions (*lbs/day*)[1]	12.0 lbs.	20.4 lbs.	10.3 lbs.	3.0 lbs.
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	***No***	***No***	***No***	***No***

Notes: [1] Assumes 365-day operation.

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

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

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

[7] Pacific Gas & Electric, 2015. *Greenhouse Gas Emission Factors: Guidance for PG&E Customers*. November.

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 included above would be consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

Impact 2: Expose sensitive receptors to substantial pollutant concentrations?

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

The project would introduce new residents that are sensitive receptors. In addition, temporary project construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors. A construction health risk assessment was prepared to address construction impacts caused by the project. 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.

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

Operational Community Health Risk Impacts – Project Exposure

Community health risk assessments typically look at all substantial sources of TACs that can affect new sensitive receptors that are located within 1,000 feet of a project site. These sources can include freeways or highways, busy surface streets, rail lines, and stationary sources identified by BAAQMD. Traffic on highways and high-volume roadways are a source of TAC emissions that may adversely affect sensitive receptors in close proximity to the roadways. A review of the project area indicates that traffic on State Route 116 (S.R.116) would exceed 10,000 vehicles per day. Other nearby streets are assumed to have less than 10,000 vehicles per day. A review of BAAQMD's stationary source Google Earth map tool identified four sources with the potential to affect the project site. Figure 1 shows all the sources affecting the project site. The roadway screening and stationary sources calculations are contained in *Attachment 3.* Concentrations and community risk impacts from these sources upon the project are reported in Table 4.

Figure 1. Project Site and Nearby TAC and $PM_{2.5}$ Sources

Highway: S.R. 116

BAAQMD provides a *Highway Screening Analysis Google Earth Map* tool to identify estimated risk and hazard impacts from highways throughout the Bay Area. Cumulative risk, hazard, and $PM_{2.5}$ impacts at various distances from the highway are estimated for different segments of the highways. The tool uses the average annual daily traffic (AADT) count, fleet mix and other modeling parameters specific to that segment of the highway. Impacts from Link 742 (6ft elevation) for S.R. 116, in which the project site was approximately 800 feet south of S.R. 116, were identified using this tool.

The cancer risk identified using the BAAQMD tool was adjusted using a factor of 1.3744 to account for new Office of Environmental Health Hazard Assessment (OEHHA) guidance. This factor was provided by BAAQMD for use with their CEQA screening tools that are used to predict cancer risk.[8] The predicted impacts from S.R. 116 do not exceed the BAAQMD thresholds of greater than 10 chances per million for cancer risk, 0.3 $\mu g/m^3$ for $PM_{2.5}$ exposure, and 1.0 for HI. Concentration levels and community risk impacts from this source upon the project is reported in Table 4.

Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*. This mapping tool uses Google Earth and identified the location of four stationary sources and their estimated risk and hazard impacts. A Stationary Source Information Form (SSIF) containing the identified sources was prepared and submitted to BAAQMD. They provided updated risk levels, emissions and adjustments to account for new OEHHA guidance.[9] The adjusted risk values were then adjusted with the appropriate distance multiplier values provided by BAAQMD or the emissions information was used in refined modeling.

Four stationary sources were identified (Plant #111823, #109860, #19465, and #22419) with two sources being gas dispensing facilities (GDF), one source being a diesel generator, and one source being a coffee roaster. The emissions data for all these stationary sources were provided by BAAQMD and adjusted for distance based on BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines* or *Distance Adjustment Multiplier Tool for Gasoline Dispensing Facilities* when appropriate. After using these screening factors, the predicted impacts from three of the four stationary sources did not exceed the BAAQMD thresholds of greater than 10 chances per million for cancer risk, 0.3 $\mu g/m^3$ for $PM_{2.5}$ exposure, and 1.0 for HI. Even after using the distance adjustment multiplier, the nearby diesel generator *(*Plant #19465) cancer risk screening levels were above the threshold. The BAAQMD *Risk and Hazard Emissions Screening Calculator (Beta Version)* was used with the 2015 daily plant emissions information to calculate a more refined risk impact from this plant, which reduces the impacts to below the thresholds. Concentration levels and community risk impacts from these sources upon the project are reported in Table 4.

[8] Correspondence with Alison Kirk, BAAQMD, November 23, 2015.
[9] Correspondence with Areana Flores, BAAQMD, January 17, 2019.

Summary of Operational Impacts

Maximum excess cancer risks at the project site were calculated from the maximum modeled long-term average DPM concentrations using methods recommended by BAAQMD, described in *Attachment 1.* Details of the emission calculations, dispersion modeling and cancer risk calculations are contained in *Attachment 3*. Community risk impacts from these sources upon the project are reported in Table 4. All sources would not exceed the single-source or cumulative-source thresholds at the new project residences. This is a *less-than-significant* impact.

Table 4. Community Risk Impact to New Project Residences

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
S.R. 116 at 800 feet South, Link 742 (6ft elevation)	3.7	0.02	<0.01
Plant #111824 (GDF) at 1,000 feet	0.8	N/A	<0.01
Plant #109860 (GDF) at 375 feet	1.2	N/A	0.01
Plant #19465 (generator) at 615 feet	<0.1	0.01	<0.01
Plant #22419 (coffee roaster) at 900 feet	<0.1	<0.01	<0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Significant?	***No***	***No***	***No***
Cumulative Total	<5.9	<0.04	<0.05
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Significant?	***No***	***No***	***No***

Project Construction Activity

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to 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 issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. 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 $PM_{2.5}$.[10] This assessment included dispersion modeling to predict the off-site concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages of 0.1929 tons (386 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

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

while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.0171 tons (34 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[11] 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 6 meters (19.7 feet) was used for the area source. 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 2 meters (6.6 feet) was used for the area source. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 8 a.m. to 4 p.m., when the majority of construction activity would occur.

The only meteorological data measured in Petaluma is not suitable for use with AERMOD. These data were collected and processed by BAAQMD for the ISCST3 model that was the predecessor to AERMOD. While BAAQMD's modeling guidelines allow the use of ISCST3 for CEQA projects (see footnote 12), the District prefers the use of AERMOD. To use AERMOD, a meteorological data set had to be developed from diagnostic modeling information. The AERMOD modeling used a five-year data set (2013-2017) of hourly meteorological data for Petaluma that was prepared by Lakes Environmental. These data were developed using prognostic meteorological data from the Weather Research and Forecasting ("WRF") grid model for the Petaluma area and processed for use with AERMOD using the U.S. EPA Mesoscale Model Interface Program ("MMIF") following U.S. EPA guidance. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2019-2020 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 1.5 meters (5 feet), 4.5 meters (15 feet), and 7.6 meters (25 feet) were used to represent the breathing heights of residents on the first, second, and third floors of the nearby multi-family residential units.

Predicted Cancer Risk and Hazards

Figure 2 shows the location where the maximum-modeled DPM and $PM_{2.5}$ concentrations occurred. The maximum concentrations occurred on the second floor (4.5 meters) of the southwest corner unit of the adjacent multi-family residential building to the north of the project site. Using the maximum annual modeled DPM concentration, the maximum increased cancer risk at the location of the maximally exposed individual (MEI) was calculated using BAAQMD recommended methods. The cancer risk calculations are based on applying the BAAQMD

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

recommended age sensitivity factors to the TAC concentrations. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. BAAQMD-recommended exposure parameters were used for the cancer risk calculations, as described in *Attachment 1*. Infant and adult exposures were assumed to occur at all residences through the entire construction period.

Results of this assessment indicate that the maximum increased residential cancer risks without any mitigation or construction emissions control would be 25.0 in one million for an infant exposure and 0.4 in one million for an adult exposure. The maximum residential excess cancer risk would exceed the significance threshold of 10.0 in one million.

Predicted Annual $PM_{2.5}$ Concentration

The maximum-modeled annual $PM_{2.5}$ concentration, which is based on combined exhaust and fugitive dust emissions, was 0.09 $\mu g/m^3$. This maximum annual $PM_{2.5}$ concentration would not exceed the BAAQMD significance threshold of greater than 0.3 $\mu g/m^3$.

Non-Cancer Hazards

The maximum modeled annual residential DPM concentration (i.e., from construction exhaust) was 0.0830 $\mu g/m^3$. The maximum computed HI based on this DPM concentration is 0.02, which does not exceed the BAAQMD significance criterion of a HI greater than 1.0.

The project would have a *significant* impact with respect to community risk caused by project construction activities, since the maximum cancer risk is above the single-source thresholds of 10.0 per million. *Attachment 4* includes the construction emission calculations and source information used in the modeling and the cancer risk calculations.

Figure 2. Project Construction Site and Locations of Off-Site Sensitive Receptors and TAC Impacts

Operational Community Risks

Operationally, the project is not considered a source of TACs or air pollutants that would lead to significant long-term community risk impacts. The project would not generate diesel truck traffic or have stationary sources of air pollutants that emit TACs.

Cumulative Impact on Construction MEI

The cumulative impacts of TAC emissions from construction of the project, traffic on S.R. 116, and the stationary sources on the construction MEI have been summarized in Table 5. As shown in Table 5, the sum of impacts from combined sources at the construction MEI would be below the cumulative source thresholds.

Table 5. Impacts from Combined Sources at Construction MEI

Source		Maximum Cancer Risk (per million)	$PM_{2.5}$ concentration ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	**25.0 (infant)**	0.09	0.02
	Mitigated	3.4 (infant)	0.02	<0.01
BAAQMD Threshold - Single Source		*10.0*	*0.3*	*1.0*
Exceed threshold?		**Yes (Unmitigated) No (Mitigated)**	**No**	**No**
S.R. 116 at 1,000 feet South, Link 742 (6ft elevation)		2.9	0.02	<0.01
Plant #111824 (GDF) at 1,000 feet		0.3	N/A	<0.01
Plant #109860 (GDF) at 915 feet		<0.1	N/A	<0.01
Plant #19465 (generator) at 875 feet		<0.1	<0.01	<0.01
Plant #22419 (coffee roaster) at 1,000 feet		0.1	<0.01	<0.01
Combined Sources	*Unmitigated*	<28.5	<0.13	<0.07
	Mitigated	<6.9	<0.06	<0.06
BAAQMD Threshold – Combined Sources		*100*	*0.8*	*10.0*
Exceed threshold?		**No**	**No**	**No**

Mitigation Measure AQ-2: **Selection of equipment during construction to minimize emissions. Such equipment selection would include the following:**

The project shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average 60-percent reduction in DPM exhaust emissions or greater. One feasible plan to achieve this reduction would include the following:

- All diesel-powered off-road equipment, larger than 25 horsepower, operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA particulate matter emissions standards for Tier 2 engines that include CARB-certified Level 3 Diesel Particulate Filters (DPF)[12] or equivalent. Equipment that meets U.S. EPA Tier 3 standards with DPF 3 filters for particulate matter or engines meeting Tier 4 particulate matter standards would meet this requirement.

Effectiveness of Mitigation Measure AQ-2

Implementation of Mitigation Measure AQ-2 is considered to reduce on-site diesel exhaust emissions by over 85 percent. This would reduce the infant cancer risk such that the mitigated risk would be less than 3.4 in one million, which are less than the BAAQMD significance threshold. After implementation of these mitigation measures, the project would have a *less-than-significant* impact with respect to community risk caused by construction activities.

[12] See http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

Greenhouse Gases Assessment

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 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

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

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

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

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

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

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

SB 350 Renewable Portfolio Standards

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

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

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

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

term goal). Key features of this plan are:

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

Significance Thresholds

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 by adjusting BAAQMD's recommended 2020 threshold for 2030, assuming a reduction of 40 percent in 1990 levels that are assumed to be similar to 2020 levels. The 2030 660 bright-line threshold is a 40 percent reduction of the 2020 1,100 MT CO_2e/year threshold.

Greenhouse Gas Emissions

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

Service Population Emissions

The project service population efficiency rate is based on the number of future residents. Based on the project's proposed 299 residential units and using the latest population data from the California Department of Finance which reports the average persons per household in Petaluma is 2.72 persons,[13] the number of future residents is estimated to be 814.

Construction Emissions

GHG emissions associated with construction were computed to be 1,256 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. Best management practices assumed to be incorporated into construction of the proposed project include but are not limited to: using local building materials of at least 10 percent and recycling or reusing at least 50 percent of construction waste or demolition materials.

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, annual net emissions resulting from operation of the proposed project are predicted to be 2,630 MT of CO_2e for the year 2021 and 2,165 MT of CO_{2e} for the year 2030. The 2030 emissions do exceed the 2030 "Substantial Progress" threshold of 660 MT of CO_{2e}/yr. The Service Population Emissions would be 3.2 for the year 2021 and 2.7 for the year 2030. The 2030 Service Population Emissions do not exceed the "Substantial Progress" efficiency metric of 2.8 MT CO_2e/year/service population.

To be considered significant, the project must exceed both the GHG significance threshold in metric tons per year and the service population significance threshold. This project does not exceed the 2030 service population significance threshold. Therefore, the project would have a *less-than-significant* impact regarding GHG emissions.

[13] State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011-2018*. Sacramento, California, May 2018.

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

Source Category	Proposed Project in 2021	Proposed Project in 2030
Area	16	16
Energy Consumption	370	370
Mobile	2,143	1,678
Solid Waste Generation	69	69
Water Usage	32	32
Total	2,630	2,165
Significance Threshold	***1,100 MT CO_2e/yr***	***660 MT CO_2e/yr***
Service Population Emissions	3.2	2.7
Significance Threshold	***4.6 in 2020***	***2.8 in 2030***
Significant (Exceed Both)?	***No***	***No***

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

Attachment 3 includes the screening community risk calculations from sources affecting the project site and construction MEI.

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.[14] 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.[15] This HRA used the recent 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.[16] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences). The modeling used a five-year data set (2013-2017) of hourly meteorological data for Petaluma that was prepared by *Lakes Environmental.* These data were developed using prognostic meteorological data from the Weather Research and Forecasting ("WRF") grid model for the Petaluma area and processed for use with AERMOD using the U.S. EPA Mesoscale Model Interface Program ("MMIF") following U.S. EPA guidance.

Recently, new U.S. EPA modeling guidelines (40 CFR Part 51, Appendix W, effective February 16, 2017) allows the use of prognostic meteorological data using the U.S. EPA's Mesoscale Model Interface Program ("MMIF") pre-processor to generate inputs for regulatory modeling applications using the meteorological preprocessor model ("AERMET") and AERMOD. Prognostic meteorological data can be used when (i) there is no representative National Weather Service station data available for use in developing AERMOD meteorological data, and (ii) site-specific data are not available. The U.S. EPA recommends using no fewer than three years of meteorological data for modeling when using prognostic modeled derived data for AERMOD. This new option now provides the opportunity to develop meteorological data suitable for AERMOD that are representative of the project site.

The Weather Research and Forecasting ("WRF") grid model was used to develop a 5-year data set (2013 through 2017) for meteorological conditions at the project site. The WRF model pulls in observations and archived meteorological model data from the region around the project site,

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[14] 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.

[15] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

[16] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

and uses the same physical equations that are used in weather forecasting to model the historical weather conditions at the specific project location. Development of this data set was performed by *Lakes Environmental* using the WRF model and the MMIF program to process data for input to the AERMOD meteorological data preprocessor, AERMET. The WRF modeling uses a nested grid with a 4-kilometer grid spacing at the highest resolution (inner grid).

Cancer Risk

Potential increased cancer risk from inhalation of TACs are 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 of exposure, and the exposure duration. 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). As recommended by the BAAQMD, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. 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).

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 that would 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)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

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 < 9	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	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	631	572	261
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

* 95th percentile breathing rates for 3rd trimester and infants and 80th percentile for children and adults.

Non-Cancer Hazards

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

Baywood Village, Petaluma - Sonoma-San Francisco County, Annual

Baywood Village, Petaluma

Sonoma-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	209.00	Space	0.00	83,600.00	0
Parking Lot	244.00	Space	2.20	97,600.00	0
Apartments Mid Rise	299.00	Dwelling Unit	12.25	299,000.00	855

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 Rate

Land Use - Project Plans Land Uses

Construction Phase - Applicant provided construction schedule, trenching added

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Trenching added, Applicant provided construction equipment and hours

Trips and VMT - 214 one-way cement truck trips, 464 one-way asphalt trips

Grading - Grading = 42,000cy import

Vehicle Trips - Apts = 7.32, 7.03, 6.45

Woodstoves - No wood fireplaces, Gas only

Water And Wastewater - WTP treatment 100% aerobic

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	270.00
tblConstructionPhase	NumDays	300.00	270.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	30.00	37.00
tblConstructionPhase	NumDays	20.00	50.00
tblConstructionPhase	NumDays	10.00	5.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	44.85	95.68
tblFireplaces	NumberWood	50.83	0.00
tblGrading	MaterialImported	0.00	42,000.00
tblLandUse	LotAcreage	1.88	0.00
tblLandUse	LotAcreage	7.87	12.25
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	3.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripNumber	0.00	214.00
tblTripsAndVMT	HaulingTripNumber	0.00	464.00
tblVehicleTrips	ST_TR	6.39	7.03
tblVehicleTrips	SU_TR	5.86	6.45
tblVehicleTrips	WD_TR	6.65	7.32
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	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	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					
2019	0.9547	2.9188	2.1871	6.3400e-003	0.2254	0.0946	0.3200	0.0540	0.0894	0.1435	0.0000	588.3816	588.3816	0.0695	0.0000	590.1187
2020	1.8483	2.7142	3.1080	7.3400e-003	0.2996	0.1098	0.4094	0.0806	0.1052	0.1858	0.0000	663.8465	663.8465	0.0663	0.0000	665.5041
Maximum	**1.8483**	**2.9188**	**3.1080**	**7.3400e-003**	**0.2996**	**0.1098**	**0.4094**	**0.0806**	**0.1052**	**0.1858**	**0.0000**	**663.8465**	**663.8465**	**0.0695**	**0.0000**	**665.5041**

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					
2019	0.9547	2.9188	2.1871	6.3400e-003	0.2254	0.0946	0.3200	0.0540	0.0894	0.1435	0.0000	588.3813	588.3813	0.0695	0.0000	590.1185
2020	1.8483	2.7142	3.1079	7.3400e-003	0.2996	0.1098	0.4094	0.0806	0.1052	0.1858	0.0000	663.8462	663.8462	0.0663	0.0000	665.5037
Maximum	**1.8483**	**2.9188**	**3.1079**	**7.3400e-003**	**0.2996**	**0.1098**	**0.4094**	**0.0806**	**0.1052**	**0.1858**	**0.0000**	**663.8462**	**663.8462**	**0.0695**	**0.0000**	**665.5037**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

1	**6-1-2019**	**8-31-2019**	1.9009	1.9009
2	**9-1-2019**	**11-30-2019**	1.4828	1.4828
3	**12-1-2019**	**2-29-2020**	1.4689	1.4689
4	**3-1-2020**	**5-31-2020**	1.4422	1.4422
5	**6-1-2020**	**8-31-2020**	1.4367	1.4367
6	**9-1-2020**	**9-30-2020**	0.3414	0.3414
		Highest	1.9009	1.9009

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	1.4627	0.0360	2.2335	1.8000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5792	15.5792	3.7600e-003	2.2000e-004	15.7386
Energy	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	367.0671	367.0671	0.0256	7.2700e-003	369.8726
Mobile	0.7166	3.5743	7.9614	0.0233	1.8333	0.0244	1.8577	0.4934	0.0229	0.5163	0.0000	2,141.0712	2,141.0712	0.0960	0.0000	2,143.4716
Waste						0.0000	0.0000		0.0000	0.0000	27.9194	0.0000	27.9194	1.6500	0.0000	69.1691
Water						0.0000	0.0000		0.0000	0.0000	6.8924	19.5205	26.4129	0.0257	0.0154	31.6418
Total	**2.1932**	**3.7294**	**10.2455**	**0.0243**	**1.8333**	**0.0471**	**1.8804**	**0.4934**	**0.0456**	**0.5390**	**34.8118**	**2,543.2380**	**2,578.0498**	**1.8010**	**0.0229**	**2,629.8937**

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	1.4627	0.0360	2.2335	1.8000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5792	15.5792	3.7600e-003	2.2000e-004	15.7386
Energy	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	367.0671	367.0671	0.0256	7.2700e-003	369.8726
Mobile	0.7166	3.5743	7.9614	0.0233	1.8333	0.0244	1.8577	0.4934	0.0229	0.5163	0.0000	2,141.0712	2,141.0712	0.0960	0.0000	2,143.4716
Waste						0.0000	0.0000		0.0000	0.0000	27.9194	0.0000	27.9194	1.6500	0.0000	69.1691
Water						0.0000	0.0000		0.0000	0.0000	6.8924	19.5205	26.4129	0.0257	0.0154	31.6418
Total	**2.1932**	**3.7294**	**10.2455**	**0.0243**	**1.8333**	**0.0471**	**1.8804**	**0.4934**	**0.0456**	**0.5390**	**34.8118**	**2,543.2380**	**2,578.0498**	**1.8010**	**0.0229**	**2,629.8937**

	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	6/1/2019	6/14/2019	5	10	
2	Site Preparation	Site Preparation	6/15/2019	6/21/2019	5	5	
3	Grading	Grading	6/22/2019	8/13/2019	5	37	
4	Trenching	Trenching	8/14/2019	9/3/2019	5	15	
5	Building Construction	Building Construction	9/4/2019	9/15/2020	5	270	
6	Architectural Coating	Architectural Coating	9/4/2019	9/15/2020	5	270	
7	Paving	Paving	9/16/2020	11/24/2020	5	50	

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 74

Acres of Paving: 2.2

Residential Indoor: 605,475; Residential Outdoor: 201,825; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	3.00	81	0.73
Demolition	Crawler Tractors	1	8.00	212	0.43
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Scrapers	3	3.00	367	0.48
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Crawler Tractors	1	8.00	212	0.43
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	0.00	187	0.41
Grading	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	1	3.00	63	0.31
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	3.00	97	0.37
Building Construction	Welders	0	0.00	46	0.45
Architectural Coating	Aerial Lifts	1	4.00	63	0.31
Architectural Coating	Air Compressors	1	8.00	78	0.48
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36

Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	5,250.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	291.00	62.00	214.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	58.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	464.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

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	0.0124	0.1444	0.0930	1.8000e-004		6.2100e-003	6.2100e-003		5.7500e-003	5.7500e-003	0.0000	15.9006	15.9006	4.7800e-003	0.0000	16.0202
Total	**0.0124**	**0.1444**	**0.0930**	**1.8000e-004**		**6.2100e-003**	**6.2100e-003**		**5.7500e-003**	**5.7500e-003**	**0.0000**	**15.9006**	**15.9006**	**4.7800e-003**	**0.0000**	**16.0202**

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	4.7000e-004	3.5000e-004	3.5000e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.6714	0.6714	3.0000e-005	0.0000	0.6721
Total	**4.7000e-004**	**3.5000e-004**	**3.5000e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.6714**	**0.6714**	**3.0000e-005**	**0.0000**	**0.6721**

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	0.0124	0.1444	0.0930	1.8000e-004		6.2100e-003	6.2100e-003		5.7500e-003	5.7500e-003	0.0000	15.9006	15.9006	4.7800e-003	0.0000	16.0202
Total	**0.0124**	**0.1444**	**0.0930**	**1.8000e-004**		**6.2100e-003**	**6.2100e-003**		**5.7500e-003**	**5.7500e-003**	**0.0000**	**15.9006**	**15.9006**	**4.7800e-003**	**0.0000**	**16.0202**

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	4.7000e-004	3.5000e-004	3.5000e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.6714	0.6714	3.0000e-005	0.0000	0.6721
Total	**4.7000e-004**	**3.5000e-004**	**3.5000e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.6714**	**0.6714**	**3.0000e-005**	**0.0000**	**0.6721**

3.3 Site Preparation - 2019

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					1.3300e-003	0.0000	1.3300e-003	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7600e-003	0.0325	0.0204	4.0000e-005		1.4700e-003	1.4700e-003		1.3500e-003	1.3500e-003	0.0000	3.6196	3.6196	1.1500e-003	0.0000	3.6482
Total	**2.7600e-003**	**0.0325**	**0.0204**	**4.0000e-005**	**1.3300e-003**	**1.4700e-003**	**2.8000e-003**	**1.4000e-004**	**1.3500e-003**	**1.4900e-003**	**0.0000**	**3.6196**	**3.6196**	**1.1500e-003**	**0.0000**	**3.6482**

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	1.0000e-004	8.0000e-005	7.8000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1492	0.1492	1.0000e-005	0.0000	0.1494

Total	**1.0000e-004**	**8.0000e-005**	**7.8000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1492**	**0.1492**	**1.0000e-005**	**0.0000**	**0.1494**

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					1.3300e-003	0.0000	1.3300e-003	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7600e-003	0.0325	0.0204	4.0000e-005		1.4700e-003	1.4700e-003		1.3500e-003	1.3500e-003	0.0000	3.6196	3.6196	1.1500e-003	0.0000	3.6482
Total	**2.7600e-003**	**0.0325**	**0.0204**	**4.0000e-005**	**1.3300e-003**	**1.4700e-003**	**2.8000e-003**	**1.4000e-004**	**1.3500e-003**	**1.4900e-003**	**0.0000**	**3.6196**	**3.6196**	**1.1500e-003**	**0.0000**	**3.6482**

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	1.0000e-004	8.0000e-005	7.8000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1492	0.1492	1.0000e-005	0.0000	0.1494
Total	**1.0000e-004**	**8.0000e-005**	**7.8000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1492**	**0.1492**	**1.0000e-005**	**0.0000**	**0.1494**

3.4 Grading - 2019

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					0.0416	0.0000	0.0416	4.6000e-003	0.0000	4.6000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0612	0.6968	0.5144	8.7000e-004		0.0323	0.0323		0.0298	0.0298	0.0000	77.9601	77.9601	0.0247	0.0000	78.5768
Total	**0.0612**	**0.6968**	**0.5144**	**8.7000e-004**	**0.0416**	**0.0323**	**0.0740**	**4.6000e-003**	**0.0298**	**0.0344**	**0.0000**	**77.9601**	**77.9601**	**0.0247**	**0.0000**	**78.5768**

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	0.0245	0.8483	0.1733	2.1000e-003	0.0436	4.2200e-003	0.0478	0.0119	4.0300e-003	0.0160	0.0000	204.2736	204.2736	0.0130	0.0000	204.5979
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	1.7300e-003	1.3000e-003	0.0130	3.0000e-005	2.6100e-003	2.0000e-005	2.6400e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.4841	2.4841	1.0000e-004	0.0000	2.4866
Total	**0.0263**	**0.8496**	**0.1863**	**2.1300e-003**	**0.0462**	**4.2400e-003**	**0.0504**	**0.0126**	**4.0500e-003**	**0.0167**	**0.0000**	**206.7577**	**206.7577**	**0.0131**	**0.0000**	**207.0846**

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					0.0416	0.0000	0.0416	4.6000e-003	0.0000	4.6000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0612	0.6968	0.5144	8.7000e-004		0.0323	0.0323		0.0298	0.0298	0.0000	77.9600	77.9600	0.0247	0.0000	78.5767
Total	**0.0612**	**0.6968**	**0.5144**	**8.7000e-004**	**0.0416**	**0.0323**	**0.0740**	**4.6000e-003**	**0.0298**	**0.0344**	**0.0000**	**77.9600**	**77.9600**	**0.0247**	**0.0000**	**78.5767**

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	0.0245	0.8483	0.1733	2.1000e-003	0.0436	4.2200e-003	0.0478	0.0119	4.0300e-003	0.0160	0.0000	204.2736	204.2736	0.0130	0.0000	204.5979
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	1.7300e-003	1.3000e-003	0.0130	3.0000e-005	2.6100e-003	2.0000e-005	2.6400e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.4841	2.4841	1.0000e-004	0.0000	2.4866
Total	**0.0263**	**0.8496**	**0.1863**	**2.1300e-003**	**0.0462**	**4.2400e-003**	**0.0504**	**0.0126**	**4.0500e-003**	**0.0167**	**0.0000**	**206.7577**	**206.7577**	**0.0131**	**0.0000**	**207.0846**

3.5 Trenching - 2019

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	5.4500e-003	0.0552	0.0590	9.0000e-005		3.3100e-003	3.3100e-003		3.0500e-003	3.0500e-003	0.0000	7.6626	7.6626	2.4200e-003	0.0000	7.7232
Total	**5.4500e-003**	**0.0552**	**0.0590**	**9.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**7.6626**	**7.6626**	**2.4200e-003**	**0.0000**	**7.7232**

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	3.1000e-004	2.3000e-004	2.3300e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4476	0.4476	2.0000e-005	0.0000	0.4480
Total	**3.1000e-004**	**2.3000e-004**	**2.3300e-003**	**0.0000**	**4.7000e-004**	**0.0000**	**4.7000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4476**	**0.4476**	**2.0000e-005**	**0.0000**	**0.4480**

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	5.4500e-003	0.0552	0.0590	9.0000e-005		3.3100e-003	3.3100e-003		3.0500e-003	3.0500e-003	0.0000	7.6626	7.6626	2.4200e-003	0.0000	7.7232
Total	**5.4500e-003**	**0.0552**	**0.0590**	**9.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**7.6626**	**7.6626**	**2.4200e-003**	**0.0000**	**7.7232**

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	3.1000e-004	2.3000e-004	2.3300e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4476	0.4476	2.0000e-005	0.0000	0.4480
Total	**3.1000e-004**	**2.3000e-004**	**2.3300e-003**	**0.0000**	**4.7000e-004**	**0.0000**	**4.7000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4476**	**0.4476**	**2.0000e-005**	**0.0000**	**0.4480**

3.6 Building Construction - 2019

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	0.0647	0.6031	0.5081	8.7000e-004		0.0356	0.0356		0.0343	0.0343	0.0000	76.1141	76.1141	0.0119	0.0000	76.4122
Total	**0.0647**	**0.6031**	**0.5081**	**8.7000e-004**		**0.0356**	**0.0356**		**0.0343**	**0.0343**	**0.0000**	**76.1141**	**76.1141**	**0.0119**	**0.0000**	**76.4122**

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	3.1000e-004	0.0109	2.2200e-003	3.0000e-005	1.4800e-003	5.0000e-005	1.5300e-003	3.8000e-004	5.0000e-005	4.3000e-004	0.0000	2.6213	2.6213	1.7000e-004	0.0000	2.6255

Vendor	0.0132	0.3491	0.0925	7.1000e-004	0.0171	2.7200e-003	0.0198	4.9400e-003	2.6000e-003	7.5400e-003	0.0000	68.1568	68.1568	4.5300e-003	0.0000	68.2699
Worker	0.0642	0.0484	0.4812	1.0200e-003	0.0971	8.2000e-004	0.0979	0.0258	7.6000e-004	0.0266	0.0000	92.2591	92.2591	3.7400e-003	0.0000	92.3527
Total	**0.0778**	**0.4084**	**0.5759**	**1.7600e-003**	**0.1156**	**3.5900e-003**	**0.1192**	**0.0312**	**3.4100e-003**	**0.0346**	**0.0000**	**163.0372**	**163.0372**	**8.4400e-003**	**0.0000**	**163.2481**

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	0.0647	0.6031	0.5081	8.7000e-004		0.0356	0.0356		0.0343	0.0343	0.0000	76.1140	76.1140	0.0119	0.0000	76.4121
Total	**0.0647**	**0.6031**	**0.5081**	**8.7000e-004**		**0.0356**	**0.0356**		**0.0343**	**0.0343**	**0.0000**	**76.1140**	**76.1140**	**0.0119**	**0.0000**	**76.4121**

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	3.1000e-004	0.0109	2.2200e-003	3.0000e-005	1.4800e-003	5.0000e-005	1.5300e-003	3.8000e-004	5.0000e-005	4.3000e-004	0.0000	2.6213	2.6213	1.7000e-004	0.0000	2.6255
Vendor	0.0132	0.3491	0.0925	7.1000e-004	0.0171	2.7200e-003	0.0198	4.9400e-003	2.6000e-003	7.5400e-003	0.0000	68.1568	68.1568	4.5300e-003	0.0000	68.2699
Worker	0.0642	0.0484	0.4812	1.0200e-003	0.0971	8.2000e-004	0.0979	0.0258	7.6000e-004	0.0266	0.0000	92.2591	92.2591	3.7400e-003	0.0000	92.3527
Total	**0.0778**	**0.4084**	**0.5759**	**1.7600e-003**	**0.1156**	**3.5900e-003**	**0.1192**	**0.0312**	**3.4100e-003**	**0.0346**	**0.0000**	**163.0372**	**163.0372**	**8.4400e-003**	**0.0000**	**163.2481**

3.6 Building Construction - 2020

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	0.1268	1.1983	1.0915	1.9000e-003		0.0674	0.0674		0.0649	0.0649	0.0000	164.3290	164.3290	0.0252	0.0000	164.9594
Total	**0.1268**	**1.1983**	**1.0915**	**1.9000e-003**		**0.0674**	**0.0674**		**0.0649**	**0.0649**	**0.0000**	**164.3290**	**164.3290**	**0.0252**	**0.0000**	**164.9594**

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	5.8000e-004	0.0217	4.4100e-003	6.0000e-005	1.6400e-003	8.0000e-005	1.7200e-003	4.4000e-004	7.0000e-005	5.1000e-004	0.0000	5.6478	5.6478	3.5000e-004	0.0000	5.6565
Vendor	0.0226	0.6882	0.1738	1.5300e-003	0.0372	3.6600e-003	0.0408	0.0108	3.5000e-003	0.0143	0.0000	147.6530	147.6530	9.0400e-003	0.0000	147.8792
Worker	0.1283	0.0933	0.9375	2.1600e-003	0.2113	1.7200e-003	0.2130	0.0562	1.5900e-003	0.0578	0.0000	194.6035	194.6035	7.1400e-003	0.0000	194.7819
Total	**0.1515**	**0.8032**	**1.1157**	**3.7500e-003**	**0.2501**	**5.4600e-003**	**0.2555**	**0.0674**	**5.1600e-003**	**0.0726**	**0.0000**	**347.9043**	**347.9043**	**0.0165**	**0.0000**	**348.3176**

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	0.1268	1.1983	1.0915	1.9000e-003		0.0674	0.0674		0.0649	0.0649	0.0000	164.3288	164.3288	0.0252	0.0000	164.9592
Total	**0.1268**	**1.1983**	**1.0915**	**1.9000e-003**		**0.0674**	**0.0674**		**0.0649**	**0.0649**	**0.0000**	**164.3288**	**164.3288**	**0.0252**	**0.0000**	**164.9592**

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	5.8000e-004	0.0217	4.4100e-003	6.0000e-005	1.6400e-003	8.0000e-005	1.7200e-003	4.4000e-004	7.0000e-005	5.1000e-004	0.0000	5.6478	5.6478	3.5000e-004	0.0000	5.6565
Vendor	0.0226	0.6882	0.1738	1.5300e-003	0.0372	3.6600e-003	0.0408	0.0108	3.5000e-003	0.0143	0.0000	147.6530	147.6530	9.0400e-003	0.0000	147.8792
Worker	0.1283	0.0933	0.9375	2.1600e-003	0.2113	1.7200e-003	0.2130	0.0562	1.5900e-003	0.0578	0.0000	194.6035	194.6035	7.1400e-003	0.0000	194.7819
Total	**0.1515**	**0.8032**	**1.1157**	**3.7500e-003**	**0.2501**	**5.4600e-003**	**0.2555**	**0.0674**	**5.1600e-003**	**0.0726**	**0.0000**	**347.9043**	**347.9043**	**0.0165**	**0.0000**	**348.3176**

3.7 Architectural Coating - 2019

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	0.6745					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0160	0.1185	0.1276	2.0000e-004		7.6500e-003	7.6500e-003		7.6200e-003	7.6200e-003	0.0000	17.6730	17.6730	2.2400e-003	0.0000	17.7289
Total	**0.6905**	**0.1185**	**0.1276**	**2.0000e-004**		**7.6500e-003**	**7.6500e-003**		**7.6200e-003**	**7.6200e-003**	**0.0000**	**17.6730**	**17.6730**	**2.2400e-003**	**0.0000**	**17.7289**

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	0.0128	9.6500e-003	0.0959	2.0000e-004	0.0194	1.6000e-004	0.0195	5.1500e-003	1.5000e-004	5.3000e-003	0.0000	18.3884	18.3884	7.5000e-004	0.0000	18.4071
Total	**0.0128**	**9.6500e-003**	**0.0959**	**2.0000e-004**	**0.0194**	**1.6000e-004**	**0.0195**	**5.1500e-003**	**1.5000e-004**	**5.3000e-003**	**0.0000**	**18.3884**	**18.3884**	**7.5000e-004**	**0.0000**	**18.4071**

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	0.6745					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0160	0.1185	0.1276	2.0000e-004		7.6500e-003	7.6500e-003		7.6200e-003	7.6200e-003	0.0000	17.6730	17.6730	2.2400e-003	0.0000	17.7289
Total	**0.6905**	**0.1185**	**0.1276**	**2.0000e-004**		**7.6500e-003**	**7.6500e-003**		**7.6200e-003**	**7.6200e-003**	**0.0000**	**17.6730**	**17.6730**	**2.2400e-003**	**0.0000**	**17.7289**

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	0.0128	9.6500e-003	0.0959	2.0000e-004	0.0194	1.6000e-004	0.0195	5.1500e-003	1.5000e-004	5.3000e-003	0.0000	18.3884	18.3884	7.5000e-004	0.0000	18.4071
Total	**0.0128**	**9.6500e-003**	**0.0959**	**2.0000e-004**	**0.0194**	**1.6000e-004**	**0.0195**	**5.1500e-003**	**1.5000e-004**	**5.3000e-003**	**0.0000**	**18.3884**	**18.3884**	**7.5000e-004**	**0.0000**	**18.4071**

3.7 Architectural Coating - 2020

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	1.4681					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2374	0.2765	4.4000e-004		0.0143	0.0143		0.0143	0.0143	0.0000	38.3132	38.3132	4.6400e-003	0.0000	38.4293
Total	**1.4998**	**0.2374**	**0.2765**	**4.4000e-004**		**0.0143**	**0.0143**		**0.0143**	**0.0143**	**0.0000**	**38.3132**	**38.3132**	**4.6400e-003**	**0.0000**	**38.4293**

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	0.0256	0.0186	0.1869	4.3000e-004	0.0421	3.4000e-004	0.0425	0.0112	3.2000e-004	0.0115	0.0000	38.7869	38.7869	1.4200e-003	0.0000	38.8225
Total	**0.0256**	**0.0186**	**0.1869**	**4.3000e-004**	**0.0421**	**3.4000e-004**	**0.0425**	**0.0112**	**3.2000e-004**	**0.0115**	**0.0000**	**38.7869**	**38.7869**	**1.4200e-003**	**0.0000**	**38.8225**

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	1.4681					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2374	0.2765	4.4000e-004		0.0143	0.0143		0.0143	0.0143	0.0000	38.3132	38.3132	4.6400e-003	0.0000	38.4293
Total	**1.4998**	**0.2374**	**0.2765**	**4.4000e-004**		**0.0143**	**0.0143**		**0.0143**	**0.0143**	**0.0000**	**38.3132**	**38.3132**	**4.6400e-003**	**0.0000**	**38.4293**

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	0.0256	0.0186	0.1869	4.3000e-004	0.0421	3.4000e-004	0.0425	0.0112	3.2000e-004	0.0115	0.0000	38.7869	38.7869	1.4200e-003	0.0000	38.8225
Total	**0.0256**	**0.0186**	**0.1869**	**4.3000e-004**	**0.0421**	**3.4000e-004**	**0.0425**	**0.0112**	**3.2000e-004**	**0.0115**	**0.0000**	**38.7869**	**38.7869**	**1.4200e-003**	**0.0000**	**38.8225**

3.8 Paving - 2020

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	0.0378	0.3866	0.4078	6.1000e-004		0.0221	0.0221		0.0203	0.0203	0.0000	53.3878	53.3878	0.0173	0.0000	53.8195
Paving	2.8800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0407**	**0.3866**	**0.4078**	**6.1000e-004**		**0.0221**	**0.0221**		**0.0203**	**0.0203**	**0.0000**	**53.3878**	**53.3878**	**0.0173**	**0.0000**	**53.8195**

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	1.8400e-003	0.0685	0.0140	1.8000e-004	3.8500e-003	2.4000e-004	4.0900e-003	1.0500e-003	2.3000e-004	1.2900e-003	0.0000	17.8720	17.8720	1.1000e-003	0.0000	17.8995
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	2.1500e-003	1.5600e-003	0.0157	4.0000e-005	3.5300e-003	3.0000e-005	3.5600e-003	9.4000e-004	3.0000e-005	9.7000e-004	0.0000	3.2533	3.2533	1.2000e-004	0.0000	3.2563
Total	**3.9900e-003**	**0.0701**	**0.0296**	**2.2000e-004**	**7.3800e-003**	**2.7000e-004**	**7.6500e-003**	**1.9900e-003**	**2.6000e-004**	**2.2600e-003**	**0.0000**	**21.1254**	**21.1254**	**1.2200e-003**	**0.0000**	**21.1558**

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	0.0378	0.3866	0.4078	6.1000e-004		0.0221	0.0221		0.0203	0.0203	0.0000	53.3877	53.3877	0.0173	0.0000	53.8194
Paving	2.8800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0407**	**0.3866**	**0.4078**	**6.1000e-004**		**0.0221**	**0.0221**		**0.0203**	**0.0203**	**0.0000**	**53.3877**	**53.3877**	**0.0173**	**0.0000**	**53.8194**

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	1.8400e-003	0.0685	0.0140	1.8000e-004	3.8500e-003	2.4000e-004	4.0900e-003	1.0500e-003	2.3000e-004	1.2900e-003	0.0000	17.8720	17.8720	1.1000e-003	0.0000	17.8995
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	2.1500e-003	1.5600e-003	0.0157	4.0000e-005	3.5300e-003	3.0000e-005	3.5600e-003	9.4000e-004	3.0000e-005	9.7000e-004	0.0000	3.2533	3.2533	1.2000e-004	0.0000	3.2563
Total	**3.9900e-003**	**0.0701**	**0.0296**	**2.2000e-004**	**7.3800e-003**	**2.7000e-004**	**7.6500e-003**	**1.9900e-003**	**2.6000e-004**	**2.2600e-003**	**0.0000**	**21.1254**	**21.1254**	**1.2200e-003**	**0.0000**	**21.1558**

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	0.7166	3.5743	7.9614	0.0233	1.8333	0.0244	1.8577	0.4934	0.0229	0.5163	0.0000	2,141.0712	2,141.0712	0.0960	0.0000	2,143.4716
Unmitigated	0.7166	3.5743	7.9614	0.0233	1.8333	0.0244	1.8577	0.4934	0.0229	0.5163	0.0000	2,141.0712	2,141.0712	0.0960	0.0000	2,143.4716

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,188.68	2,101.97	1928.55	4,940,554	4,940,554
Enclosed Parking Structure	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	2,188.68	2,101.97	1,928.55	4,940,554	4,940,554

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
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking Structure	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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578299	0.039453	0.169996	0.109068	0.028307	0.006716	0.029274	0.026666	0.003071	0.001838	0.005325	0.000874	0.001112
Enclosed Parking Structure	0.578299	0.039453	0.169996	0.109068	0.028307	0.006716	0.029274	0.026666	0.003071	0.001838	0.005325	0.000874	0.001112
Parking Lot	0.578299	0.039453	0.169996	0.109068	0.028307	0.006716	0.029274	0.026666	0.003071	0.001838	0.005325	0.000874	0.001112

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	229.2180	229.2180	0.0229	4.7400e-003	231.2043
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	229.2180	229.2180	0.0229	4.7400e-003	231.2043
NaturalGas Mitigated	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8492	137.8492	2.6400e-003	2.5300e-003	138.6683
NaturalGas Unmitigated	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8492	137.8492	2.6400e-003	2.5300e-003	138.6683

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.5832e+006	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8492	137.8492	2.6400e-003	2.5300e-003	138.6683
Enclosed Parking Structure	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
Total		**0.0139**	**0.1190**	**0.0507**	**7.6000e-004**		**9.6200e-003**	**9.6200e-003**		**9.6200e-003**	**9.6200e-003**	**0.0000**	**137.8492**	**137.8492**	**2.6400e-003**	**2.5300e-003**	**138.6683**

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					
Apartments Mid Rise	2.5832e+006	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8492	137.8492	2.6400e-003	2.5300e-003	138.6683
Enclosed Parking Structure	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
Total		**0.0139**	**0.1190**	**0.0507**	**7.6000e-004**		**9.6200e-003**	**9.6200e-003**		**9.6200e-003**	**9.6200e-003**	**0.0000**	**137.8492**	**137.8492**	**2.6400e-003**	**2.5300e-003**	**138.6683**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.23438e+006	162.3721	0.0162	3.3600e-003	163.7792
Enclosed Parking Structure	474012	62.3524	6.2400e-003	1.2900e-003	62.8927
Parking Lot	34160	4.4935	4.5000e-004	9.0000e-005	4.5324
Total		**229.2180**	**0.0229**	**4.7400e-003**	**231.2043**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.23438e+006	162.3721	0.0162	3.3600e-003	163.7792
Enclosed Parking Structure	474012	62.3524	6.2400e-003	1.2900e-003	62.8927
Parking Lot	34160	4.4935	4.5000e-004	9.0000e-005	4.5324
Total		**229.2180**	**0.0229**	**4.7400e-003**	**231.2043**

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	1.4627	0.0360	2.2335	1.8000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5792	15.5792	3.7600e-003	2.2000e-004	15.7386
Unmitigated	1.4627	0.0360	2.2335	1.8000e-004		0.0131	0.0131		0.0131	0.0131	0.0000	15.5792	15.5792	3.7600e-003	2.2000e-004	15.7386

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	0.2143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1795					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0103	4.3900e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9446	11.9446	2.3000e-004	2.2000e-004	12.0156
Landscaping	0.0678	0.0257	2.2291	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6346	3.6346	3.5400e-003	0.0000	3.7230
Total	**1.4627**	**0.0360**	**2.2335**	**1.9000e-004**		**0.0131**	**0.0131**		**0.0131**	**0.0131**	**0.0000**	**15.5792**	**15.5792**	**3.7700e-003**	**2.2000e-004**	**15.7386**

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	0.2143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1795					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0103	4.3900e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9446	11.9446	2.3000e-004	2.2000e-004	12.0156
Landscaping	0.0678	0.0257	2.2291	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6346	3.6346	3.5400e-003	0.0000	3.7230
Total	**1.4627**	**0.0360**	**2.2335**	**1.9000e-004**		**0.0131**	**0.0131**		**0.0131**	**0.0131**	**0.0000**	**15.5792**	**15.5792**	**3.7700e-003**	**2.2000e-004**	**15.7386**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4129	0.0257	0.0154	31.6418
Unmitigated	26.4129	0.0257	0.0154	31.6418

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.4811 / 12.2815	26.4129	0.0257	0.0154	31.6418
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**26.4129**	**0.0257**	**0.0154**	**31.6418**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.4811 / 12.2815	26.4129	0.0257	0.0154	31.6418
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**26.4129**	**0.0257**	**0.0154**	**31.6418**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	27.9194	1.6500	0.0000	69.1691
Unmitigated	27.9194	1.6500	0.0000	69.1691

8.2 Waste by Land Use

Unmitigated

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

Apartments Mid Rise	137.54	27.9194	1.6500	0.0000	69.1691
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**27.9194**	**1.6500**	**0.0000**	**69.1691**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	137.54	27.9194	1.6500	0.0000	69.1691
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**27.9194**	**1.6500**	**0.0000**	**69.1691**

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

Baywood Village, Petaluma - Sonoma-San Francisco County, Annual

Baywood Village, Petaluma - Construction

Sonoma-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	209.00	Space	0.00	83,600.00	0
Parking Lot	244.00	Space	2.20	97,600.00	0
Apartments Mid Rise	299.00	Dwelling Unit	12.25	299,000.00	855

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 Rate

Land Use - Project Plans Land Uses

Construction Phase - Applicant provided construction schedule, trenching added

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Trenching added, Applicant provided construction equipment and hours

Trips and VMT - 1 mile trips, 214 one-way cement truck trips, 464 one-way asphalt trips

Grading - Grading = 42,000cy import

Vehicle Trips - Apts = 7.32, 7.03, 6.45

Woodstoves - No wood fireplaces, Gas only

Water And Wastewater - WTP treatment 100% aerobic

Construction Off-road Equipment Mitigation - BMPs, Tier 2 DPF 3 Mitigation

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	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	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	20.00	270.00
tblConstructionPhase	NumDays	300.00	270.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	30.00	37.00

tblConstructionPhase	NumDays	20.00	50.00
tblConstructionPhase	NumDays	10.00	5.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	44.85	95.68
tblFireplaces	NumberWood	50.83	0.00
tblGrading	MaterialImported	0.00	42,000.00
tblLandUse	LotAcreage	1.88	0.00
tblLandUse	LotAcreage	7.87	12.25
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	3.00
tblOffRoadEquipment	UsageHours	8.00	0.00

tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	214.00
tblTripsAndVMT	HaulingTripNumber	0.00	464.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblVehicleTrips	ST_TR	6.39	7.03
tblVehicleTrips	SU_TR	5.86	6.45
tblVehicleTrips	WD_TR	6.65	7.32
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	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	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					
2019	0.8765	2.1410	1.5939	2.9000e-003	0.0589	0.0879	0.1468	9.0900e-003	0.0831	0.0922	0.0000	261.3746	261.3746	0.0564	0.0000	262.7841
2020	1.7311	2.2851	2.2029	3.7300e-003	0.0296	0.1050	0.1345	8.0500e-003	0.1006	0.1086	0.0000	329.2426	329.2426	0.0553	0.0000	330.6259
Maximum	**1.7311**	**2.2851**	**2.2029**	**3.7300e-003**	**0.0589**	**0.1050**	**0.1468**	**9.0900e-003**	**0.1006**	**0.1086**	**0.0000**	**329.2426**	**329.2426**	**0.0564**	**0.0000**	**330.6259**

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					
2019	0.7933	2.3726	1.6834	2.9000e-003	0.0353	0.0108	0.0461	5.4200e-003	0.0107	0.0161	0.0000	261.3744	261.3744	0.0564	0.0000	262.7839

2020	1.6512	2.9740	2.3784	3.7300e-003	0.0296	0.0154	0.0450	8.0500e-003	0.0153	0.0234	0.0000	329.2423	329.2423	0.0553	0.0000	330.6256
Maximum	**1.6512**	**2.9740**	**2.3784**	**3.7300e-003**	**0.0353**	**0.0154**	**0.0461**	**8.0500e-003**	**0.0153**	**0.0234**	**0.0000**	**329.2423**	**329.2423**	**0.0564**	**0.0000**	**330.6256**

	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	**6.25**	**-20.80**	**-6.98**	**0.00**	**26.69**	**86.44**	**67.64**	**21.41**	**85.83**	**80.34**	**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	**6-1-2019**	**8-31-2019**	1.3152	1.3212
2	**9-1-2019**	**11-30-2019**	1.2816	1.3875
3	**12-1-2019**	**2-29-2020**	1.2731	1.4146
4	**3-1-2020**	**5-31-2020**	1.2677	1.4292
5	**6-1-2020**	**8-31-2020**	1.2691	1.4306
6	**9-1-2020**	**9-30-2020**	0.3039	0.3633
		Highest	1.3152	1.4306

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	6/1/2019	6/14/2019	5	10	
2	Site Preparation	Site Preparation	6/15/2019	6/21/2019	5	5	
3	Grading	Grading	6/22/2019	8/13/2019	5	37	
4	Trenching	Trenching	8/14/2019	9/3/2019	5	15	
5	Building Construction	Building Construction	9/4/2019	9/15/2020	5	270	
6	Architectural Coating	Architectural Coating	9/4/2019	9/15/2020	5	270	
7	Paving	Paving	9/16/2020	11/24/2020	5	50	

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 74

Acres of Paving: 2.2

Residential Indoor: 605,475; Residential Outdoor: 201,825; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	3.00	81	0.73
Demolition	Crawler Tractors	1	8.00	212	0.43
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Scrapers	3	3.00	367	0.48
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Crawler Tractors	1	8.00	212	0.43
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	0.00	187	0.41
Grading	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	1	3.00	63	0.31
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	3.00	97	0.37
Building Construction	Welders	0	0.00	46	0.45

Architectural Coating	Aerial Lifts	1	4.00	63	0.31
Architectural Coating	Air Compressors	1	8.00	78	0.48
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	7	18.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	7	18.00	0.00	5,250.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Trenching	3	8.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	291.00	62.00	214.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	58.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	464.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

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	0.0124	0.1444	0.0930	1.8000e-004		6.2100e-003	6.2100e-003		5.7500e-003	5.7500e-003	0.0000	15.9006	15.9006	4.7800e-003	0.0000	16.0202
Total	**0.0124**	**0.1444**	**0.0930**	**1.8000e-004**		**6.2100e-003**	**6.2100e-003**		**5.7500e-003**	**5.7500e-003**	**0.0000**	**15.9006**	**15.9006**	**4.7800e-003**	**0.0000**	**16.0202**

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	1.6000e-004	8.0000e-005	9.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0797	0.0797	1.0000e-005	0.0000	0.0798
Total	**1.6000e-004**	**8.0000e-005**	**9.8000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0797**	**0.0797**	**1.0000e-005**	**0.0000**	**0.0798**

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	5.2500e-003	0.1460	0.1049	1.8000e-004		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	15.9006	15.9006	4.7800e-003	0.0000	16.0202

Total	**5.2500e-003**	**0.1460**	**0.1049**	**1.8000e-004**		**5.9000e-004**	**5.9000e-004**		**5.9000e-004**	**5.9000e-004**	**0.0000**	**15.9006**	**15.9006**	**4.7800e-003**	**0.0000**	**16.0202**

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	1.6000e-004	8.0000e-005	9.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0797	0.0797	1.0000e-005	0.0000	0.0798
Total	**1.6000e-004**	**8.0000e-005**	**9.8000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0797**	**0.0797**	**1.0000e-005**	**0.0000**	**0.0798**

3.3 Site Preparation - 2019

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					1.3300e-003	0.0000	1.3300e-003	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7600e-003	0.0325	0.0204	4.0000e-005		1.4700e-003	1.4700e-003		1.3500e-003	1.3500e-003	0.0000	3.6196	3.6196	1.1500e-003	0.0000	3.6482
Total	**2.7600e-003**	**0.0325**	**0.0204**	**4.0000e-005**	**1.3300e-003**	**1.4700e-003**	**2.8000e-003**	**1.4000e-004**	**1.3500e-003**	**1.4900e-003**	**0.0000**	**3.6196**	**3.6196**	**1.1500e-003**	**0.0000**	**3.6482**

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	4.0000e-005	2.0000e-005	2.2000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0177	0.0177	0.0000	0.0000	0.0177
Total	**4.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0177**	**0.0177**	**0.0000**	**0.0000**	**0.0177**

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					6.0000e-004	0.0000	6.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3500e-003	0.0352	0.0261	4.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	3.6196	3.6196	1.1500e-003	0.0000	3.6482
Total	**1.3500e-003**	**0.0352**	**0.0261**	**4.0000e-005**	**6.0000e-004**	**1.5000e-004**	**7.5000e-004**	**3.0000e-005**	**1.5000e-004**	**1.8000e-004**	**0.0000**	**3.6196**	**3.6196**	**1.1500e-003**	**0.0000**	**3.6482**

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	4.0000e-005	2.0000e-005	2.2000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0177	0.0177	0.0000	0.0000	0.0177
Total	**4.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0177**	**0.0177**	**0.0000**	**0.0000**	**0.0177**

3.4 Grading - 2019

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					0.0416	0.0000	0.0416	4.6000e-003	0.0000	4.6000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0612	0.6968	0.5144	8.7000e-004		0.0323	0.0323		0.0298	0.0298	0.0000	77.9601	77.9601	0.0247	0.0000	78.5768
Total	**0.0612**	**0.6968**	**0.5144**	**8.7000e-004**	**0.0416**	**0.0323**	**0.0740**	**4.6000e-003**	**0.0298**	**0.0344**	**0.0000**	**77.9601**	**77.9601**	**0.0247**	**0.0000**	**78.5768**

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	6.4200e-003	0.2783	0.0495	3.0000e-004	2.2300e-003	5.5000e-004	2.7700e-003	6.2000e-004	5.2000e-004	1.1400e-003	0.0000	29.5414	29.5414	5.1900e-003	0.0000	29.6712
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	5.9000e-004	2.8000e-004	3.6200e-003	0.0000	2.4000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2948	0.2948	2.0000e-005	0.0000	0.2954
Total	**7.0100e-003**	**0.2786**	**0.0531**	**3.0000e-004**	**2.4700e-003**	**5.5000e-004**	**3.0200e-003**	**6.9000e-004**	**5.2000e-004**	**1.2100e-003**	**0.0000**	**29.8362**	**29.8362**	**5.2100e-003**	**0.0000**	**29.9665**

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					0.0187	0.0000	0.0187	1.0300e-003	0.0000	1.0300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0275	0.7229	0.5314	8.7000e-004		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	77.9600	77.9600	0.0247	0.0000	78.5767
Total	**0.0275**	**0.7229**	**0.5314**	**8.7000e-004**	**0.0187**	**3.1400e-003**	**0.0219**	**1.0300e-003**	**3.1400e-003**	**4.1700e-003**	**0.0000**	**77.9600**	**77.9600**	**0.0247**	**0.0000**	**78.5767**

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	6.4200e-003	0.2783	0.0495	3.0000e-004	2.2300e-003	5.5000e-004	2.7700e-003	6.2000e-004	5.2000e-004	1.1400e-003	0.0000	29.5414	29.5414	5.1900e-003	0.0000	29.6712
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	5.9000e-004	2.8000e-004	3.6200e-003	0.0000	2.4000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2948	0.2948	2.0000e-005	0.0000	0.2954
Total	**7.0100e-003**	**0.2786**	**0.0531**	**3.0000e-004**	**2.4700e-003**	**5.5000e-004**	**3.0200e-003**	**6.9000e-004**	**5.2000e-004**	**1.2100e-003**	**0.0000**	**29.8362**	**29.8362**	**5.2100e-003**	**0.0000**	**29.9665**

3.5 Trenching - 2019

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	5.4500e-003	0.0552	0.0590	9.0000e-005		3.3100e-003	3.3100e-003		3.0500e-003	3.0500e-003	0.0000	7.6626	7.6626	2.4200e-003	0.0000	7.7232
Total	**5.4500e-003**	**0.0552**	**0.0590**	**9.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**7.6626**	**7.6626**	**2.4200e-003**	**0.0000**	**7.7232**

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	1.1000e-004	5.0000e-005	6.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0531	0.0531	0.0000	0.0000	0.0532
Total	**1.1000e-004**	**5.0000e-005**	**6.5000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0531**	**0.0531**	**0.0000**	**0.0000**	**0.0532**

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	3.6900e-003	0.0782	0.0645	9.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	7.6626	7.6626	2.4200e-003	0.0000	7.7232
Total	**3.6900e-003**	**0.0782**	**0.0645**	**9.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**7.6626**	**7.6626**	**2.4200e-003**	**0.0000**	**7.7232**

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	1.1000e-004	5.0000e-005	6.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0531	0.0531	0.0000	0.0000	0.0532
Total	**1.1000e-004**	**5.0000e-005**	**6.5000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0531**	**0.0531**	**0.0000**	**0.0000**	**0.0532**

3.6 Building Construction - 2019

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	0.0647	0.6031	0.5081	8.7000e-004		0.0356	0.0356		0.0343	0.0343	0.0000	76.1141	76.1141	0.0119	0.0000	76.4122
Total	**0.0647**	**0.6031**	**0.5081**	**8.7000e-004**		**0.0356**	**0.0356**		**0.0343**	**0.0343**	**0.0000**	**76.1141**	**76.1141**	**0.0119**	**0.0000**	**76.4122**

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	8.0000e-005	3.5700e-003	6.3000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3791	0.3791	7.0000e-005	0.0000	0.3808
Vendor	5.8500e-003	0.1956	0.0547	2.0000e-004	2.4000e-003	5.7000e-004	2.9700e-003	7.0000e-004	5.4000e-004	1.2400e-003	0.0000	18.9469	18.9469	2.9800e-003	0.0000	19.0213
Worker	0.0219	0.0105	0.1343	1.2000e-004	9.1000e-003	1.6000e-004	9.2600e-003	2.4400e-003	1.5000e-004	2.5800e-003	0.0000	10.9495	10.9495	7.8000e-004	0.0000	10.9691
Total	**0.0278**	**0.2096**	**0.1897**	**3.2000e-004**	**0.0116**	**7.4000e-004**	**0.0123**	**3.1600e-003**	**7.0000e-004**	**3.8500e-003**	**0.0000**	**30.2755**	**30.2755**	**3.8300e-003**	**0.0000**	**30.3711**

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	0.0334	0.7317	0.5541	8.7000e-004		4.1400e-003	4.1400e-003		4.1400e-003	4.1400e-003	0.0000	76.1140	76.1140	0.0119	0.0000	76.4121
Total	**0.0334**	**0.7317**	**0.5541**	**8.7000e-004**		**4.1400e-003**	**4.1400e-003**		**4.1400e-003**	**4.1400e-003**	**0.0000**	**76.1140**	**76.1140**	**0.0119**	**0.0000**	**76.4121**

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	8.0000e-005	3.5700e-003	6.3000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3791	0.3791	7.0000e-005	0.0000	0.3808
Vendor	5.8500e-003	0.1956	0.0547	2.0000e-004	2.4000e-003	5.7000e-004	2.9700e-003	7.0000e-004	5.4000e-004	1.2400e-003	0.0000	18.9469	18.9469	2.9800e-003	0.0000	19.0213
Worker	0.0219	0.0105	0.1343	1.2000e-004	9.1000e-003	1.6000e-004	9.2600e-003	2.4400e-003	1.5000e-004	2.5800e-003	0.0000	10.9495	10.9495	7.8000e-004	0.0000	10.9691
Total	**0.0278**	**0.2096**	**0.1897**	**3.2000e-004**	**0.0116**	**7.4000e-004**	**0.0123**	**3.1600e-003**	**7.0000e-004**	**3.8500e-003**	**0.0000**	**30.2755**	**30.2755**	**3.8300e-003**	**0.0000**	**30.3711**

3.6 Building Construction - 2020

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	0.1268	1.1983	1.0915	1.9000e-003		0.0674	0.0674		0.0649	0.0649	0.0000	164.3290	164.3290	0.0252	0.0000	164.9594
Total	**0.1268**	**1.1983**	**1.0915**	**1.9000e-003**		**0.0674**	**0.0674**		**0.0649**	**0.0649**	**0.0000**	**164.3290**	**164.3290**	**0.0252**	**0.0000**	**164.9594**

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	1.5000e-004	7.4600e-003	1.2000e-003	1.0000e-005	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.8358	0.8358	1.3000e-004	0.0000	0.8391
Vendor	0.0105	0.4073	0.1042	4.3000e-004	5.2200e-003	7.6000e-004	5.9800e-003	1.5200e-003	7.3000e-004	2.2500e-003	0.0000	41.6193	41.6193	5.8500e-003	0.0000	41.7655
Worker	0.0435	0.0201	0.2614	2.6000e-004	0.0198	3.3000e-004	0.0201	5.3000e-003	3.1000e-004	5.6100e-003	0.0000	23.1183	23.1183	1.4900e-003	0.0000	23.1555
Total	**0.0541**	**0.4348**	**0.3668**	**7.0000e-004**	**0.0251**	**1.1000e-003**	**0.0262**	**6.8400e-003**	**1.0500e-003**	**7.8900e-003**	**0.0000**	**65.5734**	**65.5734**	**7.4700e-003**	**0.0000**	**65.7601**

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	0.0727	1.5926	1.2060	1.9000e-003		9.0000e-003	9.0000e-003		9.0000e-003	9.0000e-003	0.0000	164.3288	164.3288	0.0252	0.0000	164.9592
Total	**0.0727**	**1.5926**	**1.2060**	**1.9000e-003**		**9.0000e-003**	**9.0000e-003**		**9.0000e-003**	**9.0000e-003**	**0.0000**	**164.3288**	**164.3288**	**0.0252**	**0.0000**	**164.9592**

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	1.5000e-004	7.4600e-003	1.2000e-003	1.0000e-005	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.8358	0.8358	1.3000e-004	0.0000	0.8391
Vendor	0.0105	0.4073	0.1042	4.3000e-004	5.2200e-003	7.6000e-004	5.9800e-003	1.5200e-003	7.3000e-004	2.2500e-003	0.0000	41.6193	41.6193	5.8500e-003	0.0000	41.7655
Worker	0.0435	0.0201	0.2614	2.6000e-004	0.0198	3.3000e-004	0.0201	5.3000e-003	3.1000e-004	5.6100e-003	0.0000	23.1183	23.1183	1.4900e-003	0.0000	23.1555

Total	**0.0541**	**0.4348**	**0.3668**	**7.0000e-004**	**0.0251**	**1.1000e-003**	**0.0262**	**6.8400e-003**	**1.0500e-003**	**7.8900e-003**	**0.0000**	**65.5734**	**65.5734**	**7.4700e-003**	**0.0000**	**65.7601**

3.7 Architectural Coating - 2019

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	0.6745					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0160	0.1185	0.1276	2.0000e-004		7.6500e-003	7.6500e-003		7.6200e-003	7.6200e-003	0.0000	17.6730	17.6730	2.2400e-003	0.0000	17.7289
Total	**0.6905**	**0.1185**	**0.1276**	**2.0000e-004**		**7.6500e-003**	**7.6500e-003**		**7.6200e-003**	**7.6200e-003**	**0.0000**	**17.6730**	**17.6730**	**2.2400e-003**	**0.0000**	**17.7289**

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	4.3600e-003	2.0800e-003	0.0268	2.0000e-005	1.8100e-003	3.0000e-005	1.8500e-003	4.9000e-004	3.0000e-005	5.1000e-004	0.0000	2.1824	2.1824	1.6000e-004	0.0000	2.1863
Total	**4.3600e-003**	**2.0800e-003**	**0.0268**	**2.0000e-005**	**1.8100e-003**	**3.0000e-005**	**1.8500e-003**	**4.9000e-004**	**3.0000e-005**	**5.1000e-004**	**0.0000**	**2.1824**	**2.1824**	**1.6000e-004**	**0.0000**	**2.1863**

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	0.6745					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1400e-003	0.1681	0.1309	2.0000e-004		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	17.6730	17.6730	2.2400e-003	0.0000	17.7289
Total	**0.6827**	**0.1681**	**0.1309**	**2.0000e-004**		**1.0200e-003**	**1.0200e-003**		**1.0200e-003**	**1.0200e-003**	**0.0000**	**17.6730**	**17.6730**	**2.2400e-003**	**0.0000**	**17.7289**

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	4.3600e-003	2.0800e-003	0.0268	2.0000e-005	1.8100e-003	3.0000e-005	1.8500e-003	4.9000e-004	3.0000e-005	5.1000e-004	0.0000	2.1824	2.1824	1.6000e-004	0.0000	2.1863
Total	**4.3600e-003**	**2.0800e-003**	**0.0268**	**2.0000e-005**	**1.8100e-003**	**3.0000e-005**	**1.8500e-003**	**4.9000e-004**	**3.0000e-005**	**5.1000e-004**	**0.0000**	**2.1824**	**2.1824**	**1.6000e-004**	**0.0000**	**2.1863**

3.7 Architectural Coating - 2020

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	1.4681					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2374	0.2765	4.4000e-004		0.0143	0.0143		0.0143	0.0143	0.0000	38.3132	38.3132	4.6400e-003	0.0000	38.4293
Total	**1.4998**	**0.2374**	**0.2765**	**4.4000e-004**		**0.0143**	**0.0143**		**0.0143**	**0.0143**	**0.0000**	**38.3132**	**38.3132**	**4.6400e-003**	**0.0000**	**38.4293**

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	8.6600e-003	4.0000e-003	0.0521	5.0000e-005	3.9500e-003	7.0000e-005	4.0100e-003	1.0600e-003	6.0000e-005	1.1200e-003	0.0000	4.6078	4.6078	3.0000e-004	0.0000	4.6152
Total	**8.6600e-003**	**4.0000e-003**	**0.0521**	**5.0000e-005**	**3.9500e-003**	**7.0000e-005**	**4.0100e-003**	**1.0600e-003**	**6.0000e-005**	**1.1200e-003**	**0.0000**	**4.6078**	**4.6078**	**3.0000e-004**	**0.0000**	**4.6152**

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	1.4681					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0177	0.3658	0.2849	4.4000e-004		2.2200e-003	2.2200e-003		2.2200e-003	2.2200e-003	0.0000	38.3132	38.3132	4.6400e-003	0.0000	38.4293
Total	**1.4858**	**0.3658**	**0.2849**	**4.4000e-004**		**2.2200e-003**	**2.2200e-003**		**2.2200e-003**	**2.2200e-003**	**0.0000**	**38.3132**	**38.3132**	**4.6400e-003**	**0.0000**	**38.4293**

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	8.6600e-003	4.0000e-003	0.0521	5.0000e-005	3.9500e-003	7.0000e-005	4.0100e-003	1.0600e-003	6.0000e-005	1.1200e-003	0.0000	4.6078	4.6078	3.0000e-004	0.0000	4.6152
Total	**8.6600e-003**	**4.0000e-003**	**0.0521**	**5.0000e-005**	**3.9500e-003**	**7.0000e-005**	**4.0100e-003**	**1.0600e-003**	**6.0000e-005**	**1.1200e-003**	**0.0000**	**4.6078**	**4.6078**	**3.0000e-004**	**0.0000**	**4.6152**

3.8 Paving - 2020

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	0.0378	0.3866	0.4078	6.1000e-004		0.0221	0.0221		0.0203	0.0203	0.0000	53.3878	53.3878	0.0173	0.0000	53.8195
Paving	2.8800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0407**	**0.3866**	**0.4078**	**6.1000e-004**		**0.0221**	**0.0221**		**0.0203**	**0.0203**	**0.0000**	**53.3878**	**53.3878**	**0.0173**	**0.0000**	**53.8195**

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	4.7000e-004	0.0236	3.8100e-003	3.0000e-005	2.0000e-004	3.0000e-005	2.3000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	2.6449	2.6449	4.1000e-004	0.0000	2.6553
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	7.3000e-004	3.4000e-004	4.3700e-003	0.0000	3.3000e-004	1.0000e-005	3.4000e-004	9.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.3865	0.3865	2.0000e-005	0.0000	0.3871
Total	**1.2000e-003**	**0.0239**	**8.1800e-003**	**3.0000e-005**	**5.3000e-004**	**4.0000e-005**	**5.7000e-004**	**1.4000e-004**	**4.0000e-005**	**1.7000e-004**	**0.0000**	**3.0314**	**3.0314**	**4.3000e-004**	**0.0000**	**3.0424**

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	0.0260	0.5528	0.4604	6.1000e-004		2.9500e-003	2.9500e-003		2.9500e-003	2.9500e-003	0.0000	53.3877	53.3877	0.0173	0.0000	53.8194
Paving	2.8800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0289**	**0.5528**	**0.4604**	**6.1000e-004**		**2.9500e-003**	**2.9500e-003**		**2.9500e-003**	**2.9500e-003**	**0.0000**	**53.3877**	**53.3877**	**0.0173**	**0.0000**	**53.8194**

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	4.7000e-004	0.0236	3.8100e-003	3.0000e-005	2.0000e-004	3.0000e-005	2.3000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	2.6449	2.6449	4.1000e-004	0.0000	2.6553

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	7.3000e-004	3.4000e-004	4.3700e-003	0.0000	3.3000e-004	1.0000e-005	3.4000e-004	9.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.3865	0.3865	2.0000e-005	0.0000	0.3871
Total	**1.2000e-003**	**0.0239**	**8.1800e-003**	**3.0000e-005**	**5.3000e-004**	**4.0000e-005**	**5.7000e-004**	**1.4000e-004**	**4.0000e-005**	**1.7000e-004**	**0.0000**	**3.0314**	**3.0314**	**4.3000e-004**	**0.0000**	**3.0424**

Baywood Village, Petaluma - Sonoma-San Francisco County, Annual

Baywood Village, Petaluma - 2030

Sonoma-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	209.00	Space	0.00	83,600.00	0
Parking Lot	244.00	Space	2.20	97,600.00	0
Apartments Mid Rise	299.00	Dwelling Unit	12.25	299,000.00	855

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 Rate

Land Use - Project Plans Land Uses

Construction Phase - Applicant provided construction schedule, trenching added

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Applicant provided construction equipment and hours

Off-road Equipment - Trenching added, Applicant provided construction equipment and hours

Trips and VMT - 214 one-way cement truck trips, 464 one-way asphalt trips

Grading - Grading = 42,000cy import

Vehicle Trips - Apts = 7.32, 7.03, 6.45

Woodstoves - No wood fireplaces, Gas only

Water And Wastewater - WTP treatment 100% aerobic

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	270.00
tblConstructionPhase	NumDays	300.00	270.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	30.00	37.00
tblConstructionPhase	NumDays	20.00	50.00
tblConstructionPhase	NumDays	10.00	5.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	44.85	95.68
tblFireplaces	NumberWood	50.83	0.00
tblGrading	MaterialImported	0.00	42,000.00
tblLandUse	LotAcreage	1.88	0.00
tblLandUse	LotAcreage	7.87	12.25
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	3.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripNumber	0.00	214.00
tblTripsAndVMT	HaulingTripNumber	0.00	464.00
tblVehicleTrips	ST_TR	6.39	7.03
tblVehicleTrips	SU_TR	5.86	6.45
tblVehicleTrips	WD_TR	6.65	7.32
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	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	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	1.4615	0.0359	2.2228	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.5792	15.5792	3.7000e-003	2.2000e-004	15.7371
Energy	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	367.0671	367.0671	0.0256	7.2700e-003	369.8726
Mobile	0.3759	2.2949	4.1102	0.0181	1.8306	0.0126	1.8432	0.4922	0.0118	0.5039	0.0000	1,676.9331	1,676.9331	0.0586	0.0000	1,678.3969
Waste						0.0000	0.0000		0.0000	0.0000	27.9194	0.0000	27.9194	1.6500	0.0000	69.1691
Water						0.0000	0.0000		0.0000	0.0000	6.8924	19.5205	26.4129	0.0257	0.0154	31.6418
Total	**1.8513**	**2.4498**	**6.3836**	**0.0191**	**1.8306**	**0.0354**	**1.8660**	**0.4922**	**0.0346**	**0.5267**	**34.8118**	**2,079.0999**	**2,113.9117**	**1.7635**	**0.0229**	**2,164.8174**

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	1.4615	0.0359	2.2228	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.5792	15.5792	3.7000e-003	2.2000e-004	15.7371
Energy	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	367.0671	367.0671	0.0256	7.2700e-003	369.8726
Mobile	0.3759	2.2949	4.1102	0.0181	1.8306	0.0126	1.8432	0.4922	0.0118	0.5039	0.0000	1,676.9331	1,676.9331	0.0586	0.0000	1,678.3969
Waste						0.0000	0.0000		0.0000	0.0000	27.9194	0.0000	27.9194	1.6500	0.0000	69.1691

Water						0.0000	0.0000		0.0000	0.0000	6.8924	19.5205	26.4129	0.0257	0.0154	31.6418
Total	**1.8513**	**2.4498**	**6.3836**	**0.0191**	**1.8306**	**0.0354**	**1.8660**	**0.4922**	**0.0346**	**0.5267**	**34.8118**	**2,079.0999**	**2,113.9117**	**1.7635**	**0.0229**	**2,164.8174**

	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	0.3759	2.2949	4.1102	0.0181	1.8306	0.0126	1.8432	0.4922	0.0118	0.5039	0.0000	1,676.9331	1,676.9331	0.0586	0.0000	1,678.3969
Unmitigated	0.3759	2.2949	4.1102	0.0181	1.8306	0.0126	1.8432	0.4922	0.0118	0.5039	0.0000	1,676.9331	1,676.9331	0.0586	0.0000	1,678.3969

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,188.68	2,101.97	1928.55	4,940,554	4,940,554
Enclosed Parking Structure	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	2,188.68	2,101.97	1,928.55	4,940,554	4,940,554

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
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking Structure	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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.625329	0.031298	0.162135	0.089092	0.014618	0.004632	0.032111	0.030354	0.003196	0.001373	0.004305	0.000897	0.000662
Enclosed Parking Structure	0.625329	0.031298	0.162135	0.089092	0.014618	0.004632	0.032111	0.030354	0.003196	0.001373	0.004305	0.000897	0.000662
Parking Lot	0.625329	0.031298	0.162135	0.089092	0.014618	0.004632	0.032111	0.030354	0.003196	0.001373	0.004305	0.000897	0.000662

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	229.2180	229.2180	0.0229	4.7400e-003	231.2043
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	229.2180	229.2180	0.0229	4.7400e-003	231.2043
NaturalGas Mitigated	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8492	137.8492	2.6400e-003	2.5300e-003	138.6683
NaturalGas Unmitigated	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8492	137.8492	2.6400e-003	2.5300e-003	138.6683

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.5832e+006	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8492	137.8492	2.6400e-003	2.5300e-003	138.6683
Enclosed Parking Structure	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
Total		**0.0139**	**0.1190**	**0.0507**	**7.6000e-004**		**9.6200e-003**	**9.6200e-003**		**9.6200e-003**	**9.6200e-003**	**0.0000**	**137.8492**	**137.8492**	**2.6400e-003**	**2.5300e-003**	**138.6683**

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					
Apartments Mid Rise	2.5832e+006	0.0139	0.1190	0.0507	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8492	137.8492	2.6400e-003	2.5300e-003	138.6683
Enclosed Parking Structure	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
Total		**0.0139**	**0.1190**	**0.0507**	**7.6000e-004**		**9.6200e-003**	**9.6200e-003**		**9.6200e-003**	**9.6200e-003**	**0.0000**	**137.8492**	**137.8492**	**2.6400e-003**	**2.5300e-003**	**138.6683**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.23438e+006	162.3721	0.0162	3.3600e-003	163.7792
Enclosed Parking Structure	474012	62.3524	6.2400e-003	1.2900e-003	62.8927
Parking Lot	34160	4.4935	4.5000e-004	9.0000e-005	4.5324
Total		**229.2180**	**0.0229**	**4.7400e-003**	**231.2043**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.23438e+006	162.3721	0.0162	3.3600e-003	163.7792
Enclosed Parking Structure	474012	62.3524	6.2400e-003	1.2900e-003	62.8927
Parking Lot	34160	4.4935	4.5000e-004	9.0000e-005	4.5324
Total		**229.2180**	**0.0229**	**4.7400e-003**	**231.2043**

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	1.4615	0.0359	2.2228	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.5792	15.5792	3.7000e-003	2.2000e-004	15.7371
Unmitigated	1.4615	0.0359	2.2228	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.5792	15.5792	3.7000e-003	2.2000e-004	15.7371

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	0.2143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1795					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0103	4.3900e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9446	11.9446	2.3000e-004	2.2000e-004	12.0156
Landscaping	0.0666	0.0256	2.2184	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6346	3.6346	3.4800e-003	0.0000	3.7215
Total	**1.4615**	**0.0359**	**2.2228**	**1.9000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**15.5792**	**15.5792**	**3.7100e-003**	**2.2000e-004**	**15.7371**

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	0.2143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1795					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0103	4.3900e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9446	11.9446	2.3000e-004	2.2000e-004	12.0156
Landscaping	0.0666	0.0256	2.2184	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6346	3.6346	3.4800e-003	0.0000	3.7215
Total	**1.4615**	**0.0359**	**2.2228**	**1.9000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**15.5792**	**15.5792**	**3.7100e-003**	**2.2000e-004**	**15.7371**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.4129	0.0257	0.0154	31.6418
Unmitigated	26.4129	0.0257	0.0154	31.6418

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.4811 / 12.2815	26.4129	0.0257	0.0154	31.6418

Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**26.4129**	**0.0257**	**0.0154**	**31.6418**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.4811 / 12.2815	26.4129	0.0257	0.0154	31.6418
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**26.4129**	**0.0257**	**0.0154**	**31.6418**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	27.9194	1.6500	0.0000	69.1691

Unmitigated	27.9194	1.6500	0.0000	69.1691

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	137.54	27.9194	1.6500	0.0000	69.1691
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**27.9194**	**1.6500**	**0.0000**	**69.1691**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	137.54	27.9194	1.6500	0.0000	69.1691
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**27.9194**	**1.6500**	**0.0000**	**69.1691**

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

Project Name: Baywood Village 2018

Project Size 299 Dwelling Units | 14.45 total project acres disturbed

_____ s.f. residential | _____ s.f. retail

_____ s.f. office/commercial | _____ s.f. other, specify:

_____ s.f. other, specify:

_____ s.f. parking garage | 209 spaces

_____ s.f. parking lot | 244 spaces

Construction Hours 8 am to 4 pm

Complete ALL Portions in Yellow

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Comments
	Demolition	**Start Date:**	**6/1/2019**	**Total phase:**	**10**		**Overall Import/Export Volumes**
		End Date:	**6/14/2019**				
1	Concrete/Industrial Saws	81	0.73	8	4	3.2	**Demolition Volume**
1	Excavators	162	0.38	8	10	8.0	Square footage of buildings to be demolished
1	Crawler Tractors	208	0.43	8	10	8.0	(*or* total tons to be hauled)
3	Scrapers	361	0.48	8	4	3.2	
1	Tractors/Loaders/Backhoes	97	0.37	8	10	8.0	**0** square feet *or*
							0 Hauling volume (tons)
	Site Preperation	**Start Date:**	**6/15/2019**	**Total phase:**	**5**		Any pavement demolished and hauled? **0 tons**
		End Date:	**6/21/2019**				**Soil Hauling Volume**
1	Excavator	162	0.38	8	5	8.0	
1	Crawler Tractors	208	0.43	8	5	8.0	Export volume = **0** cubic yards?
1	Tractors/Loaders/Backhoes	97	0.37	8	5	8.0	Import volume = **0** cubic yards?
	Grading / Excavation	**Start Date:**	**6/22/2019**	**Total phase:**	**37**		
		End Date:	**8/13/2019**				**Soil Hauling Volume**
2	Scrapers	**361**	**0.48**	**8**	37	8.0	
1	Excavators	162	0.38	8	37	8.0	Export volume = **0** cubic yards?
2	Tractors/Loaders/Backhoes	174	0.41	8	37	8.0	Import volume = **42000** cubic yards?
2	Rollers	80	0.38	8	37	8.0	
	Other Equipment?						
	Trenching	**Start Date:**	**8/14/2019**	**Total phase:**	**15**		
		End Date:	**9/3/2019**				
2	Tractor/Loader/Backhoe	97	0.37	8	15	8.0	
1	Excavators	162	0.38	8	15	8.0	
	Other Equipment?						
	Building - Exterior	**Start Date:**	**9/4/2019**	**Total phase:**	**270**		**Cement Trucks? 107 Total Round-Trips**
		End Date:	**9/15/2020**				
1	Cranes	226	0.29	8	125	3.7	Electric? (Y/N) _n__ Otherwise assumed diesel
2	Forklifts	89	0.2	8	220	6.5	Liquid Propane (LPG)? (Y/N) _n__ Otherwise Assumed diesel
2	Generator Sets	84	0.74	8	270	8.0	Or temporary line power? (Y/N) _y__
1	Tractors/Loaders/Backhoes	97	0.37	8	100	3.0	otherwise, assume diesel generator
1	Aerial Lifts	46	0.45	8	100	3.0	
	Other Equipment?					0.0	
	Building - Interior/Architectural Coating	**Start Date:**	**9/4/2019**	**Total phase:**	**270**		
		End Date:	**9/15/2020**				
1	Air Compressors	78	0.48	8	270	8.0	
1	Aerial Lift	62	0.31	8	150	4.4	
	Other Equipment?						
	Paving	**Start Date:**	**9/16/2020**	**Total phase:**	**50**		
		Start Date:	**11/24/2020**				
1	Pavers	125	0.42	8	50	8.0	**Asphalt? 1,930 cubic yards**
2	Paving Equipment	130	0.36	8	50	8.0	
2	Rollers	80	0.38	8	50	8.0	
2	Tractors/Loaders/Backhoes	97	0.37	8	50	8.0	
	Other Equipment?						

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horepower or load factor, as appropriate

Typical Equipment Type & Load Factors

OFFROAD Equipment Type	HP	Load Factor
Aerial Lifts	62	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	205	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	226	0.29
Crawler Tractors	208	0.43
Crushing/Proc. Equipment	85	0.78
Dumpers/Tenders	16	0.38
Excavators	162	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	174	0.41
Off-Highway Tractors	122	0.44
Off-Highway Trucks	400	0.38
Other Construction Equipment	171	0.42
Other General Industrial Equipment	150	0.34
Other Material Handling Equipment	167	0.4
Pavers	125	0.42
Paving Equipment	130	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.2
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	255	0.4
Rubber Tired Loaders	199	0.36
Scrapers	361	0.48
Signal Boards	6	0.82
Skid Steer Loaders	64	0.37
Surfacing Equipment	253	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	80	0.5
Welders	46	0.45

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017 for "Multifamily Housing (Low-Rise)" (ITE LU 220). Because the site is currently unoccupied, no deductions were made for any existing land use.

The expected trip generation potential for the proposed project is indicated in Table 7. Project traffic volumes are shown in **Error! Reference source not found.**. The proposed project is expected to generate an average of 2,189 trips per day, including 138 trips during the a.m. peak hour and 167 during the p.m. peak hour.

Table 7 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Proposed											
Apartments	299 du	7.32	2,189	0.46	138	32	106	0.56	167	105	62
Total			**2,189**		**138**	**32**	**106**		**167**	**105**	**62**

Note: du = dwelling unit

Trip Distribution

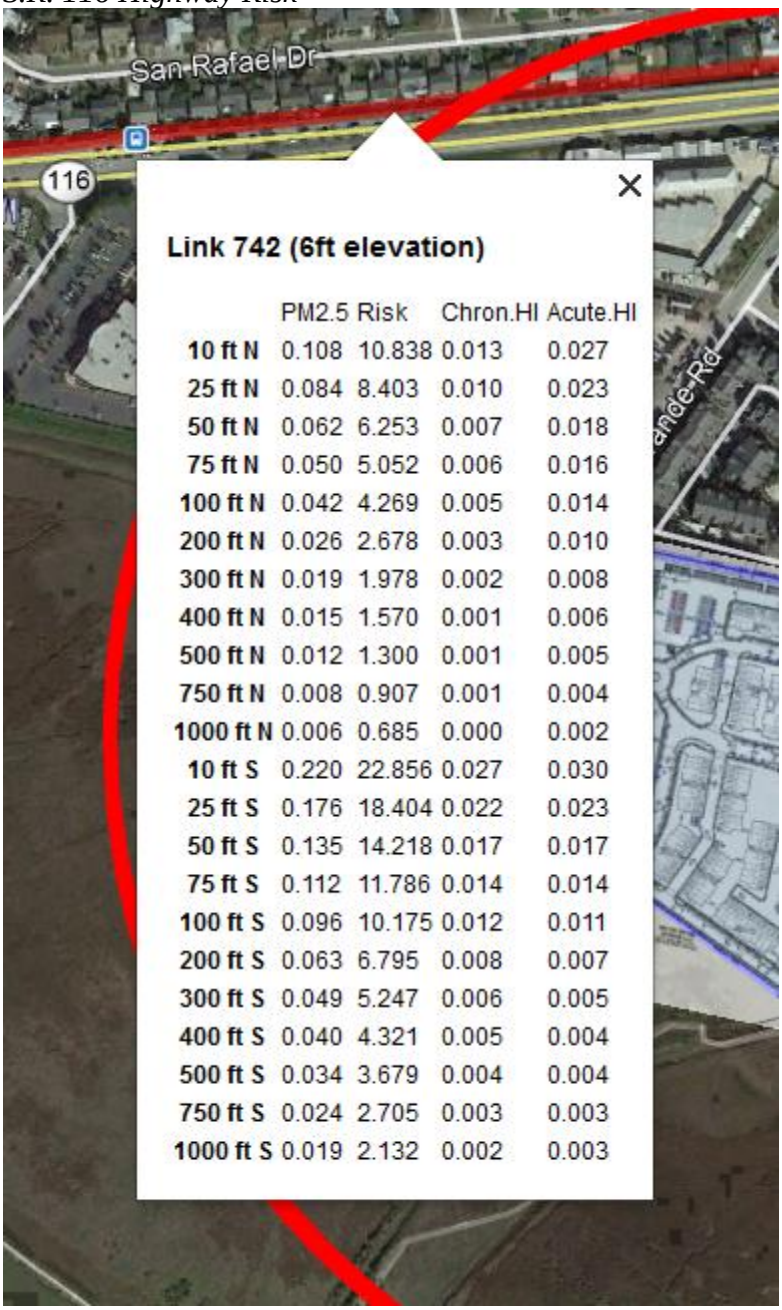
The patterns used to allocate new project trips to the street network were based on the adjacent roadway network, likely origin/destination points and current traffic patterns. These assumptions are consistent with assumptions applied to other recent traffic impact studies for projects in the area. The applied distribution assumptions and resulting trips are shown in Table 8.

Table 8 – Trip Distribution Assumptions

Route	Percent	Daily Trips	AM Trips	PM Trips
US 101 (south)	30%	656	42	50
US 101 (north)	20%	438	27	33
Lakeville Hwy (east of Casa Grande Rd)	16%	350	22	27
Casa Grande Rd (north of Lakeville Hwy)	12%	263	17	20
E D St (south of Lakeville St)	10%	219	14	17
Lakeville St (west of E Washington St)	5%	109	7	8
E Washington St (north of Lakeville St)	4%	88	5	7
Caulfield Ln (north of Lakeville St)	2%	44	3	3
E D St (north of Lakeville St)	1%	22	1	2
TOTAL	**100%**	**2,189**	**138**	**167**

Attachment 3: Screening Community Risk Calculations

S.R. 116 Highway Risk



Link 742 (6ft elevation)

	PM2.5	Risk	Chron.HI	Acute.HI
10 ft N	0.108	10.838	0.013	0.027
25 ft N	0.084	8.403	0.010	0.023
50 ft N	0.062	6.253	0.007	0.018
75 ft N	0.050	5.052	0.006	0.016
100 ft N	0.042	4.269	0.005	0.014
200 ft N	0.026	2.678	0.003	0.010
300 ft N	0.019	1.978	0.002	0.008
400 ft N	0.015	1.570	0.001	0.006
500 ft N	0.012	1.300	0.001	0.005
750 ft N	0.008	0.907	0.001	0.004
1000 ft N	0.006	0.685	0.000	0.002
10 ft S	0.220	22.856	0.027	0.030
25 ft S	0.176	18.404	0.022	0.023
50 ft S	0.135	14.218	0.017	0.017
75 ft S	0.112	11.786	0.014	0.014
100 ft S	0.096	10.175	0.012	0.011
200 ft S	0.063	6.795	0.008	0.007
300 ft S	0.049	5.247	0.006	0.005
400 ft S	0.040	4.321	0.005	0.004
500 ft S	0.034	3.679	0.004	0.004
750 ft S	0.024	2.705	0.003	0.003
1000 ft S	0.019	2.132	0.002	0.003

Bay Area Air Quality Management District

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

Click here for guidance on coducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requester Contact Information

Date of Request	**1/14/2019**
Contact Name	Casey Divine
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-040 X103
Email	cdivine@illingworthrodkin.com
Project Name	Baywood Village
Address	Casa Grande Road
City	Petaluma
County	Sonoma
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	299-apartments
Comments:	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.

2. Download and install the free program Google Earth, **http://www.google.com/earth/download/ge/,** and then download the county specific Google Earth stationary source application files from the District's website, **http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.** The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.

3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in Table B section only.

6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Areana Flores at 415-749-4616, or aflores@baaqmd.gov

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Facility Name	Address	Plant No.	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments
1,000	Tesoro	2601 Lakeville Hwy	111824	56.5024996	0.2789	NA	S1	GDF		Use GDF Multiplier
375	Michael Paul Company	1200 Casa Grande Rd	109860	16.5976093	0.0819	NA	S1	GDF		Use GDF Multiplier
615	RNM Properties	1650 Corporate Cir	19465	7.3713E-07	0.0112	0.084185	S1	Generator		Use ICE Multiplier
900	Bendig Moran Roasting LLC	1616 Corporate Cir	22419	0.001	0.0000	0.0030	S1	Coffee Roaster		

Project Site

Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
0.01	0.8	0.00	#VALUE!
0.07	1.2	0.01	#VALUE!
0.09	0.0	0.00	0.01
1.00	0.0	0.00	0.00

Construction MEI

Distance from MEI (feet)[1]	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
1000.0	0.01	0.8	0.00	#VALUE!
915.0	0.02	0.3	0.00	#VALUE!
875.0	0.05	0.0	0.00	0.00
1000.0	1.00	0.0	0.00	0.00

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period,
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

Date last updated:
03/13/2018

Attachment 4: Construction Health Risk Calculations

Baywood Village 2018, Petaluma, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Emissions Model Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2019	Construction	0.0879	DPM	175.8	0.06021	7.59E-03	59,037	**1.28E-07**
2020	Construction	0.1050	DPM	210.0	0.07192	9.06E-03	59,037	**1.53E-07**
Total		***0.1929***		***385.8***	***0.1321***	***0.0166***		

Operation Hours

hr/day = 8 (8am - 4pm)

days/yr = 365

hours/year = 2920

Baywood Village 2018, Petaluma, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

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 $g/s/m^2$
2019	Construction	FUG	0.0091	18.2	0.00623	7.84E-04	59,037	**1.33E-08**
2020	Construction	FUG	0.0081	16.1	0.00551	6.95E-04	59,037	**1.18E-08**
Total			***0.0171***	***34.3***	***0.0117***	***0.0015***		

Operation Hours

hr/day = 8 (8am - 4pm)

days/yr = 365

hours/year = 2920

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Emissions Model Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2019	Construction	0.0108	DPM	21.6	0.00740	9.32E-04	59,037	**1.58E-08**
2020	Construction	0.0154	DPM	30.8	0.01055	1.33E-03	59,037	**2.25E-08**
Total		***0.0262***		***52.4***	***0.0179***	***0.0023***		

Operation Hours

hr/day = 8 (8am - 4pm)

days/yr = 365

hours/year = 2920

PM2.5 Fugitive Dust Construction Emissions for Modeling - With Mitigation

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 $g/s/m^2$
2019	Construction	FUG	0.0054	10.8	0.00371	4.68E-04	59,037	**7.92E-09**
2020	Construction	FUG	0.0081	16.1	0.00551	6.95E-04	59,037	**1.18E-08**
Total			***0.0135***	***26.9***	***0.0092***	***0.0012***		

Operation Hours

hr/day =	8	(8am - 4pm)
days/yr =	365	
hours/year =	2920	

Baywood Village 2018, Petaluma, CA
Construction Health Impacts Summary

Maximum Impacts at Construction MEI Location - Unmitigated

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2019	0.0694	0.0087	11.40	0.20	0.014	0.08
2020	0.0830	0.0077	13.62	0.24	0.017	0.09
Total	-	-	**25.0**	**0.4**	-	-
Maximum	0.0830	0.0087	**-**	**-**	**0.017**	**0.09**

Maximum Impacts at Construction MEI Location - With Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2019	0.0086	0.0052	1.41	0.02	0.002	0.01
2020	0.0122	0.0077	2.00	0.04	0.002	0.02
Total	-	-	**3.4**	**0.1**	-	-
Maximum	0.0122	0.0077	**-**	**-**	**0.002**	**0.02**

Baywood Village 2018, Petaluma, CA - Unmitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors-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 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	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 Informatio			Infant/Child	Adult - Exposure Information			Adult		
							Modeled					
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	0	-	10			-	-	-		
1	1	0 - 1	2019	0.0664	10	10.90	2019	0.0664	1	0.19	0.0105	0.077
2	1	1 - 2	2020	0.0794	10	13.03	2020	0.0794	1	0.23	0.0093	0.089
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**23.9**				**0.42**		

* Third trimester of pregnancy

Baywood Village 2018, Petaluma, CA - Unmitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors-4.5 meter

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 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	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		
							Modeled					
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	-	-	-		-	-	-	-		
1	1	0 - 1	2019	0.0694	10	11.40	2019	0.0694	1	0.20	0.0087	0.078
2	1	1 - 2	2020	0.0830	10	13.62	2020	0.0830	1	0.24	0.0077	0.091
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**25.0**				**0.44**		

* Third trimester of pregnancy

Baywood Village 2018, Petaluma, CA - Unmitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors-7.6 meter

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 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	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				Adult - Exposure Information					
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult		
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	-	-	-	-	-	-		
1	1	0 - 1	2019	0.0601	10	9.87	2019	0.0601	1	0.17	0.0058	0.066
2	1	1 - 2	2020	0.0719	10	11.80	2020	0.0719	1	0.21	0.0051	0.077
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**21.7**				**0.38**		

* Third trimester of pregnancy

Baywood Village 2018, Petaluma, CA - Mitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors-4.5 meter

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 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	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				Adult - Exposure Information					
						Infant/Child		Modeled		Adult		
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	-	-	-		-	-	-	-		
1	1	0 - 1	2019	0.0086	10	1.41	2019	0.0086	1	0.02	0.0052	0.014
2	1	1 - 2	2020	0.0122	10	2.00	2020	0.0122	1	0.04	0.0077	0.020
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**3.4**				**0.06**		

* Third trimester of pregnancy