AVALON WEST VALLEY EXPANSION AIR QUALITY & GHG ASSESSMENT

San José, California

July 10, 2018

Prepared for:

Fiona Phung
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126

Prepared by:

James A. Reyff
Casey T. Zaglin
Bill Popenuck

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
1 Willowbrook Court, Suite 120
Petaluma, CA 94954
(707) 794-0400

I&R Project: 17-135

Introduction

The purpose of this report is to address air quality impacts and compute greenhouse gas (GHG) emissions associated with the Avalon West Valley Expansion project in San José. The air quality impacts and GHG emissions would be associated with demolition of the existing uses at the site, construction of the new buildings and infrastructure, and operation of the project. Air pollutant 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. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).

Project Description

The project proposes to demolish two on-site garages and an existing amenities/leasing building and pool area, and construct up to 300 residential units in two buildings, approximately 17,800 square feet (sf) of retail, and a new one level below-grade and three levels above-grade parking structure with approximately 1,160 parking spaces. The Manzanita Building, which would be located along Manzanita Drive, would have up to 55 residential units. The new stand-alone parking structure would be located immediately northeast of the proposed Manzanita building. The Avalon Building, which would be located on the southeast corner of the Saratoga Avenue and Blackford Avenue intersection, would have up to 245 residential units. The Avalon Building would include one level of above-grade and two levels of below-grade parking with up to 399 parking stalls. The remaining 38 parking stalls would be located adjacent to the building in a surface lot.

Construction of the new stand-alone garage and Manzanita Building would begin in the summer of 2020 and finish in 2021. The Avalon Building construction would begin in the fall of 2021 and finish in 2023.

Setting

The project is located in Santa Clara 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.

Toxic Air Contaminants

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

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a 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. The most recent Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015.[1] See *Attachment 1* for a detailed description of the community risk modeling methodology used in this assessment.

Regulatory Agencies

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

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

[1] 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.

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. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are the existing multi-story apartments adjacent to the south and east of the Avalon Building and west, north, and east of the Manzanita Building. The West Valley Middle School is about 200 feet east of the project site. At the middle school location there are also several preschools. The project would include sensitive receptors.

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.

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 substantial contributor to the formation of particulate matter in diesel-fueled engine exhaust. The current standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 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.

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

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, 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

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

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.

San José Envision 2040 General Plan

The San José Envision 2040 General Plan includes goals, policies, and actions to reduce exposure of the City's sensitive population to exposure of air pollution and toxic air contaminants or TACs. The following goals, policies, and actions are applicable to the proposed project:

Applicable Goals – Toxic Air Contaminants

Goal MS-11 Minimize exposure of people to air pollution and toxic air contaminants such as ozone, carbon monoxide, lead, and particulate matter.

Applicable Policies – Toxic Air Contaminants

MS-11.1 Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.

MS-11.4 Encourage the installation of appropriate air filtration at existing schools, residences, and other sensitive receptor uses adversely affected by pollution sources.

MS-11.5 Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.

Actions – Toxic Air Contaminants

MS-11.7 Consult with BAAQMD to identify stationary and mobile TAC sources and determine the need for and requirements of a health risk assessment for proposed developments.

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

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table 1. The BAAQMD's adoption of significance thresholds, where were contained in the 2011 *CEQA Air Quality Guidelines,* was called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). In December 2015, the Supreme Court determined that an analysis of the impacts of the environment on a project – known as "CEQA-in-reverse" – is only required under two limited circumstances: (1) when a statute provides an express legislative directive to consider such impacts; and (2) when a proposed project risks exacerbating environmental hazards or conditions that already exist (Cal. Supreme Court Case No. S213478). Because the Supreme Court's holding concerns the effects of the environment on a project (as contrasted to the effects of a proposed project on the environment), and not the science behind the thresholds, the significance thresholds contained in the CEQA Air Quality Guidelines are applied to this project. BAAQMD's updated 2017 *CEQA Air Quality Guidelines* are the most recent guidance and address the Court's ruling. This guidance and the recommended significance thresholds were applied to this study.

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 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	

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.

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.

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*.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction and operation of the project assuming full build-out conditions. 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 CalEEMod default information of a project of this size. The proposed project land uses were input into CalEEMod in two modeling scenarios:

> Manzanita Building and Stand-Alone Parking Structure: Inputs included 55 dwelling units entered as "Apartments Mid Rise" and 1,160 spaces entered as "Enclosed Parking with Elevator" on 3.60 acres. In addition, 230,000 sf of building demolition and 30,000 cubic yards (cy) of export and 5,000 cy of import of soil for the grading phase was estimated and entered into the Manzanita Building and Parking Structure model. The CalEEMod default construction schedule assumes that the Manzanita Building and Parking Structure would be built out over a period of approximately 14 months beginning

in June 2020. Based on the CalEEMod default assumptions, there are an estimated 299 construction workdays for the Manzanita Building and Parking Structure.

Avalon Building: Inputs included 245 dwelling units entered as "Apartments Mid Rise", 17,800 sf entered as "Strip Mall", 399 spaces entered as "Enclosed Parking with Elevator", and 38 spaces entered as "Parking Lot" on 5.00 acres. In addition, 130,000 sf of building demolition and 50,000 cy of export and 5,000 cy of import of soil for the grading phase was estimated and entered into the Avalon Building model. The CalEEMod default construction schedule assumes that the Avalon Building would be built out over a period of approximately 13 months, beginning in September 2021. Based on the CalEEMod default assumptions, there are an estimated 299 construction workdays for the Avalon Building.

Average daily emissions were computed for each building 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 the construction period emissions would not exceed the BAAQMD significance thresholds.

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*.

Table 2. Construction Period Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
MANZANITA BUILDING AND PARKING STRUCTURE				
West Block construction emissions (tons)	0.9 tons	4.6 tons	0.2 tons	0.2 tons
Average daily emissions (pounds)[1]	**6.2 lbs./day**	**31.0 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**
AVALON BUILDING				
East Block construction emissions (tons)	2.3 tons	4.2 tons	0.1 tons	0.1 tons
Average daily emissions (pounds)[1]	**6.7 lbs./day**	**28.0 lbs./day**	**0.9 lbs./day**	**0.8 lbs./day**
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	**No**	**No**	**No**	**No**
Notes: [1]Assumes 299 workdays.				

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by future residents, employees, and customers. 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 proposed project land uses were input into CalEEMod in one modeling scenario, which included 300 dwelling units entered as "Apartments Mid Rise", 17,800 sf entered as "Strip Mall", 1,168 spaces entered as "Unenclosed Parking with Elevator", 399 spaces entered as "Enclosed Parking with Elevator", and 38 spaces entered as "Parking Lot".

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 late 2024. Emissions associated with build-out later than 2024 would be lower.

Trip Generation Rates

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, including the 15-percent reduction for residential and retail internal capture for the apartments land use and the 15-percent reduction for residential and retail internal capture. CalEEMod default adjustments for passby and diverted trips were used. 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. Additional reductions associated with project features or future building code standards were not included in the modeling.

Electricity Production Carbon Intensity

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 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.[5]

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.

Existing Uses

The existing land uses on the project site include parking structures, a leasing/amenity building, tennis courts, and pool area. These uses produce such low operational and traffic emissions that it would not make a measurable offset to the proposed project. Therefore, the existing uses emissions were not included.

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}	$PM_{2.5}$
2024 Project Operational Emissions (*tons/year*)	2.0 tons	1.6 tons	1.5 tons	0.4 tons
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	***No***	***No***	***No***	***No***
2024 Project Operational Emissions (*lbs/day*)	10.8 lbs.	8.6 lbs.	8.5 lbs.	2.4 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 basic 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. The contractor shall implement the following best management practices that are required of all projects:

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

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

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

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Impact 2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

As discussed under Impact 1, the project would have emissions less than the BAAQMD thresholds. Therefore, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. The highest measured level over any 8-hour averaging period during the last 3 years in the Bay Area is less than 3.0 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. Intersections affected by the project would have traffic volumes less than the BAAQMD screening criteria and, thus, would not cause a violation of an ambient air quality standard or have a considerable

contribution to cumulative violations of these standards.[6] The project would not cause the violation of an air quality standard or worsen an existing violation of an air quality standard. This would be a *less-than-significant* impact.

Impact 3: 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. 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 Risk Impacts

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site. These sources can include freeways or highways, busy surface streets, and stationary sources identified by BAAQMD. Traffic on high volume roadways is a source of TAC emissions that may adversely affect sensitive receptors in close proximity to the roadway. A review of the project area indicates that traffic on Saratoga Avenue 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 three sources with the potential to affect the project site. Figure 1 shows the sources affecting the project site. Details of the modeling and community risk calculations are included in *Attachment 3.*

[6] For a land-use project type, the BAAQMD CEQA Air Quality Guidelines state that a proposed project would result in a less-than-significant impact to localized carbon monoxide concentrations if the project would not increase traffic at affected intersections with more than 44,000 vehicles per hour.

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

Local Roadways: Saratoga Avenue

Since screening computations indicate increases in excess cancer risk at the project dwelling units closest to Saratoga Avenue that would exceed significance thresholds, a refined analysis of the impacts of TACs and $PM_{2.5}$ to new sensitive receptors at the Manzanita and Avalon sites is necessary to evaluate potential cancer risks and $PM_{2.5}$ concentrations from Saratoga Avenue. Refined modeling of local roadways predicts lower and more accurate results, because project specific information is used in the modeling. This includes roadway orientation with respect to receptors (i.e., where dwelling units would be located with respect to traffic), emission estimates (i.e., based on traffic speeds and traffic mix), and meteorological conditions near the project.

Based on the traffic study for the project, Saratoga Avenue traffic includes 31,970 annual average vehicles per day.[7]

Traffic Emissions Modeling

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on Saratoga Avenue using the CARB EMFAC2014 emission factor model and a traffic mix developed based on BAAQMD data for non-highway roads in Santa Clara County. DPM emissions are projected to decrease in the future and are reflected in the EMFAC2014 emissions data.

Residential occupation of the project was assumed to begin in 2021 or later. In order to estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period (2021-2050) used for calculating increased cancer risks to new residents from traffic on Saratoga Avenue, the EMFAC2014 model was used to develop vehicle emission factors for the year 2021. Year 2021 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated (30 years), since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions will decrease in the future. Average daily traffic volumes were based on project data for Saratoga Avenue in 2018. A truck mix of 3.51 percent was assumed based on BAAQMD recommendations for truck percentages on non-highway roads in Santa Clara County.[8] One-third of the trucks were assumed to be heavy duty trucks and two-thirds were assumed to be medium duty trucks. Default EMFAC2014 vehicle model fleet age distributions for Santa Clara County were assumed. Traffic volumes were assumed to increase 1 percent per year. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[9] which were then applied to the average daily traffic volumes to obtain estimated hourly traffic volumes and emissions for Saratoga Avenue. An average travel speed of 35 mph, 5 mph below the speed limit, was used for all hours of the day.

Emissions of total organic gases (TOG) were also calculated for 2021 using the EMFAC2014 model. These TOG emissions were then used in modeling the organic TACs (i.e., TACs associated with motor vehicle exhaust and evaporative emissions). TOG emissions from exhaust and for running evaporative loses from gasoline vehicles were calculated using EMFAC2014 default model values for Santa Clara County along with the traffic volumes and vehicle mixes.

$PM_{2.5}$ emissions for vehicles traveling on Saratoga Avenue were modeled using the same basic approach that was used for assessing TAC emissions. All $PM_{2.5}$ emissions from all vehicles were used, rather than just the $PM_{2.5}$ fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce $PM_{2.5}$. Additionally, $PM_{2.5}$ emissions from vehicle tire and brake wear and from re-entrained roadway dust were included in these emissions. The assessment involved, first, calculating $PM_{2.5}$ emission rates from traffic traveling on the roadway.

[7] Hexagon Transportation Consultants, Inc., "700 Saratoga Avenue Mixed-Use Residential Development", May 2018.

[8] BAAQMD. 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. may

[9] The Burden output from EMFAC2007, CARB's previous version of the EMFAC model, was used for this since the current web-based version of EMFAC2011 does not include Burden type output with hour by hour traffic volume information.

These emissions were calculated using the EMFAC2014 model and traffic volumes and were calculated in the same manner as discussed above. $PM_{2.5}$ re-entrained dust emissions from vehicles traffic were calculated using CARB emission calculation procedures.[10]

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the U.S. EPA AERMOD model, which is recommended by the BAAQMD for this type of analysis. North- and south-bound traffic on Saratoga Avenue within about 1,000 feet of the project site was evaluated with the model. A five-year data set (2006-2010) of hourly meteorological data from the San Jose Airport prepared by the BAAQMD for use with the AERMOD model was used. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations.

Modeling was conducted to evaluate potential health impacts to future residents at the project's Avalon and Manzanita buildings. Future residential units would be on the second and higher floors of the Avalon Building and at the Manzanita Building starting on the first floor. For each building the modeling used receptors spaced every 7 meters (23 feet) in the proposed new residential areas. Receptor heights of 6.9 meters (22.6 feet) and 10.3 meters (33.8 feet) were used to represent the breathing heights of residents on the second and third floor levels of the Avalon Building and receptor heights of 1.5 meters (4.9 feet), 4.6 meters (15.1 feet), and 7.7 meters (25.3 feet) were used to represent receptor heights on the first, second, and third floor levels of the Manzanita Building. Figure 2 shows the project site area, roadway segments modeled and residential receptor locations used in the modeling.

The maximum modeled TAC and $PM_{2.5}$ concentrations from Saratoga Avenue occurred at second-floor receptors in the Avalon Building and at first-floor receptors in the Manzanita building. The maximum concentrations at each of the project buildings occurred at the receptors closest to Saratoga Avenue. TAC and $PM_{2.5}$ concentrations from Saratoga Avenue traffic at the project site will decrease with distance from the roadway and with increasing height (floor levels).

Computed Cancer and Non-Cancer Health Impacts

The maximum increased lifetime cancer risk and annual $PM_{2.5}$ concentrations for new residents at the project site are shown in Table 4 and were computed using modeled TAC and $PM_{2.5}$ concentrations and the BAAQMD recommended methods and exposure parameters described in *Attachment 1*. The maximum cancer risks, $PM_{2.5}$ concentration, and non-cancer health impacts (hazard index) are below their respective BAAQMD significance thresholds. The locations of the maximally exposed individuals (MEIs) where the maximum TAC and $PM_{2.5}$ impacts occurred are shown in Figure 2.

[10] CARB, 2014. *Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust*. Revised and updated, April 2014.

Table 4. Maximum Health Risk Impacts from Saratoga Avenue Traffic

Receptor Locations	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Chronic Hazard Index
Avalon Building			
2nd Floor Maximum Impact:	1.7	0.17	<0.01
3rd Floor Maximum Impact:	0.9	0.08	<0.01
Manzanita Building			
1st Floor Maximum Impact:	1.5	0.20	<0.01
2nd Floor Maximum Impact:	1.4	0.17	<0.01
3rd Floor Maximum Impact:	1.0	0.12	<0.01
BAAQMD Thresholds	*10.0*	*0.3*	*1.0*

The modeling results and health risk calculations for the receptor with the maximum cancer risk from Saratoga Avenue traffic are also provided in *Attachment 3*.

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 two 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. 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.

Plants #G12254, #G9351, and #G10399, which are gas stations, were the only stationary sources identified near the project site. Screening provided by BAAQMD were used and adjusted for distance based on BAAQMD's *Distance Adjustment Multiplier Tool for Gasoline Dispensing Facilities*. The maximum increased lifetime cancer risk and non-cancer hazards are shown in Table 5. Note that gasoline stations are not a source of $PM_{2.5}$ concentrations. None of these stationary sources posed significant impacts upon the project site.

Table 5. Maximum Health Risk Impacts from Stationary Sources

Receptor Locations	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Chronic Hazard Index
Avalon Building			
Plant #G12254 (Gas Station) at 460 ft	0.56	NA	<0.01
Plant #G9351 (Gas Station) at 730 ft	0.21	NA	<0.01
Plant #G10399 (Gas Station) at 700 ft	0.11	NA	<0.01
Manzanita Building			
Plant #G12254 (Gas Station) at 1,000 ft	0.16	NA	<0.01
Plant #G9351 (Gas Station) at 1,000 ft	0.13	NA	<0.01
Plant #G10399 (Gas Station) at 1,000 ft	0.07	NA	<0.01
BAAQMD Thresholds	*10.0*	*0.3*	*1.0*

Figure 2. Project Site, On-Site Sensitive Receptors, Roadway Segments Modeled and Receptors with Maximum TAC Impacts

Construction Sources

Health risk impacts from construction of the project are described later in this section. Future residents of the Manzanita project would be exposed to construction of the Avalon project. Modeling of construction activities and health risk computations indicate less than significant effects at the Manzanita Building (see Table 6).

Cumulative Community Risk at Project Site

Community risk impacts from combined sources upon the Manzanita Building project are reported in Table 6 and upon the Avalon Building project are reported in Table 7. The Manzanita Building's combined TAC sources in Table 6 include the construction of the Avalon Building as it would be occurring during the first few years of operation of the Manzanita Building. Construction emissions modeling is explained later in the report. As shown in Tables 6 and 7, single and combined TAC sources within 1,000 feet of the project sites would be below the BAAQMD cumulative risk thresholds.

Table 6. Impacts from Combined TAC Sources at Manzanita Building Project Site

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Unmitigated Avalon Building Construction	8.7 (infant)[11]	0.04	<0.01
Saratoga Ave (north-south) at 270 feet east 32,000 ADT	1.5	0.20	<0.01
Plant #G12254 (Gas Station) at 1,000 feet	0.16	NA	<0.01
Plant #G9351 (Gas Station) at 1,000 feet	0.13	NA	<0.01
Plant #G10399 (Gas Station) at 1,000 feet	0.07	NA	<0.01
Cumulative Total	10.6	0.24	<0.05
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Significant?	***No***	***No***	***No***
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Significant?	***No***	***No***	***No***

Table 7. Impacts from Combined TAC Sources at Avalon Building Project Site

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Saratoga Ave (north-south) at 35 feet east 32,000 ADT	1.7	0.17	<0.01
Plant #G12254 (Gas Station) at 460 feet	0.56	NA	<0.01
Plant #G9351 (Gas Station) at 730 feet	0.21	NA	<0.01
Plant #G10399 (Gas Station) at 700 feet	0.11	NA	<0.01
Cumulative Total	2.6	0.2	<0.04
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Significant?	***No***	***No***	***No***
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Significant?	***No***	***No***	***No***

[11] The Avalon Building construction cancer risk level in Table 6 is for the future MEI in the Manzanita Building. The Avalon Building construction cancer risk level reported later in Table 8 is for the existing neighboring residential MEI.

Project Construction Activity

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 employed to reduce these emissions. *Mitigation Measure 1 would implement BAAQMD-required best management practices*.

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 community risks for sensitive receptors such as nearby 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 community risk assessment of the project construction activities was conducted that evaluated potential health effects of sensitive receptors at these nearby residences from construction emissions of DPM and $PM_{2.5}$.[12] The closest sensitive receptors to the project are future residential apartments north of the site. There are other residences at further distances to the north and northeast of the project site. The West Valley Middle School and several preschools at the middle school site are about 200 feet east of the project site (see Figure 3). Emissions and dispersion modeling was conducted to predict the off-site DPM concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

<u>On-Site Construction TAC Emissions</u>

Construction period emissions were computed using CalEEMod along with projected construction activity, as described above. The CalEEMod model provided total annual $PM_{2.5}$ exhaust emissions (assumed to be DPM) for the off-road construction equipment used for construction of the project and for the exhaust emissions from on-road vehicles (haul trucks, vendor trucks, and worker vehicles). DPM emissions from the Manzanita site were calculated as 0.1544 tons (309 pounds) over the 2020-2021 construction period and 0.1294 tons (259 pounds) from the Avalon site over the 2021-2022 construction period. A trip length of one mile was used to represent vehicle travel while at or near the construction sites. For modeling purposes, it was assumed that these emissions from on-road vehicles would occur at the construction sites. Fugitive dust $PM_{2.5}$ emissions were also computed and included in this analysis. The model predicts emissions of 0.0645 tons (129 pounds) of fugitive $PM_{2.5}$ from the Manzanita site and 0.0572 tons (114 pounds) of fugitive $PM_{2.5}$ from the Avalon construction site over the construction period.

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

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ at sensitive receptors (residences and school children) 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.[13] For each of the construction sites modeled, 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 sources. 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 sources. 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 7 a.m. to 4 p.m., when the majority of construction activity would occur.

The modeling used a 5-year meteorological data set (2006-2010) from the San José Airport prepared for use with the AERMOD model by the BAAQMD. Annual DPM and $PM_{2.5}$ concentrations from construction activities at each project site during the 2020-2021 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptor locations. A receptor height of 1.5 meters (4.9 feet) and 4.5 meters (14.7 feet) were used to represent the breathing height of nearby residences in nearby apartments and single family homes. For receptors in the West Valley Middle School area, receptor heights of 1.0 meters (3.3 feet) were used to represent the breathing heights of preschool children.

The maximum-modeled annual $PM_{2.5}$ concentrations which includes both the DPM and fugitive $PM_{2.5}$ concentrations were identified for construction activities at the Avalon and Manzanita sites both individually and combined (overall project impact) at nearby residential and school child receptor locations, as shown in Figure 3 for the maximally exposed individuals (MEIs). Using the maximum annual modeled DPM concentrations, the maximum increased cancer risks were calculated using BAAQMD recommended methods and exposure parameters described in *Attachment 1*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were calculated and identified. Table 8 summarized the cancer risks, maximum $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities.

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

Table 8. Maximum Health Risk Impacts from Project Construction Activities

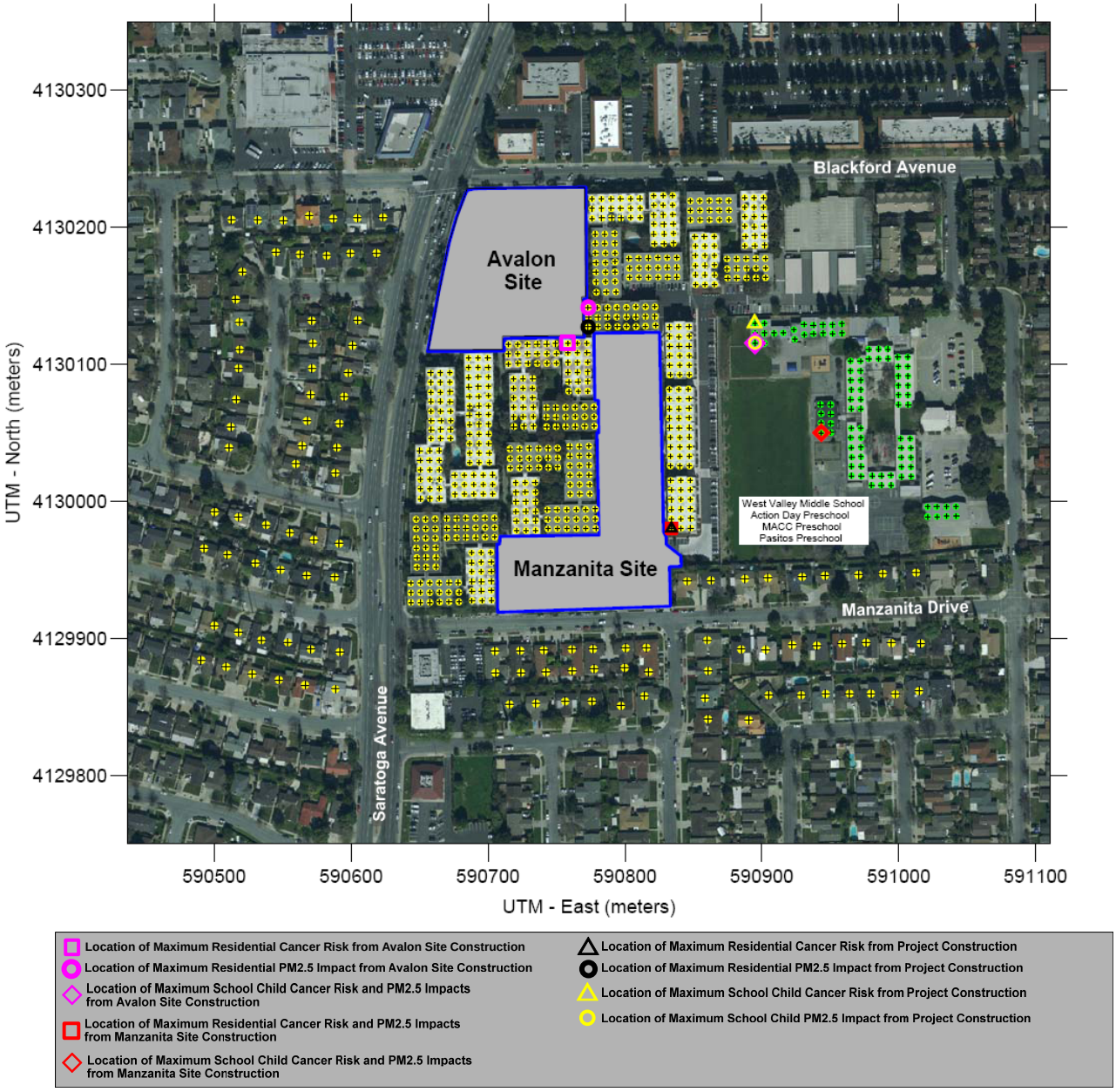
Construction Activity/ Exposure Type	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Chronic Hazard Index
Manzanita Construction			
Residential Exposure – Infant	**82.1**	**0.57**	0.06
– Adult	1.4		
School Child Exposure	1.0	0.04	<0.01
Avalon Construction			
Residential Exposure – Infant	**88.2**	**0.54**	0.06
– Adult	1.5		
School Child Exposure	1.5	0.04	<0.01
Project Construction (Manzanita & Avalon)			
Residential Exposure – Infant/Child	**87.8**	**0.60**	0.06
– Adult	<1.0		
School Child Exposure	2.5	0.06	0.01
BAAQMD Thresholds	*10.0*	*0.3*	*1.0*

Note: **Bold** denotes levels above single-source thresholds.

Results of this assessment indicate that the maximum excess residential cancer risks would be greater than the BAAQMD significance threshold of 10 in one million and the maximum $PM_{2.5}$ concentrations would exceed the BAAQMD significance threshold of 0.3 $\mu g/m^3$. *Implementation of Mitigation Measures 1 and 2 would reduce this impact to a level of less-than-significant.*

Attachment 4 to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Figure 3. Project Construction Sites, Locations of Off-Site Sensitive Receptors, and Locations of Maximum Cancer Risk and $PM_{2.5}$ Impacts



Mitigation Measure 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 89 percent reduction in particulate matter exhaust emissions or more. One feasible plan to achieve this reduction would include the following:

- All diesel-powered off-road equipment, operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent. Alternatively, the use of equipment that includes CARB-certified Level 3 Diesel Particulate Filters[14] or alternatively-fueled equipment (i.e., non-diesel) would meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less-than-significant.

- Electric power shall be provided top the project site to minimize the use of diesel-powered electrical generators, compressors and welders.

Effectiveness of Mitigation Measures 1 and 2

Implementation of Mitigation Measure 1 is considered to reduce exhaust emissions by 5 percent and fugitive dust emissions by over 50 percent. Implementation of Mitigation Measure 2 would further reduce on-site diesel exhaust emissions by 91 percent. This would reduce the cancer risk proportionally, such that the mitigated risk from the combined project would be 7.0 in one million and the annual $PM_{2.5}$ concentration would be 0.12 $\mu g/m^3$, which is less than the BAAQMD significance thresholds. After implementation of these mitigation measures, the project would have a *less-than-significant* impact with respect to community risk caused by construction activities. Table 9 summarized the cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities with mitigation.

Table 9. Health Risk Impacts from Project Construction Activities with Mitigation

Construction Activity/ Exposure Type	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Chronic Hazard Index
Manzanita Construction Residential Exposure – Infant	6.5	0.11	<0.01
Avalon Construction Residential Exposure – Infant	8.2	0.07	<0.01
Project Construction (Manzanita & Avalon) Residential Exposure – Infant/Child	7.0	0.12	<0.01
BAAQMD Thresholds	*10.0*	*0.3*	*1.0*

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

Cumulative Impact on Construction MEI

The cumulative impacts of TAC emissions from construction of the project, the stationary sources, and traffic on Saratoga Avenue on the construction MEI have been summarized in Table 10. The screening levels reported for cumulative sources were computed in the same manner described above for project residential occupants.

As shown in Table 10, the sum of impacts from combined sources at the construction MEIs would not exceed the cumulative threshold for cancer risk of 100.0 cases per pillion. The cumulative impact would be *less-than-significant*.

Table 10. Impacts from Combined Sources at Construction MEI for Cancer Risk and $PM_{2.5}$[15]

Source		Maximum Cancer Risk (per million)	Hazard Index	$PM_{2.5}$ concentration ($\mu g/m^3$)
Project Construction	Unmitigated	87.8	0.06	0.60
	Mitigated	7.0	<0.01	0.12
Saratoga Ave (north-south) 32,000 ADT		2.2	<0.01	0.11
Plant #G12254 (Gas Station)		0.2	<0.01	NA
Plant #G9351 (Gas Station)		0.1	<0.01	NA
Plant #G10399 (Gas Station)		0.1	<0.01	NA
Combined Sources	*Unmitigated*	90.4	0.1	0.71
	Mitigated	9.6	<0.05	0.23
BAAQMD Threshold – Combined Sources		***100***	***10.0***	***0.8***

[15] The cancer risk levels for Saratoga Ave and the Stationary Sources in Table 10 are for the whole project's existing neighboring residential MEIs. The cancer risk levels for Saratoga Ave and the Stationary Sources reported previously in Tables 6 and 7 are for the future MEIs in the Manzanita and Avalon Buildings.

Greenhouse Gases

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 (note that new
- 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 2.6 MT CO_2e/year/service population. This is calculated for 2030 based on the GHG reduction goals of EO B-30-15, taking into account the 1990 inventory and the projected 2030 statewide population and employment levels.[16]

Impact 4: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal.

[16] Association of Environmental Professionals, 2016. *Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*. April.

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*.

The electricity produced emission rate was modified in CalEEMod. CalEEMod has a default emission factor of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. PG&E published 2015 emissions rates for 2009 through 2015, which showed the emission rate for delivered electricity had been reduced to 405 pounds CO_2 per megawatt of electricity delivered.[17] The projected GHG intensity factor for the year 2020 is 290 pounds of CO_2 per megawatt of electricity produced, which was input to the model.[18]

Service Population Emissions

The project service population efficiency rate is based on the number of future residences plus full-time employees. The number of future residences is estimated at 960 based on the latest California Department of Finance data of 3.20 average persons per household for the City of San José.[19] The number of future full-time employees is estimated at 45 based on an approximate 2.5 employees per 1,000 sf of retail space. The total service population considering future residence and employees was calculated as 1,005 people.

Construction Emissions

GHG emissions associated with construction were computed to be 977 MT of CO_2e for the total construction period of the Manzanita Building and Parking Structure and 988 MT of CO_2e for the total construction period of the Avalon Building. 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.

[17] PG&E 2017. Climate Change. See http://www.pgecorp.com/corp_responsibility/reports/2017/en02_climate_change.html accessed March 13, 2018.
[18] PG&E. 2015. Greenhouse Gas Emission Factors: Guidance for PG&E Customers See: https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf
[19] State of California, Department of Finance. "E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2018." Accessed: June 18, 2018. Available at: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/

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 9, annual emissions resulting from the operation of the proposed project in 2024 are predicted to be 2,060 MT of CO_2e. The annual emissions from the operation of the proposed project in 2030 are predicted to be 1,859 MT of CO_2e. The emission increase would exceed the BAAQMD threshold of 1,100 MT of CO_2e/yr and, therefore, the service population threshold was used to determine the significance of this project. As shown in Table 9, service population emissions would be below the BAAQMD threshold for 2020 and the projected future threshold (i.e., for 2030) and, therefore, this would be considered a *less-than-significant* impact.

Table 9. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project in 2024	Proposed Project in 2030
Area	16	16
Energy Consumption	522	522
Mobile	1,409	1,208
Solid Waste Generation	79	79
Water	34	34
Total	2,060	1,859
Service Population Emissions	2.05	1.85
Significance Threshold	4.6 in 2020	2.6 in 2030

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 existing uses is also included in this attachment. Also included are any modeling assumptions.

Attachment 3 includes the screening community risk calculations from sources affecting the project and 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.[20] 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.[21] 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.[22] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs 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).

---

[20] 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.

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

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

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

Avalon West Valley III Manzanita + Parking Structure - Santa Clara County, Annual

Avalon West Valley III Manzanita + Parking Structure

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	55.00	Dwelling Unit	1.60	55,000.00	157
Enclosed Parking with Elevator	1,160.00	Space	2.00	464,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	380	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SVP Post 2020 rate

Land Use - Estimated acreage

Construction Phase - Based on defaults

Grading - Measured off assuming 1 story with 20% swell

Demolition - Assumed all 2-story demo

Construction Off-road Equipment Mitigation - Tier 4 and BMPs

Table Name	Column Name	Default Value	New Value

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblGrading	MaterialExported	0.00	30,000.00

tblGrading	MaterialImported	0.00	5,000.00
tblLandUse	LotAcreage	1.45	1.60
tblLandUse	LotAcreage	10.44	2.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	380

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					
2020	0.2713	3.0902	2.0271	6.8000e-003	0.3794	0.1009	0.4803	0.1082	0.0945	0.2027	0.0000	627.3607	627.3607	0.0677	0.0000	629.0524
2021	0.6551	1.5491	1.4578	3.8400e-003	0.1353	0.0600	0.1953	0.0367	0.0564	0.0930	0.0000	346.7218	346.7218	0.0423	0.0000	347.7788
Maximum	**0.6551**	**3.0902**	**2.0271**	**6.8000e-003**	**0.3794**	**0.1009**	**0.4803**	**0.1082**	**0.0945**	**0.2027**	**0.0000**	**627.3607**	**627.3607**	**0.0677**	**0.0000**	**629.0524**

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					
2020	0.1320	2.2533	2.1337	6.8000e-003	0.2768	0.0122	0.2890	0.0650	0.0119	0.0769	0.0000	627.3605	627.3605	0.0677	0.0000	629.0522
2021	0.5719	1.1626	1.5402	3.8400e-003	0.1353	6.5900e-003	0.1419	0.0367	6.5000e-003	0.0432	0.0000	346.7216	346.7216	0.0423	0.0000	347.7787
Maximum	**0.5719**	**2.2533**	**2.1337**	**6.8000e-003**	**0.2768**	**0.0122**	**0.2890**	**0.0650**	**0.0119**	**0.0769**	**0.0000**	**627.3605**	**627.3605**	**0.0677**	**0.0000**	**629.0522**

	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	**24.02**	**26.37**	**-5.42**	**0.00**	**19.93**	**88.33**	**36.22**	**29.81**	**87.82**	**59.40**	**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	**6-1-2020**	**8-31-2020**	1.9478	1.4135
2	**9-1-2020**	**11-30-2020**	1.0514	0.7309
3	**12-1-2020**	**2-28-2021**	0.9780	0.7027
4	**3-1-2021**	**5-31-2021**	0.9598	0.7006
5	**6-1-2021**	**8-31-2021**	0.6105	0.5642
		Highest	1.9478	1.4135

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4334	7.7300e-003	0.5942	3.7000e-004		0.0273	0.0273		0.0273	0.0273	2.5074	1.7177	4.2252	4.7300e-003	1.6000e-004	4.3924
Energy	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	533.1616	533.1616	0.0392	8.4800e-003	536.6704
Mobile	0.0829	0.3513	0.9634	3.3300e-003	0.3070	2.8300e-003	0.3099	0.0822	2.6400e-003	0.0848	0.0000	304.8751	304.8751	0.0103	0.0000	305.1326
Waste						0.0000	0.0000		0.0000	0.0000	5.1357	0.0000	5.1357	0.3035	0.0000	12.7234
Water						0.0000	0.0000		0.0000	0.0000	1.1369	4.7051	5.8420	0.1171	2.8300e-003	9.6139
Total	**0.5189**	**0.3810**	**1.5669**	**3.8400e-003**	**0.3070**	**0.0319**	**0.3389**	**0.0822**	**0.0317**	**0.1139**	**8.7800**	**844.4595**	**853.2394**	**0.4749**	**0.0115**	**868.5327**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4334	7.7300e-003	0.5942	3.7000e-004		0.0273	0.0273		0.0273	0.0273	2.5074	1.7177	4.2252	4.7300e-003	1.6000e-004	4.3924
Energy	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	533.1616	533.1616	0.0392	8.4800e-003	536.6704
Mobile	0.0829	0.3513	0.9634	3.3300e-003	0.3070	2.8300e-003	0.3099	0.0822	2.6400e-003	0.0848	0.0000	304.8751	304.8751	0.0103	0.0000	305.1326
Waste						0.0000	0.0000		0.0000	0.0000	5.1357	0.0000	5.1357	0.3035	0.0000	12.7234
Water						0.0000	0.0000		0.0000	0.0000	1.1369	4.7051	5.8420	0.1171	2.8300e-003	9.6139
Total	**0.5189**	**0.3810**	**1.5669**	**3.8400e-003**	**0.3070**	**0.0319**	**0.3389**	**0.0822**	**0.0317**	**0.1139**	**8.7800**	**844.4595**	**853.2394**	**0.4749**	**0.0115**	**868.5327**

	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	6/1/2020	6/26/2020	5	20	
2	Site Preparation	Site Preparation	6/27/2020	7/3/2020	5	5	
3	Grading	Grading	7/4/2020	7/15/2020	5	8	
4	Building Construction	Building Construction	7/16/2020	6/2/2021	5	230	
5	Paving	Paving	6/3/2021	6/28/2021	5	18	
6	Architectural Coating	Architectural Coating	6/29/2021	7/22/2021	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 2

Residential Indoor: 111,375; Residential Outdoor: 37,125; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class

Architectural Coating	1	47.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	234.00	82.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	1,046.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	4,375.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					
Fugitive Dust					0.1132	0.0000	0.1132	0.0171	0.0000	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**	**0.1132**	**0.0166**	**0.1298**	**0.0171**	**0.0154**	**0.0326**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

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	4.3500e-003	0.1518	0.0311	4.1000e-004	8.8700e-003	4.9000e-004	9.3600e-003	2.4400e-003	4.7000e-004	2.9100e-003	0.0000	39.8896	39.8896	1.8200e-003	0.0000	39.9353
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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**4.8500e-003**	**0.1521**	**0.0348**	**4.2000e-004**	**0.0101**	**5.0000e-004**	**0.0106**	**2.7600e-003**	**4.8000e-004**	**3.2300e-003**	**0.0000**	**40.9099**	**40.9099**	**1.8500e-003**	**0.0000**	**40.9561**

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					0.0509	0.0000	0.0509	3.8600e-003	0.0000	3.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8400e-003	0.1356	0.2467	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**5.8400e-003**	**0.1356**	**0.2467**	**3.9000e-004**	**0.0509**	**6.2000e-004**	**0.0516**	**3.8600e-003**	**6.2000e-004**	**4.4800e-003**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

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	4.3500e-003	0.1518	0.0311	4.1000e-004	8.8700e-003	4.9000e-004	9.3600e-003	2.4400e-003	4.7000e-004	2.9100e-003	0.0000	39.8896	39.8896	1.8200e-003	0.0000	39.9353

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	5.0000e-004	3.6000e-004	3.7500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0202	1.0202	3.0000e-005	0.0000	1.0209
Total	**4.8500e-003**	**0.1521**	**0.0348**	**4.2000e-004**	**0.0101**	**5.0000e-004**	**0.0106**	**2.7600e-003**	**4.8000e-004**	**3.2300e-003**	**0.0000**	**40.9099**	**40.9099**	**1.8500e-003**	**0.0000**	**40.9561**

3.3 Site Preparation - 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					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4253
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4253**

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	1.5000e-004	1.1000e-004	1.1300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3061	0.3061	1.0000e-005	0.0000	0.3063
Total	**1.5000e-004**	**1.1000e-004**	**1.1300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3061**	**0.3061**	**1.0000e-005**	**0.0000**	**0.3063**

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					0.0203	0.0000	0.0203	5.5900e-003	0.0000	5.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0304	0.0574	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4252
Total	**1.7400e-003**	**0.0304**	**0.0574**	**1.0000e-004**	**0.0203**	**1.6000e-004**	**0.0205**	**5.5900e-003**	**1.6000e-004**	**5.7500e-003**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4252**

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	1.5000e-004	1.1000e-004	1.1300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3061	0.3061	1.0000e-005	0.0000	0.3063
Total	**1.5000e-004**	**1.1000e-004**	**1.1300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3061**	**0.3061**	**1.0000e-005**	**0.0000**	**0.3063**

3.4 Grading - 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					
Fugitive Dust					0.0282	0.0000	0.0282	0.0138	0.0000	0.0138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0282**	**5.0900e-003**	**0.0333**	**0.0138**	**4.6900e-003**	**0.0185**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

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	0.0182	0.6348	0.1300	1.7200e-003	0.0371	2.0600e-003	0.0391	0.0102	1.9700e-003	0.0122	0.0000	166.8424	166.8424	7.6300e-003	0.0000	167.0332
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	2.0000e-004	1.4000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4081	0.4081	1.0000e-005	0.0000	0.4083
Total	**0.0184**	**0.6349**	**0.1315**	**1.7200e-003**	**0.0376**	**2.0600e-003**	**0.0396**	**0.0103**	**1.9700e-003**	**0.0123**	**0.0000**	**167.2505**	**167.2505**	**7.6400e-003**	**0.0000**	**167.4415**

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					0.0127	0.0000	0.0127	3.1000e-003	0.0000	3.1000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	2.0800e-003	0.0413	0.0760	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**2.0800e-003**	**0.0413**	**0.0760**	**1.2000e-004**	**0.0127**	**1.9000e-004**	**0.0129**	**3.1000e-003**	**1.9000e-004**	**3.2900e-003**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

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	0.0182	0.6348	0.1300	1.7200e-003	0.0371	2.0600e-003	0.0391	0.0102	1.9700e-003	0.0122	0.0000	166.8424	166.8424	7.6300e-003	0.0000	167.0332
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	2.0000e-004	1.4000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4081	0.4081	1.0000e-005	0.0000	0.4083
Total	**0.0184**	**0.6349**	**0.1315**	**1.7200e-003**	**0.0376**	**2.0600e-003**	**0.0396**	**0.0103**	**1.9700e-003**	**0.0123**	**0.0000**	**167.2505**	**167.2505**	**7.6400e-003**	**0.0000**	**167.4415**

3.5 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	0.1283	1.1608	1.0193	1.6300e-003		0.0676	0.0676		0.0636	0.0636	0.0000	140.1240	140.1240	0.0342	0.0000	140.9787
Total	**0.1283**	**1.1608**	**1.0193**	**1.6300e-003**		**0.0676**	**0.0676**		**0.0636**	**0.0636**	**0.0000**	**140.1240**	**140.1240**	**0.0342**	**0.0000**	**140.9787**

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	0.0197	0.5649	0.1504	1.3500e-003	0.0326	2.8000e-003	0.0354	9.4400e-003	2.6800e-003	0.0121	0.0000	129.7018	129.7018	5.9500e-003	0.0000	129.8505
Worker	0.0470	0.0338	0.3543	1.0700e-003	0.1123	7.3000e-004	0.1130	0.0299	6.7000e-004	0.0305	0.0000	96.2888	96.2888	2.3600e-003	0.0000	96.3478
Total	**0.0667**	**0.5987**	**0.5047**	**2.4200e-003**	**0.1449**	**3.5300e-003**	**0.1484**	**0.0393**	**3.3500e-003**	**0.0426**	**0.0000**	**225.9905**	**225.9905**	**8.3100e-003**	**0.0000**	**226.1983**

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	0.0323	0.6602	1.0814	1.6300e-003		5.1200e-003	5.1200e-003		5.1200e-003	5.1200e-003	0.0000	140.1239	140.1239	0.0342	0.0000	140.9785
Total	**0.0323**	**0.6602**	**1.0814**	**1.6300e-003**		**5.1200e-003**	**5.1200e-003**		**5.1200e-003**	**5.1200e-003**	**0.0000**	**140.1239**	**140.1239**	**0.0342**	**0.0000**	**140.9785**

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	0.0197	0.5649	0.1504	1.3500e-003	0.0326	2.8000e-003	0.0354	9.4400e-003	2.6800e-003	0.0121	0.0000	129.7018	129.7018	5.9500e-003	0.0000	129.8505
Worker	0.0470	0.0338	0.3543	1.0700e-003	0.1123	7.3000e-004	0.1130	0.0299	6.7000e-004	0.0305	0.0000	96.2888	96.2888	2.3600e-003	0.0000	96.3478
Total	**0.0667**	**0.5987**	**0.5047**	**2.4200e-003**	**0.1449**	**3.5300e-003**	**0.1484**	**0.0393**	**3.3500e-003**	**0.0426**	**0.0000**	**225.9905**	**225.9905**	**8.3100e-003**	**0.0000**	**226.1983**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1036	0.9501	0.9034	1.4700e-003		0.0522	0.0522		0.0491	0.0491	0.0000	126.2423	126.2423	0.0305	0.0000	127.0037
Total	**0.1036**	**0.9501**	**0.9034**	**1.4700e-003**		**0.0522**	**0.0522**		**0.0491**	**0.0491**	**0.0000**	**126.2423**	**126.2423**	**0.0305**	**0.0000**	**127.0037**

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	0.0146	0.4592	0.1223	1.2100e-003	0.0294	1.0200e-003	0.0304	8.5000e-003	9.7000e-004	9.4700e-003	0.0000	115.7602	115.7602	5.0400e-003	0.0000	115.8864

Worker	0.0393	0.0272	0.2917	9.3000e-004	0.1012	6.4000e-004	0.1018	0.0269	5.9000e-004	0.0275	0.0000	83.7288	83.7288	1.9000e-003	0.0000	83.7764
Total	**0.0539**	**0.4864**	**0.4140**	**2.1400e-003**	**0.1306**	**1.6600e-003**	**0.1322**	**0.0354**	**1.5600e-003**	**0.0370**	**0.0000**	**199.4890**	**199.4890**	**6.9400e-003**	**0.0000**	**199.6627**

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	0.0291	0.5947	0.9741	1.4700e-003		4.6100e-003	4.6100e-003		4.6100e-003	4.6100e-003	0.0000	126.2422	126.2422	0.0305	0.0000	127.0036
Total	**0.0291**	**0.5947**	**0.9741**	**1.4700e-003**		**4.6100e-003**	**4.6100e-003**		**4.6100e-003**	**4.6100e-003**	**0.0000**	**126.2422**	**126.2422**	**0.0305**	**0.0000**	**127.0036**

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	0.0146	0.4592	0.1223	1.2100e-003	0.0294	1.0200e-003	0.0304	8.5000e-003	9.7000e-004	9.4700e-003	0.0000	115.7602	115.7602	5.0400e-003	0.0000	115.8864
Worker	0.0393	0.0272	0.2917	9.3000e-004	0.1012	6.4000e-004	0.1018	0.0269	5.9000e-004	0.0275	0.0000	83.7288	83.7288	1.9000e-003	0.0000	83.7764
Total	**0.0539**	**0.4864**	**0.4140**	**2.1400e-003**	**0.1306**	**1.6600e-003**	**0.1322**	**0.0354**	**1.5600e-003**	**0.0370**	**0.0000**	**199.4890**	**199.4890**	**6.9400e-003**	**0.0000**	**199.6627**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7336	14.7336	4.6300e-003	0.0000	14.8493
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8500e-003**	**0.0976**	**0.1103**	**1.7000e-004**		**5.2100e-003**	**5.2100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**14.7336**	**14.7336**	**4.6300e-003**	**0.0000**	**14.8493**

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	5.5000e-004	3.8000e-004	4.1200e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1818	1.1818	3.0000e-005	0.0000	1.1825
Total	**5.5000e-004**	**3.8000e-004**	**4.1200e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1818**	**1.1818**	**3.0000e-005**	**0.0000**	**1.1825**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Off-Road	2.6200e-003	0.0706	0.1218	1.7000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	14.7335	14.7335	4.6300e-003	0.0000	14.8493
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6200e-003**	**0.0706**	**0.1218**	**1.7000e-004**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**	**0.0000**	**14.7335**	**14.7335**	**4.6300e-003**	**0.0000**	**14.8493**

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	5.5000e-004	3.8000e-004	4.1200e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1818	1.1818	3.0000e-005	0.0000	1.1825
Total	**5.5000e-004**	**3.8000e-004**	**4.1200e-003**	**1.0000e-005**	**1.4300e-003**	**1.0000e-005**	**1.4400e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1818**	**1.1818**	**3.0000e-005**	**0.0000**	**1.1825**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4840					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9700e-003	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019

Total	**0.4859**	**0.0137**	**0.0164**	**3.0000e-005**		**8.5000e-004**	**8.5000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.6000e-004**	**0.0000**	**2.3019**

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	1.3000e-003	9.0000e-004	9.6800e-003	3.0000e-005	3.3500e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.7772	2.7772	6.0000e-005	0.0000	2.7788
Total	**1.3000e-003**	**9.0000e-004**	**9.6800e-003**	**3.0000e-005**	**3.3500e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.7772**	**2.7772**	**6.0000e-005**	**0.0000**	**2.7788**

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	0.4840					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9000e-004	9.5400e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	**0.4844**	**9.5400e-003**	**0.0165**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.2979**	**2.2979**	**1.6000e-004**	**0.0000**	**2.3019**

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	1.3000e-003	9.0000e-004	9.6800e-003	3.0000e-005	3.3500e-003	2.0000e-005	3.3800e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.7772	2.7772	6.0000e-005	0.0000	2.7788
Total	**1.3000e-003**	**9.0000e-004**	**9.6800e-003**	**3.0000e-005**	**3.3500e-003**	**2.0000e-005**	**3.3800e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.7772**	**2.7772**	**6.0000e-005**	**0.0000**	**2.7788**

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	0.0829	0.3513	0.9634	3.3300e-003	0.3070	2.8300e-003	0.3099	0.0822	2.6400e-003	0.0848	0.0000	304.8751	304.8751	0.0103	0.0000	305.1326
Unmitigated	0.0829	0.3513	0.9634	3.3300e-003	0.3070	2.8300e-003	0.3099	0.0822	2.6400e-003	0.0848	0.0000	304.8751	304.8751	0.0103	0.0000	305.1326

4.2 Trip Summary Information

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

Apartments Mid Rise	365.75	351.45	322.30	825,685	825,685
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	365.75	351.45	322.30	825,685	825,685

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 with Elevator	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	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740
Enclosed Parking with Elevator	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740

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	507.8047	507.8047	0.0388	8.0200e-003	511.1629
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	507.8047	507.8047	0.0388	8.0200e-003	511.1629
NaturalGas Mitigated	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3569	25.3569	4.9000e-004	4.6000e-004	25.5076
NaturalGas Unmitigated	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3569	25.3569	4.9000e-004	4.6000e-004	25.5076

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	475170	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3569	25.3569	4.9000e-004	4.6000e-004	25.5076
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**2.5600e-003**	**0.0219**	**9.3200e-003**	**1.4000e-004**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**25.3569**	**25.3569**	**4.9000e-004**	**4.6000e-004**	**25.5076**

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	475170	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3569	25.3569	4.9000e-004	4.6000e-004	25.5076
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**2.5600e-003**	**0.0219**	**9.3200e-003**	**1.4000e-004**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**25.3569**	**25.3569**	**4.9000e-004**	**4.6000e-004**	**25.5076**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	227059	39.1371	2.9900e-003	6.2000e-004	39.3959
Enclosed Parking with Elevator	2.71904e+006	468.6676	0.0358	7.4000e-003	471.7670
Total		**507.8047**	**0.0388**	**8.0200e-003**	**511.1629**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	227059	39.1371	2.9900e-003	6.2000e-004	39.3959
Enclosed Parking with Elevator	2.71904e+006	468.6676	0.0358	7.4000e-003	471.7670
Total		**507.8047**	**0.0388**	**8.0200e-003**	**511.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4334	7.7300e-003	0.5942	3.7000e-004		0.0273	0.0273		0.0273	0.0273	2.5074	1.7177	4.2252	4.7300e-003	1.6000e-004	4.3924

Unmitigated	0.4334	7.7300e-003	0.5942	3.7000e-004		0.0273	0.0273		0.0273	0.0273	2.5074	1.7177	4.2252	4.7300e-003	1.6000e-004	4.3924

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	0.0484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2448					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1269	2.9200e-003	0.1748	3.5000e-004		0.0250	0.0250		0.0250	0.0250	2.5074	1.0299	3.5374	4.0300e-003	1.6000e-004	3.6871
Landscaping	0.0133	4.8100e-003	0.4195	2.0000e-005		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	0.6878	0.6878	7.0000e-004	0.0000	0.7053
Total	**0.4334**	**7.7300e-003**	**0.5943**	**3.7000e-004**		**0.0273**	**0.0273**		**0.0273**	**0.0273**	**2.5074**	**1.7177**	**4.2252**	**4.7300e-003**	**1.6000e-004**	**4.3924**

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	0.0484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2448					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1269	2.9200e-003	0.1748	3.5000e-004		0.0250	0.0250		0.0250	0.0250	2.5074	1.0299	3.5374	4.0300e-003	1.6000e-004	3.6871
Landscaping	0.0133	4.8100e-003	0.4195	2.0000e-005		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	0.6878	0.6878	7.0000e-004	0.0000	0.7053

Total	**0.4334**	**7.7300e-003**	**0.5943**	**3.7000e-004**		**0.0273**	**0.0273**		**0.0273**	**0.0273**	**2.5074**	**1.7177**	**4.2252**	**4.7300e-003**	**1.6000e-004**	**4.3924**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.8420	0.1171	2.8300e-003	9.6139
Unmitigated	5.8420	0.1171	2.8300e-003	9.6139

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.58347 / 2.25915	5.8420	0.1171	2.8300e-003	9.6139
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**5.8420**	**0.1171**	**2.8300e-003**	**9.6139**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.58347 / 2.25915	5.8420	0.1171	2.8300e-003	9.6139
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**5.8420**	**0.1171**	**2.8300e-003**	**9.6139**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.1357	0.3035	0.0000	12.7234
Unmitigated	5.1357	0.3035	0.0000	12.7234

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	25.3	5.1357	0.3035	0.0000	12.7234
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**5.1357**	**0.3035**	**0.0000**	**12.7234**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	25.3	5.1357	0.3035	0.0000	12.7234
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**5.1357**	**0.3035**	**0.0000**	**12.7234**

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

Avalon West Valley III - Avalon Building - Santa Clara County, Annual

Avalon West Valley III - Avalon Building

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	245.00	Dwelling Unit	3.00	245,000.00	701
Strip Mall	17.80	1000sqft	0.00	17,800.00	0
Enclosed Parking with Elevator	399.00	Space	2.00	159,600.00	0
Parking Lot	38.00	Space	0.00	15,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	380	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SVP Future Rate

Land Use - Double acreage for parking garage

Construction Phase - Based on model defaults

Grading - Estimated export cy based on parking area size, two levels of excavation and 20% swell

Demolition - Estiamted from Google Earth assuming two level buildings

Construction Off-road Equipment Mitigation - Tier 4 and BMPs

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblGrading	MaterialExported	0.00	50,000.00
tblGrading	MaterialImported	0.00	5,000.00

tblLandUse	LotAcreage	6.45	3.00
tblLandUse	LotAcreage	0.41	0.00
tblLandUse	LotAcreage	3.59	2.00
tblLandUse	LotAcreage	0.34	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	380

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1626	2.1957	1.2398	5.2700e-003	0.2725	0.0565	0.3290	0.0849	0.0528	0.1377	0.0000	492.2981	492.2981	0.0473	0.0000	493.4811
2022	2.0939	1.9944	2.1703	5.4900e-003	0.2134	0.0779	0.2913	0.0575	0.0733	0.1308	0.0000	493.3387	493.3387	0.0625	0.0000	494.9000
Maximum	**2.0939**	**2.1957**	**2.1703**	**5.4900e-003**	**0.2725**	**0.0779**	**0.3290**	**0.0849**	**0.0733**	**0.1377**	**0.0000**	**493.3387**	**493.3387**	**0.0625**	**0.0000**	**494.9000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0828	1.7026	1.3250	5.2700e-003	0.1964	7.2500e-003	0.2036	0.0474	7.0700e-003	0.0544	0.0000	492.2979	492.2979	0.0473	0.0000	493.4809
2022	1.9842	1.5747	2.3256	5.4900e-003	0.2134	9.7900e-003	0.2231	0.0575	9.6600e-003	0.0672	0.0000	493.3385	493.3385	0.0625	0.0000	494.8998

Maximum	**1.9842**	**1.7026**	**2.3256**	**5.4900e-003**	**0.2134**	**9.7900e-003**	**0.2231**	**0.0575**	**9.6600e-003**	**0.0672**	**0.0000**	**493.3385**	**493.3385**	**0.0625**	**0.0000**	**494.8998**

	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	**8.40**	**21.79**	**-7.05**	**0.00**	**15.67**	**87.32**	**31.20**	**26.36**	**86.72**	**54.70**	**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	**8-30-2021**	**11-29-2021**	2.0936	1.6230
2	**11-30-2021**	**2-27-2022**	0.8152	0.6033
3	**2-28-2022**	**5-29-2022**	0.7914	0.6004
4	**5-30-2022**	**8-29-2022**	0.7977	0.6046
5	**8-30-2022**	**9-30-2022**	0.4285	0.4063
		Highest	2.0936	1.6230

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	1.8434	0.0340	2.6010	1.6500e-003		0.1214	0.1214		0.1214	0.1214	11.1695	7.5675	18.7370	0.0208	7.3000e-004	19.4759
Energy	0.0116	0.0996	0.0432	6.3000e-004		8.0400e-003	8.0400e-003		8.0400e-003	8.0400e-003	0.0000	484.4629	484.4629	0.0304	7.9400e-003	487.5895
Mobile	0.4460	1.6931	4.9942	0.0182	1.7812	0.0143	1.7955	0.4768	0.0133	0.4901	0.0000	1,667.1021	1,667.1021	0.0528	0.0000	1,668.4223
Waste						0.0000	0.0000		0.0000	0.0000	26.6710	0.0000	26.6710	1.5762	0.0000	66.0762
Water						0.0000	0.0000		0.0000	0.0000	5.4825	22.6762	28.1588	0.5648	0.0137	46.3487
Total	**2.3011**	**1.8267**	**7.6384**	**0.0205**	**1.7812**	**0.1437**	**1.9249**	**0.4768**	**0.1427**	**0.6195**	**43.3230**	**2,181.8088**	**2,225.1318**	**2.2451**	**0.0223**	**2,287.9126**

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	1.8434	0.0340	2.6010	1.6500e-003		0.1214	0.1214		0.1214	0.1214	11.1695	7.5675	18.7370	0.0208	7.3000e-004	19.4759
Energy	0.0116	0.0996	0.0432	6.3000e-004		8.0400e-003	8.0400e-003		8.0400e-003	8.0400e-003	0.0000	484.4629	484.4629	0.0304	7.9400e-003	487.5895
Mobile	0.4460	1.6931	4.9942	0.0182	1.7812	0.0143	1.7955	0.4768	0.0133	0.4901	0.0000	1,667.1021	1,667.1021	0.0528	0.0000	1,668.4223
Waste						0.0000	0.0000		0.0000	0.0000	26.6710	0.0000	26.6710	1.5762	0.0000	66.0762
Water						0.0000	0.0000		0.0000	0.0000	5.4825	22.6762	28.1588	0.5648	0.0137	46.3487
Total	**2.3011**	**1.8267**	**7.6384**	**0.0205**	**1.7812**	**0.1437**	**1.9249**	**0.4768**	**0.1427**	**0.6195**	**43.3230**	**2,181.8088**	**2,225.1318**	**2.2451**	**0.0223**	**2,287.9126**

	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	8/30/2021	9/24/2021	5	20	
2	Site Preparation	Site Preparation	9/25/2021	10/1/2021	5	5	
3	Grading	Grading	10/2/2021	10/13/2021	5	8	
4	Building Construction	Building Construction	10/14/2021	8/31/2022	5	230	
5	Paving	Paving	9/1/2022	9/26/2022	5	18	
6	Architectural Coating	Architectural Coating	9/27/2022	10/20/2022	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 2

Residential Indoor: 496,125; Residential Outdoor: 165,375; Non-Residential Indoor: 26,700; Non-Residential Outdoor: 8,900; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	51.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Building Construction	9	256.00	58.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	591.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	6,875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0640	0.0000	0.0640	9.6900e-003	0.0000	9.6900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**0.0640**	**0.0155**	**0.0795**	**9.6900e-003**	**0.0144**	**0.0241**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

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	2.3200e-003	0.0790	0.0172	2.3000e-004	5.0100e-003	2.5000e-004	5.2600e-003	1.3800e-003	2.4000e-004	1.6100e-003	0.0000	22.2521	22.2521	1.0100e-003	0.0000	22.2774
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	4.6000e-004	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**2.7800e-003**	**0.0794**	**0.0207**	**2.4000e-004**	**6.2000e-003**	**2.6000e-004**	**6.4600e-003**	**1.7000e-003**	**2.5000e-004**	**1.9300e-003**	**0.0000**	**23.2369**	**23.2369**	**1.0300e-003**	**0.0000**	**23.2627**

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					0.0288	0.0000	0.0288	2.1800e-003	0.0000	2.1800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8400e-003	0.1356	0.2467	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**5.8400e-003**	**0.1356**	**0.2467**	**3.9000e-004**	**0.0288**	**6.2000e-004**	**0.0294**	**2.1800e-003**	**6.2000e-004**	**2.8000e-003**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

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	2.3200e-003	0.0790	0.0172	2.3000e-004	5.0100e-003	2.5000e-004	5.2600e-003	1.3800e-003	2.4000e-004	1.6100e-003	0.0000	22.2521	22.2521	1.0100e-003	0.0000	22.2774
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	4.6000e-004	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**2.7800e-003**	**0.0794**	**0.0207**	**2.4000e-004**	**6.2000e-003**	**2.6000e-004**	**6.4600e-003**	**1.7000e-003**	**2.5000e-004**	**1.9300e-003**	**0.0000**	**23.2369**	**23.2369**	**1.0300e-003**	**0.0000**	**23.2627**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	**9.7200e-003**	**0.1012**	**0.0529**	**1.0000e-004**	**0.0452**	**5.1100e-003**	**0.0503**	**0.0248**	**4.7000e-003**	**0.0295**	**0.0000**	**8.3589**	**8.3589**	**2.7000e-003**	**0.0000**	**8.4265**

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	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2954	0.2954	1.0000e-005	0.0000	0.2956
Total	**1.4000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2954**	**0.2954**	**1.0000e-005**	**0.0000**	**0.2956**

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					0.0203	0.0000	0.0203	5.5900e-003	0.0000	5.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0304	0.0574	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	**1.7400e-003**	**0.0304**	**0.0574**	**1.0000e-004**	**0.0203**	**1.6000e-004**	**0.0205**	**5.5900e-003**	**1.6000e-004**	**5.7500e-003**	**0.0000**	**8.3589**	**8.3589**	**2.7000e-003**	**0.0000**	**8.4265**

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	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2954	0.2954	1.0000e-005	0.0000	0.2956
Total	**1.4000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2954**	**0.2954**	**1.0000e-005**	**0.0000**	**0.2956**

3.4 Grading - 2021

Unmitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Fugitive Dust					0.0293	0.0000	0.0293	0.0139	0.0000	0.0139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1600e-003	0.0990	0.0634	1.2000e-004		4.6400e-003	4.6400e-003		4.2700e-003	4.2700e-003	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**9.1600e-003**	**0.0990**	**0.0634**	**1.2000e-004**	**0.0293**	**4.6400e-003**	**0.0340**	**0.0139**	**4.2700e-003**	**0.0182**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

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	0.0270	0.9193	0.2003	2.6700e-003	0.0583	2.8700e-003	0.0612	0.0160	2.7500e-003	0.0188	0.0000	258.8551	258.8551	0.0118	0.0000	259.1487
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	1.8000e-004	1.3000e-004	1.3700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3939	0.3939	1.0000e-005	0.0000	0.3942
Total	**0.0271**	**0.9194**	**0.2017**	**2.6700e-003**	**0.0588**	**2.8700e-003**	**0.0616**	**0.0162**	**2.7500e-003**	**0.0189**	**0.0000**	**259.2490**	**259.2490**	**0.0118**	**0.0000**	**259.5429**

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					0.0132	0.0000	0.0132	3.1400e-003	0.0000	3.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0800e-003	0.0413	0.0760	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057

Total	**2.0800e-003**	**0.0413**	**0.0760**	**1.2000e-004**	**0.0132**	**1.9000e-004**	**0.0134**	**3.1400e-003**	**1.9000e-004**	**3.3300e-003**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

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	0.0270	0.9193	0.2003	2.6700e-003	0.0583	2.8700e-003	0.0612	0.0160	2.7500e-003	0.0188	0.0000	258.8551	258.8551	0.0118	0.0000	259.1487
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	1.8000e-004	1.3000e-004	1.3700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3939	0.3939	1.0000e-005	0.0000	0.3942
Total	**0.0271**	**0.9194**	**0.2017**	**2.6700e-003**	**0.0588**	**2.8700e-003**	**0.0616**	**0.0162**	**2.7500e-003**	**0.0189**	**0.0000**	**259.2490**	**259.2490**	**0.0118**	**0.0000**	**259.5429**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0542	0.4968	0.4724	7.7000e-004		0.0273	0.0273		0.0257	0.0257	0.0000	66.0166	66.0166	0.0159	0.0000	66.4148
Total	**0.0542**	**0.4968**	**0.4724**	**7.7000e-004**		**0.0273**	**0.0273**		**0.0257**	**0.0257**	**0.0000**	**66.0166**	**66.0166**	**0.0159**	**0.0000**	**66.4148**

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	5.3900e-003	0.1699	0.0452	4.5000e-004	0.0109	3.8000e-004	0.0113	3.1400e-003	3.6000e-004	3.5000e-003	0.0000	42.8176	42.8176	1.8700e-003	0.0000	42.8642
Worker	0.0225	0.0156	0.1669	5.3000e-004	0.0579	3.6000e-004	0.0582	0.0154	3.4000e-004	0.0157	0.0000	47.9013	47.9013	1.0900e-003	0.0000	47.9285
Total	**0.0279**	**0.1854**	**0.2121**	**9.8000e-004**	**0.0687**	**7.4000e-004**	**0.0695**	**0.0185**	**7.0000e-004**	**0.0192**	**0.0000**	**90.7189**	**90.7189**	**2.9600e-003**	**0.0000**	**90.7927**

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	0.0152	0.3110	0.5094	7.7000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	66.0166	66.0166	0.0159	0.0000	66.4147
Total	**0.0152**	**0.3110**	**0.5094**	**7.7000e-004**		**2.4100e-003**	**2.4100e-003**		**2.4100e-003**	**2.4100e-003**	**0.0000**	**66.0166**	**66.0166**	**0.0159**	**0.0000**	**66.4147**

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	5.3900e-003	0.1699	0.0452	4.5000e-004	0.0109	3.8000e-004	0.0113	3.1400e-003	3.6000e-004	3.5000e-003	0.0000	42.8176	42.8176	1.8700e-003	0.0000	42.8642
Worker	0.0225	0.0156	0.1669	5.3000e-004	0.0579	3.6000e-004	0.0582	0.0154	3.4000e-004	0.0157	0.0000	47.9013	47.9013	1.0900e-003	0.0000	47.9285
Total	**0.0279**	**0.1854**	**0.2121**	**9.8000e-004**	**0.0687**	**7.4000e-004**	**0.0695**	**0.0185**	**7.0000e-004**	**0.0192**	**0.0000**	**90.7189**	**90.7189**	**2.9600e-003**	**0.0000**	**90.7927**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1476	1.3508	1.4154	2.3300e-003		0.0700	0.0700		0.0658	0.0658	0.0000	200.4423	200.4423	0.0480	0.0000	201.6428
Total	**0.1476**	**1.3508**	**1.4154**	**2.3300e-003**		**0.0700**	**0.0700**		**0.0658**	**0.0658**	**0.0000**	**200.4423**	**200.4423**	**0.0480**	**0.0000**	**201.6428**

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	0.0153	0.4873	0.1293	1.3400e-003	0.0330	9.9000e-004	0.0340	9.5400e-003	9.5000e-004	0.0105	0.0000	128.7118	128.7118	5.4100e-003	0.0000	128.8470
Worker	0.0637	0.0424	0.4656	1.5500e-003	0.1756	1.0800e-003	0.1767	0.0467	1.0000e-003	0.0477	0.0000	140.1037	140.1037	2.9700e-003	0.0000	140.1778

Total	**0.0789**	**0.5297**	**0.5948**	**2.8900e-003**	**0.2086**	**2.0700e-003**	**0.2107**	**0.0563**	**1.9500e-003**	**0.0582**	**0.0000**	**268.8155**	**268.8155**	**8.3800e-003**	**0.0000**	**269.0248**

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	0.0462	0.9439	1.5461	2.3300e-003		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003	0.0000	200.4421	200.4421	0.0480	0.0000	201.6426
Total	**0.0462**	**0.9439**	**1.5461**	**2.3300e-003**		**7.3200e-003**	**7.3200e-003**		**7.3200e-003**	**7.3200e-003**	**0.0000**	**200.4421**	**200.4421**	**0.0480**	**0.0000**	**201.6426**

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	0.0153	0.4873	0.1293	1.3400e-003	0.0330	9.9000e-004	0.0340	9.5400e-003	9.5000e-004	0.0105	0.0000	128.7118	128.7118	5.4100e-003	0.0000	128.8470
Worker	0.0637	0.0424	0.4656	1.5500e-003	0.1756	1.0800e-003	0.1767	0.0467	1.0000e-003	0.0477	0.0000	140.1037	140.1037	2.9700e-003	0.0000	140.1778
Total	**0.0789**	**0.5297**	**0.5948**	**2.8900e-003**	**0.2086**	**2.0700e-003**	**0.2107**	**0.0563**	**1.9500e-003**	**0.0582**	**0.0000**	**268.8155**	**268.8155**	**8.3800e-003**	**0.0000**	**269.0248**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9300e-003	0.1001	0.1312	2.1000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	18.0248	18.0248	5.8300e-003	0.0000	18.1705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.9300e-003**	**0.1001**	**0.1312**	**2.1000e-004**		**5.1100e-003**	**5.1100e-003**		**4.7000e-003**	**4.7000e-003**	**0.0000**	**18.0248**	**18.0248**	**5.8300e-003**	**0.0000**	**18.1705**

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	3.9000e-004	2.6000e-004	2.8400e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.8541	0.8541	2.0000e-005	0.0000	0.8546
Total	**3.9000e-004**	**2.6000e-004**	**2.8400e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.8541**	**0.8541**	**2.0000e-005**	**0.0000**	**0.8546**

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	3.0100e-003	0.0904	0.1557	2.1000e-004		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	18.0248	18.0248	5.8300e-003	0.0000	18.1705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.0100e-003**	**0.0904**	**0.1557**	**2.1000e-004**		**3.4000e-004**	**3.4000e-004**		**3.4000e-004**	**3.4000e-004**	**0.0000**	**18.0248**	**18.0248**	**5.8300e-003**	**0.0000**	**18.1705**

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	3.9000e-004	2.6000e-004	2.8400e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.8541	0.8541	2.0000e-005	0.0000	0.8546
Total	**3.9000e-004**	**2.6000e-004**	**2.8400e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.8541**	**0.8541**	**2.0000e-005**	**0.0000**	**0.8546**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8539					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**1.8558**	**0.0127**	**0.0163**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

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	1.3200e-003	8.8000e-004	9.6500e-003	3.0000e-005	3.6400e-003	2.0000e-005	3.6600e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.9041	2.9041	6.0000e-005	0.0000	2.9056
Total	**1.3200e-003**	**8.8000e-004**	**9.6500e-003**	**3.0000e-005**	**3.6400e-003**	**2.0000e-005**	**3.6600e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**2.9041**	**2.9041**	**6.0000e-005**	**0.0000**	**2.9056**

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	1.8539					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9000e-004	9.5400e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**1.8544**	**9.5400e-003**	**0.0165**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

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	1.3200e-003	8.8000e-004	9.6500e-003	3.0000e-005	3.6400e-003	2.0000e-005	3.6600e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.9041	2.9041	6.0000e-005	0.0000	2.9056
Total	**1.3200e-003**	**8.8000e-004**	**9.6500e-003**	**3.0000e-005**	**3.6400e-003**	**2.0000e-005**	**3.6600e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**2.9041**	**2.9041**	**6.0000e-005**	**0.0000**	**2.9056**

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	0.4460	1.6931	4.9942	0.0182	1.7812	0.0143	1.7955	0.4768	0.0133	0.4901	0.0000	1,667.1021	1,667.1021	0.0528	0.0000	1,668.4223
Unmitigated	0.4460	1.6931	4.9942	0.0182	1.7812	0.0143	1.7955	0.4768	0.0133	0.4901	0.0000	1,667.1021	1,667.1021	0.0528	0.0000	1,668.4223

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,629.25	1,565.55	1435.70	3,678,050	3,678,050
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		

Strip Mall	788.90	748.31	363.65	1,112,442	1,112,442
Total	2,418.15	2,313.86	1,799.35	4,790,492	4,790,492

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	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
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Enclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Parking Lot	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Strip Mall	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

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	369.2584	369.2584	0.0282	5.8300e-003	371.7004
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	369.2584	369.2584	0.0282	5.8300e-003	371.7004

NaturalGas Mitigated	0.0116	0.0996	0.0432	6.3000e-004		8.0400e-003	8.0400e-003		8.0400e-003	8.0400e-003	0.0000	115.2045	115.2045	2.2100e-003	2.1100e-003	115.8891
NaturalGas Unmitigated	0.0116	0.0996	0.0432	6.3000e-004		8.0400e-003	8.0400e-003		8.0400e-003	8.0400e-003	0.0000	115.2045	115.2045	2.2100e-003	2.1100e-003	115.8891

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	2.11667e+006	0.0114	0.0975	0.0415	6.2000e-004		7.8900e-003	7.8900e-003		7.8900e-003	7.8900e-003	0.0000	112.9533	112.9533	2.1600e-003	2.0700e-003	113.6245
Enclosed Parking with Elevator	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
Strip Mall	42186	2.3000e-004	2.0700e-003	1.7400e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2512	2.2512	4.0000e-005	4.0000e-005	2.2646
Total		**0.0116**	**0.0996**	**0.0432**	**6.3000e-004**		**8.0500e-003**	**8.0500e-003**		**8.0500e-003**	**8.0500e-003**	**0.0000**	**115.2045**	**115.2045**	**2.2000e-003**	**2.1100e-003**	**115.8891**

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	2.11667e+006	0.0114	0.0975	0.0415	6.2000e-004		7.8900e-003	7.8900e-003		7.8900e-003	7.8900e-003	0.0000	112.9533	112.9533	2.1600e-003	2.0700e-003	113.6245
Enclosed Parking with Elevator	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
Strip Mall	42186	2.3000e-004	2.0700e-003	1.7400e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2512	2.2512	4.0000e-005	4.0000e-005	2.2646

Total		**0.0116**	**0.0996**	**0.0432**	**6.3000e-004**		**8.0500e-003**	**8.0500e-003**		**8.0500e-003**	**8.0500e-003**	**0.0000**	**115.2045**	**115.2045**	**2.2000e-003**	**2.1100e-003**	**115.8891**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.01145e+006	174.3380	0.0133	2.7500e-003	175.4909
Enclosed Parking with Elevator	935256	161.2055	0.0123	2.5500e-003	162.2716
Parking Lot	5320	0.9170	7.0000e-005	1.0000e-005	0.9231
Strip Mall	190282	32.7980	2.5000e-003	5.2000e-004	33.0149
Total		**369.2584**	**0.0282**	**5.8300e-003**	**371.7004**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.01145e+006	174.3380	0.0133	2.7500e-003	175.4909
Enclosed Parking with Elevator	935256	161.2055	0.0123	2.5500e-003	162.2716
Parking Lot	5320	0.9170	7.0000e-005	1.0000e-005	0.9231
Strip Mall	190282	32.7980	2.5000e-003	5.2000e-004	33.0149
Total		**369.2584**	**0.0282**	**5.8300e-003**	**371.7004**

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	1.8434	0.0340	2.6010	1.6500e-003		0.1214	0.1214		0.1214	0.1214	11.1695	7.5675	18.7370	0.0208	7.3000e-004	19.4759
Unmitigated	1.8434	0.0340	2.6010	1.6500e-003		0.1214	0.1214		0.1214	0.1214	11.1695	7.5675	18.7370	0.0208	7.3000e-004	19.4759

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	0.1854					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0377					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5653	0.0130	0.7784	1.5500e-003		0.1113	0.1113		0.1113	0.1113	11.1695	4.5878	15.7573	0.0180	7.3000e-004	16.4244
Landscaping	0.0551	0.0210	1.8226	1.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	2.9797	2.9797	2.8700e-003	0.0000	3.0515
Total	**1.8434**	**0.0340**	**2.6010**	**1.6500e-003**		**0.1214**	**0.1214**		**0.1214**	**0.1214**	**11.1695**	**7.5675**	**18.7370**	**0.0208**	**7.3000e-004**	**19.4759**

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	0.1854					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0377					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5653	0.0130	0.7784	1.5500e-003		0.1113	0.1113		0.1113	0.1113	11.1695	4.5878	15.7573	0.0180	7.3000e-004	16.4244
Landscaping	0.0551	0.0210	1.8226	1.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	2.9797	2.9797	2.8700e-003	0.0000	3.0515
Total	**1.8434**	**0.0340**	**2.6010**	**1.6500e-003**		**0.1214**	**0.1214**		**0.1214**	**0.1214**	**11.1695**	**7.5675**	**18.7370**	**0.0208**	**7.3000e-004**	**19.4759**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	28.1588	0.5648	0.0137	46.3487
Unmitigated	28.1588	0.5648	0.0137	46.3487

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	15.9627 / 10.0635	26.0232	0.5218	0.0126	42.8255
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.808107	2.1355	0.0431	1.0400e-003	3.5233
Total		**28.1588**	**0.5648**	**0.0137**	**46.3487**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	15.9627 / 10.0635	26.0232	0.5218	0.0126	42.8255
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.808107	2.1355	0.0431	1.0400e-003	3.5233
Total		**28.1588**	**0.5648**	**0.0137**	**46.3487**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.6710	1.5762	0.0000	66.0762
Unmitigated	26.6710	1.5762	0.0000	66.0762

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	112.7	22.8771	1.3520	0.0000	56.6770
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992
Total		**26.6710**	**1.5762**	**0.0000**	**66.0762**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	112.7	22.8771	1.3520	0.0000	56.6770
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992
Total		**26.6710**	**1.5762**	**0.0000**	**66.0762**

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

Avalon West Valley III - Operational

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	368.00	Space	0.00	147,200.00	0
Parking Lot	38.00	Space	0.00	15,200.00	0
Unenclosed Parking with Elevator	742.00	Space	0.00	296,800.00	0
Apartments Mid Rise	300.00	Dwelling Unit	6.80	300,000.00	858
Strip Mall	17.80	1000sqft	0.00	17,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
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 Future Rate

Land Use - assigned acreage to residential

Construction Phase - operational run only

Off-road Equipment - operational run only

Trips and VMT - operational run only

Demolition - Estiamted from Google Earth assuming two level buildings

Grading - Estimated export cy based on parking area size, two levels of excavation and 20% swell

Vehicle Trips - TIA rates w/adjustments Res = 5.10,4.90,4.50 Retail = 24.05,22.81,11.08

Woodstoves - No hearth = 96 nat gas

Water And Wastewater - all WTP treatment

Construction Off-road Equipment Mitigation -

Energy Mitigation - Meet new 2020 Title 24 requirements

Water Mitigation - Outdoor water conservation strategy

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	PhaseEndDate	9/10/2021	8/30/2021
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	45.00	96.00
tblFireplaces	NumberWood	51.00	0.00
tblLandUse	LotAcreage	3.31	0.00
tblLandUse	LotAcreage	0.34	0.00
tblLandUse	LotAcreage	6.68	0.00
tblLandUse	LotAcreage	7.89	6.80
tblLandUse	LotAcreage	0.41	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblVehicleTrips	ST_TR	6.39	4.90
tblVehicleTrips	ST_TR	42.04	22.81
tblVehicleTrips	SU_TR	5.86	4.50
tblVehicleTrips	SU_TR	20.43	11.08
tblVehicleTrips	WD_TR	6.65	5.10
tblVehicleTrips	WD_TR	44.32	24.05
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
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	1.5700	0.0361	2.2417	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.6440	15.6440	3.7800e-003	2.2000e-004	15.8039
Energy	0.0142	0.1215	0.0526	7.7000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	0.0000	518.4140	518.4140	0.0405	0.0104	522.5236
Mobile	0.3681	1.4053	4.1869	0.0154	1.5089	0.0120	1.5210	0.4039	0.0112	0.4151	0.0000	1,408.0414	1,408.0414	0.0443	0.0000	1,409.1485
Waste						0.0000	0.0000		0.0000	0.0000	31.8067	0.0000	31.8067	1.8797	0.0000	78.7996

Water						0.0000	0.0000		0.0000	0.0000	7.3820	20.8963	28.2782	0.0275	0.0165	33.8784
Total	**1.9524**	**1.5629**	**6.4812**	**0.0163**	**1.5089**	**0.0351**	**1.5440**	**0.4039**	**0.0342**	**0.4381**	**39.1886**	**1,962.9957**	**2,002.1843**	**1.9958**	**0.0271**	**2,060.1540**

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	1.5700	0.0361	2.2417	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.6440	15.6440	3.7800e-003	2.2000e-004	15.8039
Energy	0.0115	0.0981	0.0424	6.3000e-004		7.9300e-003	7.9300e-003		7.9300e-003	7.9300e-003	0.0000	458.5594	458.5594	0.0367	9.2200e-003	462.2238
Mobile	0.3681	1.4053	4.1869	0.0154	1.5089	0.0120	1.5210	0.4039	0.0112	0.4151	0.0000	1,408.0414	1,408.0414	0.0443	0.0000	1,409.1485
Waste						0.0000	0.0000		0.0000	0.0000	31.8067	0.0000	31.8067	1.8797	0.0000	78.7996
Water						0.0000	0.0000		0.0000	0.0000	7.3820	19.6872	27.0692	0.0274	0.0165	32.6589
Total	**1.9496**	**1.5395**	**6.4710**	**0.0162**	**1.5089**	**0.0332**	**1.5421**	**0.4039**	**0.0324**	**0.4362**	**39.1886**	**1,901.9320**	**1,941.1206**	**1.9918**	**0.0259**	**1,998.6347**

	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	**0.14**	**1.50**	**0.16**	**0.86**	**0.00**	**5.36**	**0.12**	**0.00**	**5.49**	**0.43**	**0.00**	**3.11**	**3.05**	**0.20**	**4.43**	**2.99**

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	0.3681	1.4053	4.1869	0.0154	1.5089	0.0120	1.5210	0.4039	0.0112	0.4151	0.0000	1,408.0414	1,408.0414	0.0443	0.0000	1,409.1485
Unmitigated	0.3681	1.4053	4.1869	0.0154	1.5089	0.0120	1.5210	0.4039	0.0112	0.4151	0.0000	1,408.0414	1,408.0414	0.0443	0.0000	1,409.1485

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,530.00	1,470.00	1350.00	3,454,513	3,454,513
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	428.09	406.02	197.22	603,625	603,625
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	1,958.09	1,876.02	1,547.22	4,058,138	4,058,138

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 with Elevator	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
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	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	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

Enclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Parking Lot	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Strip Mall	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Unenclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	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	345.0137	345.0137	0.0345	7.1400e-003	348.0035
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	377.8526	377.8526	0.0378	7.8200e-003	381.1269
NaturalGas Mitigated	0.0115	0.0981	0.0424	6.3000e-004		7.9300e-003	7.9300e-003		7.9300e-003	7.9300e-003	0.0000	113.5456	113.5456	2.1800e-003	2.0800e-003	114.2204
NaturalGas Unmitigated	0.0142	0.1215	0.0526	7.7000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	0.0000	140.5614	140.5614	2.6900e-003	2.5800e-003	141.3967

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	2.59184e+006	0.0140	0.1194	0.0508	7.6000e-004		9.6600e-003	9.6600e-003		9.6600e-003	9.6600e-003	0.0000	138.3102	138.3102	2.6500e-003	2.5400e-003	139.1321
Enclosed Parking with Elevator	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
Strip Mall	42186	2.3000e-004	2.0700e-003	1.7400e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2512	2.2512	4.0000e-005	4.0000e-005	2.2646
Unenclosed Parking with Elevator	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		**0.0142**	**0.1215**	**0.0526**	**7.7000e-004**		**9.8200e-003**	**9.8200e-003**		**9.8200e-003**	**9.8200e-003**	**0.0000**	**140.5614**	**140.5614**	**2.6900e-003**	**2.5800e-003**	**141.3967**

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	2.09823e+006	0.0113	0.0967	0.0411	6.2000e-004		7.8200e-003	7.8200e-003		7.8200e-003	7.8200e-003	0.0000	111.9698	111.9698	2.1500e-003	2.0500e-003	112.6352
Enclosed Parking with Elevator	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
Strip Mall	29530.2	1.6000e-004	1.4500e-003	1.2200e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5758	1.5758	3.0000e-005	3.0000e-005	1.5852
Unenclosed Parking with Elevator	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		**0.0115**	**0.0981**	**0.0424**	**6.3000e-004**		**7.9300e-003**	**7.9300e-003**		**7.9300e-003**	**7.9300e-003**	**0.0000**	**113.5456**	**113.5456**	**2.1800e-003**	**2.0800e-003**	**114.2204**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.23851e+006	162.9152	0.0163	3.3700e-003	164.3269
Enclosed Parking with Elevator	862592	113.4669	0.0114	2.3500e-003	114.4501
Parking Lot	5320	0.6998	7.0000e-005	1.0000e-005	0.7059
Strip Mall	190282	25.0300	2.5000e-003	5.2000e-004	25.2469
Unenclosed Parking with Elevator	575792	75.7407	7.5700e-003	1.5700e-003	76.3970
Total		**377.8526**	**0.0378**	**7.8200e-003**	**381.1269**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.1767e+006	154.7858	0.0155	3.2000e-003	156.1271
Enclosed Parking with Elevator	689485	90.6961	9.0700e-003	1.8800e-003	91.4820
Parking Lot	5320	0.6998	7.0000e-005	1.0000e-005	0.7059
Strip Mall	175544	23.0913	2.3100e-003	4.8000e-004	23.2914
Unenclosed Parking with Elevator	575792	75.7407	7.5700e-003	1.5700e-003	76.3970
Total		**345.0137**	**0.0345**	**7.1400e-003**	**348.0035**

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	1.5700	0.0361	2.2417	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.6440	15.6440	3.7800e-003	2.2000e-004	15.8039
Unmitigated	1.5700	0.0361	2.2417	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.6440	15.6440	3.7800e-003	2.2000e-004	15.8039

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	0.2300					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2709					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0104	4.4000e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	11.9846	11.9846	2.3000e-004	2.2000e-004	12.0558
Landscaping	0.0679	0.0258	2.2373	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.6595	3.6595	3.5500e-003	0.0000	3.7481
Total	**1.5700**	**0.0361**	**2.2417**	**1.9000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**15.6440**	**15.6440**	**3.7800e-003**	**2.2000e-004**	**15.8039**

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	0.2300					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2709					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0104	4.4000e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	11.9846	11.9846	2.3000e-004	2.2000e-004	12.0558
Landscaping	0.0679	0.0258	2.2373	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.6595	3.6595	3.5500e-003	0.0000	3.7481
Total	**1.5700**	**0.0361**	**2.2417**	**1.9000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**15.6440**	**15.6440**	**3.7800e-003**	**2.2000e-004**	**15.8039**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.0692	0.0274	0.0165	32.6589
Unmitigated	28.2782	0.0275	0.0165	33.8784

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.5462 / 12.3226	26.5012	0.0258	0.0154	31.7476
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.808107	1.7770	1.7400e-003	1.0400e-003	2.1308
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**28.2782**	**0.0275**	**0.0165**	**33.8784**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.5462 / 9.85809	25.3666	0.0257	0.0154	30.6031
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.646486	1.7026	1.7300e-003	1.0400e-003	2.0558

Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**27.0692**	**0.0274**	**0.0165**	**32.6589**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	31.8067	1.8797	0.0000	78.7996
Unmitigated	31.8067	1.8797	0.0000	78.7996

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	138	28.0128	1.6555	0.0000	69.4004
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**31.8067**	**1.8797**	**0.0000**	**78.7996**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	138	28.0128	1.6555	0.0000	69.4004
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**31.8067**	**1.8797**	**0.0000**	**78.7996**

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

Avalon West Valley III - Operational

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	368.00	Space	0.00	147,200.00	0
Parking Lot	38.00	Space	0.00	15,200.00	0
Unenclosed Parking with Elevator	742.00	Space	0.00	296,800.00	0
Apartments Mid Rise	300.00	Dwelling Unit	6.80	300,000.00	858
Strip Mall	17.80	1000sqft	0.00	17,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
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 Future Rate

Land Use - assigned acreage to residential

Construction Phase - operational run only

Off-road Equipment - operational run only

Trips and VMT - operational run only

Demolition - Estiamted from Google Earth assuming two level buildings

Grading - Estimated export cy based on parking area size, two levels of excavation and 20% swell

Vehicle Trips - TIA rates w/adjustments Res = 5.10,4.90,4.50 Retail = 24.05,22.81,11.08

Woodstoves - No hearth = 96 nat gas

Water And Wastewater - all WTP treatment

Construction Off-road Equipment Mitigation -

Energy Mitigation - Meet new 2020 Title 24 requirements

Water Mitigation - Outdoor water conservation strategy

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	PhaseEndDate	9/10/2021	8/30/2021
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	45.00	96.00
tblFireplaces	NumberWood	51.00	0.00
tblLandUse	LotAcreage	3.31	0.00
tblLandUse	LotAcreage	0.34	0.00
tblLandUse	LotAcreage	6.68	0.00
tblLandUse	LotAcreage	7.89	6.80
tblLandUse	LotAcreage	0.41	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblVehicleTrips	ST_TR	6.39	4.90
tblVehicleTrips	ST_TR	42.04	22.81
tblVehicleTrips	SU_TR	5.86	4.50
tblVehicleTrips	SU_TR	20.43	11.08
tblVehicleTrips	WD_TR	6.65	5.10
tblVehicleTrips	WD_TR	44.32	24.05
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
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	1.5695	0.0361	2.2367	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.6440	15.6440	3.7500e-003	2.2000e-004	15.8033
Energy	0.0142	0.1215	0.0526	7.7000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	0.0000	518.4140	518.4140	0.0405	0.0104	522.5236
Mobile	0.2753	1.1844	3.0803	0.0131	1.5087	8.8400e-003	1.5175	0.4038	8.2200e-003	0.4120	0.0000	1,206.7406	1,206.7406	0.0351	0.0000	1,207.6184
Waste						0.0000	0.0000		0.0000	0.0000	31.8067	0.0000	31.8067	1.8797	0.0000	78.7996

Water						0.0000	0.0000		0.0000	0.0000	7.3820	20.8963	28.2782	0.0275	0.0165	33.8784
Total	**1.8591**	**1.3420**	**5.3696**	**0.0141**	**1.5087**	**0.0319**	**1.5406**	**0.4038**	**0.0313**	**0.4350**	**39.1886**	**1,761.6949**	**1,800.8835**	**1.9866**	**0.0271**	**1,858.6232**

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	1.5695	0.0361	2.2367	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.6440	15.6440	3.7500e-003	2.2000e-004	15.8033
Energy	0.0115	0.0981	0.0424	6.3000e-004		7.9300e-003	7.9300e-003		7.9300e-003	7.9300e-003	0.0000	458.5594	458.5594	0.0367	9.2200e-003	462.2238
Mobile	0.2753	1.1844	3.0803	0.0131	1.5087	8.8400e-003	1.5175	0.4038	8.2200e-003	0.4120	0.0000	1,206.7406	1,206.7406	0.0351	0.0000	1,207.6184
Waste						0.0000	0.0000		0.0000	0.0000	31.8067	0.0000	31.8067	1.8797	0.0000	78.7996
Water						0.0000	0.0000		0.0000	0.0000	7.3820	19.6872	27.0692	0.0274	0.0165	32.6589
Total	**1.8563**	**1.3186**	**5.3594**	**0.0139**	**1.5087**	**0.0300**	**1.5387**	**0.4038**	**0.0294**	**0.4331**	**39.1886**	**1,700.6312**	**1,739.8198**	**1.9826**	**0.0259**	**1,797.1040**

	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	**0.15**	**1.74**	**0.19**	**1.00**	**0.00**	**5.90**	**0.12**	**0.00**	**6.01**	**0.43**	**0.00**	**3.47**	**3.39**	**0.20**	**4.43**	**3.31**

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	0.2753	1.1844	3.0803	0.0131	1.5087	8.8400e-003	1.5175	0.4038	8.2200e-003	0.4120	0.0000	1,206.7406	1,206.7406	0.0351	0.0000	1,207.6184
Unmitigated	0.2753	1.1844	3.0803	0.0131	1.5087	8.8400e-003	1.5175	0.4038	8.2200e-003	0.4120	0.0000	1,206.7406	1,206.7406	0.0351	0.0000	1,207.6184

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,530.00	1,470.00	1350.00	3,454,513	3,454,513
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	428.09	406.02	197.22	603,625	603,625
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	1,958.09	1,876.02	1,547.22	4,058,138	4,058,138

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	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
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	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	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Enclosed Parking with Elevator	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Parking Lot	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Strip Mall	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Unenclosed Parking with Elevator	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	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	345.0137	345.0137	0.0345	7.1400e-003	348.0035
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	377.8526	377.8526	0.0378	7.8200e-003	381.1269
NaturalGas Mitigated	0.0115	0.0981	0.0424	6.3000e-004		7.9300e-003	7.9300e-003		7.9300e-003	7.9300e-003	0.0000	113.5456	113.5456	2.1800e-003	2.0800e-003	114.2204
NaturalGas Unmitigated	0.0142	0.1215	0.0526	7.7000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	0.0000	140.5614	140.5614	2.6900e-003	2.5800e-003	141.3967

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	2.59184e+006	0.0140	0.1194	0.0508	7.6000e-004		9.6600e-003	9.6600e-003		9.6600e-003	9.6600e-003	0.0000	138.3102	138.3102	2.6500e-003	2.5400e-003	139.1321
Enclosed Parking with Elevator	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
Strip Mall	42186	2.3000e-004	2.0700e-003	1.7400e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2512	2.2512	4.0000e-005	4.0000e-005	2.2646
Unenclosed Parking with Elevator	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		**0.0142**	**0.1215**	**0.0526**	**7.7000e-004**		**9.8200e-003**	**9.8200e-003**		**9.8200e-003**	**9.8200e-003**	**0.0000**	**140.5614**	**140.5614**	**2.6900e-003**	**2.5800e-003**	**141.3967**

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	2.09823e+006	0.0113	0.0967	0.0411	6.2000e-004		7.8200e-003	7.8200e-003		7.8200e-003	7.8200e-003	0.0000	111.9698	111.9698	2.1500e-003	2.0500e-003	112.6352
Enclosed Parking with Elevator	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
Strip Mall	29530.2	1.6000e-004	1.4500e-003	1.2200e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5758	1.5758	3.0000e-005	3.0000e-005	1.5852
Unenclosed Parking with Elevator	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		**0.0115**	**0.0981**	**0.0424**	**6.3000e-004**		**7.9300e-003**	**7.9300e-003**		**7.9300e-003**	**7.9300e-003**	**0.0000**	**113.5456**	**113.5456**	**2.1800e-003**	**2.0800e-003**	**114.2204**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.23851e+006	162.9152	0.0163	3.3700e-003	164.3269

Enclosed Parking with Elevator	862592	113.4669	0.0114	2.3500e-003	114.4501
Parking Lot	5320	0.6998	7.0000e-005	1.0000e-005	0.7059
Strip Mall	190282	25.0300	2.5000e-003	5.2000e-004	25.2469
Unenclosed Parking with Elevator	575792	75.7407	7.5700e-003	1.5700e-003	76.3970
Total		**377.8526**	**0.0378**	**7.8200e-003**	**381.1269**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.1767e+006	154.7858	0.0155	3.2000e-003	156.1271
Enclosed Parking with Elevator	689485	90.6961	9.0700e-003	1.8800e-003	91.4820
Parking Lot	5320	0.6998	7.0000e-005	1.0000e-005	0.7059
Strip Mall	175544	23.0913	2.3100e-003	4.8000e-004	23.2914
Unenclosed Parking with Elevator	575792	75.7407	7.5700e-003	1.5700e-003	76.3970
Total		**345.0137**	**0.0345**	**7.1400e-003**	**348.0035**

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	1.5695	0.0361	2.2367	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.6440	15.6440	3.7500e-003	2.2000e-004	15.8033
Unmitigated	1.5695	0.0361	2.2367	1.8000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	15.6440	15.6440	3.7500e-003	2.2000e-004	15.8033

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	0.2300					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2709					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0104	4.4000e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	11.9846	11.9846	2.3000e-004	2.2000e-004	12.0558
Landscaping	0.0674	0.0257	2.2323	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.6595	3.6595	3.5200e-003	0.0000	3.7475
Total	**1.5695**	**0.0361**	**2.2367**	**1.9000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**15.6440**	**15.6440**	**3.7500e-003**	**2.2000e-004**	**15.8033**

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	0.2300					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2709					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0104	4.4000e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	11.9846	11.9846	2.3000e-004	2.2000e-004	12.0558
Landscaping	0.0674	0.0257	2.2323	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.6595	3.6595	3.5200e-003	0.0000	3.7475
Total	**1.5695**	**0.0361**	**2.2367**	**1.9000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**15.6440**	**15.6440**	**3.7500e-003**	**2.2000e-004**	**15.8033**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.0692	0.0274	0.0165	32.6589
Unmitigated	28.2782	0.0275	0.0165	33.8784

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.5462 / 12.3226	26.5012	0.0258	0.0154	31.7476
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.808107	1.7770	1.7400e-003	1.0400e-003	2.1308
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**28.2782**	**0.0275**	**0.0165**	**33.8784**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.5462 / 9.85809	25.3666	0.0257	0.0154	30.6031
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.646486	1.7026	1.7300e-003	1.0400e-003	2.0558
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000

Total		**27.0692**	**0.0274**	**0.0165**	**32.6589**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	31.8067	1.8797	0.0000	78.7996
Unmitigated	31.8067	1.8797	0.0000	78.7996

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	138	28.0128	1.6555	0.0000	69.4004
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992

Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**31.8067**	**1.8797**	**0.0000**	**78.7996**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	138	28.0128	1.6555	0.0000	69.4004
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**31.8067**	**1.8797**	**0.0000**	**78.7996**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3: Operational Community Risk

Saratoga Avenue Emissions and Health Risk Calculations

Avalon Bay West Valley - San Jose, CA
Saratoga Avenue
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	Diesel ADT	Average Speed (mph)
NB-Saratoga	Northbound Saratoga Ave	N	3	948	36	11.0	3.4	336	Variable
SB-Saratoga	Southbound Saratoga Ave	S	3	955	36	11.0	3.4	336	Variable

2021 Hourly Diesel Traffic Volumes Per Direction and DPM Emissions - NB-Saratoga

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	2.48%	8	0.0159	9	7.72%	26	0.0124	17	7.07%	24	0.0121
2	1.87%	6	0.0159	10	4.53%	15	0.0158	18	5.88%	20	0.0113
3	2.13%	7	0.0160	11	3.98%	13	0.0158	19	5.29%	18	0.0108
4	2.07%	7	0.0159	12	8.04%	27	0.0126	20	0.63%	2	0.0153
5	1.44%	5	0.0159	13	7.48%	25	0.0123	21	1.98%	7	0.0157
6	1.98%	7	0.0159	14	7.48%	25	0.0123	22	2.59%	9	0.0158
7	3.65%	12	0.0158	15	6.83%	23	0.0120	23	1.61%	5	0.0158
8	6.59%	22	0.0118	16	6.10%	20	0.0115	24	0.58%	2	0.0156
								Total		336	

2021 Hourly Diesel Traffic Volumes Per Direction and DPM Emissions - SB-Saratoga

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	2.48%	8	0.0159	9	7.72%	26	0.0124	17	7.07%	24	0.0121
2	1.87%	6	0.0159	10	4.53%	15	0.0158	18	5.88%	20	0.0113
3	2.13%	7	0.0160	11	3.98%	13	0.0158	19	5.29%	18	0.0108
4	2.07%	7	0.0159	12	8.04%	27	0.0126	20	0.63%	2	0.0153
5	1.44%	5	0.0159	13	7.48%	25	0.0123	21	1.98%	7	0.0157
6	1.98%	7	0.0159	14	7.48%	25	0.0123	22	2.59%	9	0.0158
7	3.65%	12	0.0158	15	6.83%	23	0.0120	23	1.61%	5	0.0158
8	6.59%	22	0.0118	16	6.10%	20	0.0115	24	0.58%	2	0.0156
								Total		336	

Avalon Bay West Valley - San Jose, CA
Saratoga Avenue
PM2.5 & TOG Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2021

Group Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	ADT	Average Speed (mph)	Average Vehicles per Hour
NB-Saratoga	Northbound Saratoga Ave	N	3	948	36	11.0	1.3	15,985	Variable	666
SB-Saratoga	Southbound Saratoga Ave	S	3	955	36	11.0	1.3	15,985	Variable	666

2021 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - NB-Saratoga

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.09%	174	0.0214	9	7.07%	1131	0.0201	17	7.39%	1182	0.0199
2	0.37%	58	0.0223	10	4.27%	682	0.0207	18	8.29%	1325	0.0197
3	0.30%	49	0.0229	11	4.60%	736	0.0203	19	5.80%	927	0.0197
4	0.19%	30	0.0304	12	5.84%	934	0.0203	20	4.37%	698	0.0196
5	0.45%	73	0.0219	13	6.17%	987	0.0201	21	3.28%	525	0.0199
6	0.82%	131	0.0226	14	6.03%	964	0.0201	22	3.31%	529	0.0201
7	3.77%	602	0.0205	15	7.08%	1131	0.0199	23	2.47%	395	0.0199
8	7.90%	1264	0.0198	16	7.23%	1155	0.0198	24	1.89%	303	0.0197
								Total		15,985	

2021 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - SB-Saratoga

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.09%	174	0.0214	9	7.07%	1131	0.0201	17	7.39%	1182	0.0199
2	0.37%	58	0.0223	10	4.27%	682	0.0207	18	8.29%	1325	0.0197
3	0.30%	49	0.0229	11	4.60%	736	0.0203	19	5.80%	927	0.0197
4	0.19%	30	0.0304	12	5.84%	934	0.0203	20	4.37%	698	0.0196
5	0.45%	73	0.0219	13	6.17%	987	0.0201	21	3.28%	525	0.0199
6	0.82%	131	0.0226	14	6.03%	964	0.0201	22	3.31%	529	0.0201
7	3.77%	602	0.0205	15	7.08%	1131	0.0199	23	2.47%	395	0.0199
8	7.90%	1264	0.0198	16	7.23%	1155	0.0198	24	1.89%	303	0.0197
								Total		15,985	

Avalon Bay West Valley - San Jose, CA
Saratoga Avenue
Entrained PM2.5 Road Dust Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2021

Group Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	ADT	Average Speed (mph)
NB-Saratoga	Northbound Saratoga Ave	N	3	948	36	11.0	1.3	15,985	Variable
SB-Saratoga	Southbound Saratoga Ave	S	3	955	36	11.0	1.3	15,985	Variable

2021 Hourly Traffic Volumes Per Direction and Road Dust PM2.5 Emissions - NB-Saratoga

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.09%	174	0.0153	9	7.07%	1131	0.0153	17	7.39%	1182	0.0153
2	0.37%	58	0.0153	10	4.27%	682	0.0153	18	8.29%	1325	0.0153
3	0.30%	49	0.0153	11	4.60%	736	0.0153	19	5.80%	927	0.0153
4	0.19%	30	0.0153	12	5.84%	934	0.0153	20	4.37%	698	0.0153
5	0.45%	73	0.0153	13	6.17%	987	0.0153	21	3.28%	525	0.0153
6	0.82%	131	0.0153	14	6.03%	964	0.0153	22	3.31%	529	0.0153
7	3.77%	602	0.0153	15	7.08%	1131	0.0153	23	2.47%	395	0.0153
8	7.90%	1264	0.0153	16	7.23%	1155	0.0153	24	1.89%	303	0.0153
								Total		15,985	

2021 Hourly Traffic Volumes Per Direction and Road Dust PM2.5 Emissions - SB-Saratoga

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.09%	174	0.0153	9	7.07%	1131	0.0153	17	7.39%	1182	0.0153
2	0.37%	58	0.0153	10	4.27%	682	0.0153	18	8.29%	1325	0.0153
3	0.30%	49	0.0153	11	4.60%	736	0.0153	19	5.80%	927	0.0153
4	0.19%	30	0.0153	12	5.84%	934	0.0153	20	4.37%	698	0.0153
5	0.45%	73	0.0153	13	6.17%	987	0.0153	21	3.28%	525	0.0153
6	0.82%	131	0.0153	14	6.03%	964	0.0153	22	3.31%	529	0.0153
7	3.77%	602	0.0153	15	7.08%	1131	0.0153	23	2.47%	395	0.0153
8	7.90%	1264	0.0153	16	7.23%	1155	0.0153	24	1.89%	303	0.0153
								Total		15,985	

Avalon Bay West Valley - San Jose, CA
Saratoga Avenue Traffic Data and PM2.5 & TOG Emission Factors - 35 mph

Analysis Year = ***2021***

Vehicle Type	2021 Caltrans Number Vehicles (veh/day)	2021 Number Vehicles (veh/day)	2021 Percent Diesel	Number Diesel Vehicles (veh/day)	Vehicle Speed (mph)	Emission Factors: Diesel Vehicles DPM (g/VMT)	All Vehicles: Total PM2.5 (g/VMT)	All Vehicles: Exhaust PM2.5 (g/VMT)	Gas Vehicles: Exhaust TOG (g/VMT)	Gas Vehicles: Running TOG (g/VMT)
LDA	22,384	22,384	1.10%	247	35	0.0088	0.0193	0.0016	0.0153	0.042
LDT	8,464	8,464	0.18%	15	35	0.0122	0.0193	0.0016	0.0237	0.090
MDT	748	748	10.15%	76	35	0.0160	0.0238	0.0031	0.0463	0.182
HDT	374	374	89.36%	334	35	0.0159	0.0732	0.0145	0.1364	0.097
Total	31,970	31,970	-	672	35	-	-		-	-
Mix Avg Emission Factor						**0.01319**	**0.02007**	**0.00177**	**0.01838**	**0.05832**
Increase From 2021		1.00								
Vehicles/Direction		15,985		336						
Avg Vehicles/Hour/Direction		**666**		**14**						

Traffic Data Year = ***2021***

Project Traffic Study	Total	Total* Truck	Truck by Axle: 2	3	4	5
Stevens Creek Blvd	31,970	1,122	748	125	125	125
			66.67%	11.11%	11.11%	11.11%
Percent of Total Vehicles		3.51%	2.34%	0.39%	0.39%	0.39%

* Truck percentage based on BAAQMD for trucks in Santa Clara Co. on non-state highways
2/3 of trucks assumed to be MDT and 1/3 assumed to be HDT
Traffic Increase per Year (%) = *1.00%*

Avalon Bay West Valley - San Jose, CA
Saratoga Avenue Traffic Data and Entrained PM2.5 Road Dust Emission Factors

$E_{2.5} = [k(sL)^{0.91} \times (W)^{1.02} \times (1-P/4N) \times 453.59$

where:

$E_{2.5} = PM_{2.5}$ emission factor (g/VMT)

k = particle size multiplier (g/VMT) [$k_{PM2.5} = k_{PM10} \times (0.0686/0.4572) = 1.0 \times 0.15 = 0.15$ g/VMT][a]

sL = roadway specific silt loading (g/m^2)

W = average weight of vehicles on road (Bay Area default = 2.4 tons)[a]

P = number of days with at least 0.01 inch of precipitation in the annual averaging period

N = number of days in the annual averaging period (default = 365)

Notes: [a] CARB 2014, Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust (Revised and updated, April 2014)

Road Type	Silt Loading (g/m^2)	Average Weight (tons)	County	No. Days ppt > 0.01"	$PM_{2.5}$ Emission Factor (g/VMT)
Major	0.032	2.4	Santa Clara	64	0.01528

SFBAAB[a]

Road Type	Silt Loading (g/m^2)
Collector	0.032
Freeway	0.02
Local	0.32
Major	0.032

SFBAAB[a]

County	>0.01 inch precipitation
Alameda	61
Contra Costa	60
Marin	66
Napa	68
San Francisco	67
San Mateo	60
Santa Clara	64
Solano	54
Sonoma	69

Avalon West Valley III, San Jose, CA - Saratoga Avenue - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Manzanita Site - On-Site Residential Receptors - 1st Floor (1.5 meter receptor heights)

Emissions Year	2021
Receptor Information	
Number of Receptors	33
Receptor Height =	1.5 meters above ground level (1st floor)
Receptor distances =	6 meter spacing
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2006-2010
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Meteorological Data Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2009-2013	0.00137	0.1021	0.3228

Meteorological Data Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Road Dust PM2.5	Vehicle PM2.5
2009-2013	0.1954	0.0845	0.11094

Avalon West Valley III, San Jose, CA - Saratoga Ave Maximum Cancer Risks
Manzanita Site - On-Site Residential Receptors - 1st Floor (1.5 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information				Cancer Risk (per million)			
					Annual TAC Conc (ug/m3)						
Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
0	2021	0.25	-0.25 - 0*	10	0.0014	0.1021	0.3228	0.019	0.008	0.001	0.03
1	2021	1	1	10	0.0014	0.1021	0.3228	0.23	0.096	0.018	0.34
2	2022	1	2	10	0.0014	0.1021	0.3228	0.23	0.096	0.018	0.34
3	2023	1	3	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
4	2024	1	4	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
5	2025	1	5	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
6	2026	1	6	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
7	2027	1	7	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
8	2028	1	8	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
9	2029	1	9	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
10	2030	1	10	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
11	2031	1	11	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
12	2032	1	12	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
13	2033	1	13	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
14	2034	1	14	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
15	2035	1	15	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
16	2036	1	16	3	0.0014	0.1021	0.3228	0.04	0.015	0.003	0.05
17	2037	1	17	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
18	2038	1	18	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
19	2039	1	19	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
20	2040	1	20	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
21	2041	1	21	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
22	2042	1	22	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
23	2043	1	23	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
24	2044	1	24	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
25	2045	1	25	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
26	2046	1	26	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
27	2047	1	27	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
28	2048	1	28	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
29	2049	1	29	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
30	2050	1	30	1	0.0014	0.1021	0.3228	0.00	0.002	0.000	0.006
Total Increased Cancer Risk			**Total**					1.02	0.434	0.081	**1.5**

* Third trimester of pregnancy

Avalon West Valley III, San Jose, CA - Saratoga Avenue - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Manzanita Site - On-Site Residential Receptors - 2nd Floor (4.6 meter receptor heights)

Emissions Year	2021
Receptor Information	
Number of Receptors	33
Receptor Height =	4.6 meters above ground level (1st floor)
Receptor distances =	6 meter spacing
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2006-2010
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Meteorological Data Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2009-2013	0.00126	0.0895	0.2830

Meteorological Data Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Road Dust PM2.5	Vehicle PM2.5
2009-2013	0.1713	0.0740	0.09724

Avalon West Valley III, San Jose, CA - Saratoga Ave Maximum Cancer Risks
Manzanita Site - On-Site Residential Receptors - 2nd Floor (4.6 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information							
					Annual TAC Conc (ug/m3)			Cancer Risk (per million)			
Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
0	2021	0.25	-0.25 - 0*	10	0.0013	0.0895	0.2830	0.017	0.007	0.001	0.03
1	2021	1	1	10	0.0013	0.0895	0.2830	0.21	0.084	0.016	0.31
2	2022	1	2	10	0.0013	0.0895	0.2830	0.21	0.084	0.016	0.31
3	2023	1	3	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
4	2024	1	4	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
5	2025	1	5	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
6	2026	1	6	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
7	2027	1	7	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
8	2028	1	8	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
9	2029	1	9	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
10	2030	1	10	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
11	2031	1	11	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
12	2032	1	12	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
13	2033	1	13	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
14	2034	1	14	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
15	2035	1	15	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
16	2036	1	16	3	0.0013	0.0895	0.2830	0.03	0.013	0.002	0.05
17	2037	1	17	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
18	2038	1	18	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
19	2039	1	19	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
20	2040	1	20	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
21	2041	1	21	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
22	2042	1	22	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
23	2043	1	23	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
24	2044	1	24	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
25	2045	1	25	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
26	2046	1	26	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
27	2047	1	27	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
28	2048	1	28	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
29	2049	1	29	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
30	2050	1	30	1	0.0013	0.0895	0.2830	0.00	0.001	0.000	0.005
Total Increased Cancer Risk			**Total**					0.94	0.380	0.071	**1.4**

* Third trimester of pregnancy

Avalon West Valley III, San Jose, CA - Saratoga Avenue - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Manzanita Site - On-Site Residential Receptors - 3rd Floor (7.7 meter receptor heights)

Emissions Year	2021
Receptor Information	
Number of Receptors	33
Receptor Height =	7.7 meters above ground level (1st floor)
Receptor distances =	6 meter spacing
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2006-2010
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Meteorological Data Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2009-2013	0.00095	0.0651	0.2058

Meteorological Data Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Road Dust PM2.5	Vehicle PM2.5
2009-2013	0.1245	0.0538	0.07071

Avalon West Valley III, San Jose, CA - Saratoga Ave Maximum Cancer Risks
Manzanita Site - On-Site Residential Receptors - 3rd Floor (7.7 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information							
					Annual TAC Conc (ug/m3)			Cancer Risk (per million)			
Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
0	2021	0.25	-0.25 - 0*	10	0.0010	0.0651	0.2058	0.013	0.005	0.001	0.02
1	2021	1	1	10	0.0010	0.0651	0.2058	0.16	0.061	0.011	0.23
2	2022	1	2	10	0.0010	0.0651	0.2058	0.16	0.061	0.011	0.23
3	2023	1	3	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
4	2024	1	4	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
5	2025	1	5	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
6	2026	1	6	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
7	2027	1	7	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
8	2028	1	8	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
9	2029	1	9	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
10	2030	1	10	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
11	2031	1	11	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
12	2032	1	12	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
13	2033	1	13	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
14	2034	1	14	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
15	2035	1	15	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
16	2036	1	16	3	0.0010	0.0651	0.2058	0.02	0.010	0.002	0.04
17	2037	1	17	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
18	2038	1	18	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
19	2039	1	19	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
20	2040	1	20	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
21	2041	1	21	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
22	2042	1	22	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
23	2043	1	23	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
24	2044	1	24	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
25	2045	1	25	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
26	2046	1	26	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
27	2047	1	27	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
28	2048	1	28	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
29	2049	1	29	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
30	2050	1	30	1	0.0010	0.0651	0.2058	0.00	0.001	0.000	0.004
Total Increased Cancer Risk			**Total**					0.71	0.276	0.052	**1.0**

* Third trimester of pregnancy

Avalon West Valley III, San Jose, CA - Saratoga Avenue - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Avalon Site - On-Site Residential Receptors - 2nd Floor (6.9 meter receptor heights)

Emissions Year	2021
Receptor Information	
Number of Receptors	60
Receptor Height =	6.9 meters above ground level (1st floor)
Receptor distances =	6 meter spacing
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2006-2010
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Meteorological Data Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2009-2013	0.00184	0.0659	0.2084

Meteorological Data Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Road Dust PM2.5	Vehicle PM2.5
2009-2013	0.1661	0.0945	0.0716

Avalon West Valley III, San Jose, CA - Saratoga Ave Maximum Cancer Risks
Avalon Site - On-Site Residential Receptors - 2nd Floor (6.9 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information							
					Annual TAC Conc (ug/m3)			Cancer Risk (per million)			
Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
0	2021	0.25	-0.25 - 0*	10	0.0018	0.0659	0.2084	0.025	0.005	0.001	0.03
1	2021	1	1	10	0.0018	0.0659	0.2084	0.30	0.062	0.012	0.38
2	2022	1	2	10	0.0018	0.0659	0.2084	0.30	0.062	0.012	0.38
3	2023	1	3	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
4	2024	1	4	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
5	2025	1	5	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
6	2026	1	6	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
7	2027	1	7	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
8	2028	1	8	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
9	2029	1	9	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
10	2030	1	10	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
11	2031	1	11	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
12	2032	1	12	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
13	2033	1	13	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
14	2034	1	14	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
15	2035	1	15	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
16	2036	1	16	3	0.0018	0.0659	0.2084	0.05	0.010	0.002	0.06
17	2037	1	17	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
18	2038	1	18	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
19	2039	1	19	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
20	2040	1	20	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
21	2041	1	21	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
22	2042	1	22	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
23	2043	1	23	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
24	2044	1	24	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
25	2045	1	25	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
26	2046	1	26	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
27	2047	1	27	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
28	2048	1	28	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
29	2049	1	29	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
30	2050	1	30	1	0.0018	0.0659	0.2084	0.01	0.001	0.000	0.007
Total Increased Cancer Risk			**Total**					1.37	0.280	0.052	**1.7**

* Third trimester of pregnancy

Avalon West Valley III, San Jose, CA - Saratoga Avenue - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
Avalon Site - On-Site Residential Receptors - 3rd Floor (10.3 meter receptor heights)

Emissions Year	2021
Receptor Information	
Number of Receptors	60
Receptor Height =	10.3 meters above ground level (1st floor)
Receptor distances =	6 meter spacing
Meteorological Conditions	
BAAQMD San Jose Airport Met Data	2006-2010
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

MEI Maximum Concentrations

Meteorological Data Years	Concentration (µg/m^3)		
	DPM	Exhaust TOG	Evaporative TOG
2009-2013	0.00094	0.0412	0.1304

Meteorological Data Years	PM2.5 Concentrations (µg/m^3)		
	Total PM2.5	Road Dust PM2.5	Vehicle PM2.5
2009-2013	0.0787	0.0339	0.0448

Avalon West Valley III, San Jose, CA - Saratoga Ave Maximum Cancer Risks
Avalon Site - On-Site Residential Receptors - 3rd Floor (10.3 meter receptor heights)
30-Year Residential Exposure

Cancer Risk Calculation Method

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

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

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

Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location

				Maximum - Exposure Information							
					Annual TAC Conc (ug/m3)			Cancer Risk (per million)			
Exposure Year	Year	Exposure Duration (years)	Age	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	Total
0	2021	0.25	-0.25 - 0*	10	0.0009	0.0412	0.1304	0.013	0.003	0.001	0.02
1	2021	1	1	10	0.0009	0.0412	0.1304	0.15	0.039	0.007	0.20
2	2022	1	2	10	0.0009	0.0412	0.1304	0.15	0.039	0.007	0.20
3	2023	1	3	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
4	2024	1	4	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
5	2025	1	5	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
6	2026	1	6	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
7	2027	1	7	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
8	2028	1	8	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
9	2029	1	9	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
10	2030	1	10	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
11	2031	1	11	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
12	2032	1	12	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
13	2033	1	13	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
14	2034	1	14	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
15	2035	1	15	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
16	2036	1	16	3	0.0009	0.0412	0.1304	0.02	0.006	0.001	0.03
17	2037	1	17	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
18	2038	1	18	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
19	2039	1	19	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
20	2040	1	20	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
21	2041	1	21	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
22	2042	1	22	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
23	2043	1	23	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
24	2044	1	24	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
25	2045	1	25	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
26	2046	1	26	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
27	2047	1	27	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
28	2048	1	28	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
29	2049	1	29	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
30	2050	1	30	1	0.0009	0.0412	0.1304	0.00	0.001	0.000	0.004
Total Increased Cancer Risk			**Total**					0.70	0.175	0.033	**0.9**

* Third trimester of pregnancy

Bay Area Air Quality Management District

Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

• County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.

• Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.

• Side of the Roadway: Identify on which side of the roadway the project is located.

• Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.

• Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.

Notes and References listed below the Search Boxes

Search Parameters

County	Santa Clara
Roadway Direction	North-South
Side of the Roadway	East
Distance from Roadway	640 feet
	Cancer MEI
Annual Average Daily Traffic (ADT)	31,970

Results

Santa Clara County

NORTH-SOUTH DIRECTIONAL ROADWAY

PM2.5 annual average

0.073 ($\mu g/m^3$)

Cancer Risk

3.18 (per million)

Saratoga Avenue

Cumulative plus project volumes from traffic report
Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Adjusted for 2015 OEHHA and EMFAC2014 for 2018

2.18
(per million)

Note that EMFAC2014 predicts DSL PM2.5 aggragate rates in 2018 that are 46% of EMFAC2011 for 2014. TOG gasoline rates are 56% of EMFAC2011 year 2014 rates. This is for light- and medium-duty vehciles traveling at 30 mph for Bay Area

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using ~~CALINE4~~ Cal3qhcr air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

Bay Area Air Quality Management District

Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

• County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.

• Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.

• Side of the Roadway: Identify on which side of the roadway the project is located.

• Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.

• Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.

Notes and References listed below the Search Boxes

Search Parameters

County	Santa Clara
Roadway Direction	North-South
Side of the Roadway	East
Distance from Roadway	375 feet
	PM2.5 MEI
Annual Average Daily Traffic (ADT)	31,970

Results

Santa Clara County

NORTH-SOUTH DIRECTIONAL ROADWAY

PM2.5 annual average

0.114 ($\mu g/m^3$)

Cancer Risk

4.94 (per million)

Saratoga Avenue

Cumulative plus project volumes from traffic report
Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Adjusted for 2015 OEHHA and EMFAC2014 for 2018

3.39
(per million)

Note that EMFAC2014 predicts DSL PM2.5 aggragate rates in 2018 that are 46% of EMFAC2011 for 2014. TOG gasoline rates are 56% of EMFAC2011 year 2014 rates. This is for light- and medium-duty vehciles traveling at 30 mph for Bay Area

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using ~~CALINE4~~ Cal3qhcr air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

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	**5/24/2018**
Contact Name	Casey Zaglin
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x23
Email	czaglin@illingworthrodkin.com
Project Name	Avalon West Valley Expansion
Address	700 Saratoga Avenue
City	San Jose
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Mixed Use, parking structure
Project Size (# of units or building square feet)	300 du, 17,800 sf retail, 1,160 parking spaces

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 blue 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
460	Strawberry Park Shell	609 Saratoga Avenue	G12254	10.9	0.05	na		gas station		updated screening values to 2014; consider using screening values with distance muliptier
730	ConocoPhillips #2611211	590 Saratoga Avenue	G9351	8.4	0.04	na		gas station		updated screening values to 2014; consider using screening values with distance muliptier
700	Valero Refining Co SS#7544	601 Saratoga	G10399	4.4	0.022	na		gas station		updated screening values to 2014; consider using screening values with distance muliptier

Avalon Site

Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
0.05	0.56	0.00	#VALUE!
0.02	0.21	0.00	#VALUE!
0.03	0.11	0.00	#VALUE!

Cancer MEI

Distance from Receptor (feet) or MEI[1]	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
1000	0.01	0.16	0.00	#VALUE!
1000	0.01	0.13	0.00	#VALUE!
1000	0.01	0.07	0.00	#VALUE!

Manzanita Site

Distance from Receptor (feet) or MEI[1]	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
1000	0.01	0.16	0.00	#VALUE!
1000	0.01	0.13	0.00	#VALUE!
1000	0.01	0.07	0.00	#VALUE!

PM2.5 MEI

Distance from Receptor (feet) or MEI[1]	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
800	0.02	0.23	0.00	#VALUE!
1000	0.01	0.13	0.00	#VALUE!
1000	0.01	0.07	0.00	#VALUE!

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
    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
    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

Emissions Summary

AvalonBay West Valley, San Jose, 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 ($g/s/m^2$)
2020	Manzanita Const	0.0957	CONM_DPM	191.4	0.0583	7.34E-03	13,366	**5.49E-07**
2021	Manzanita Const	0.0587	CONM_DPM	117.4	0.0357	4.50E-03	13,366	**3.37E-07**
Subtotal		*0.1544*		*308.8*	*0.0940*	*1.18E-02*		
2021	Avalon Const	0.0531	CONA_DPM	106.2	0.0323	4.07E-03	11,410	**3.57E-07**
2022	Avalon Const	0.0763	CONA_DPM	152.6	0.0465	5.85E-03	11,410	**5.13E-07**
Subtotal		*0.1294*		*258.8*	*0.0788*	*9.93E-03*		
Total		***0.2838***		***1135.2***	***0.3456***	***0.0435***		

Operation Hours

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

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 $g/s/m^2$
2020	Construction	CONM_FUG	0.0606	121.2	0.0369	4.65E-03	13,366	**3.48E-07**
2021	Construction	CONM_FUG	0.0039	7.7	0.0024	2.96E-04	13,366	**2.22E-08**
Subtotal			*0.0645*	*128.9*	*0.0392*	*4.94E-03*		
2021	Construction	CONA_FUG	0.0513	102.6	0.0312	3.94E-03	11,410	**3.45E-07**
2022	Construction	CONA_FUG	0.0059	11.8	0.0036	4.51E-04	11,410	**3.95E-08**
Subtotal			*0.0572*	*114.4*	*0.0348*	*4.39E-03*		
Total			***0.1216***	***243.3***	***0.0741***	***0.0093***		

Operation Hours

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

DPM Emissions and Modeling Emission Rates - Mitigated

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 ($g/s/m^2$)
2020	Manzanita Const	0.00703	CONM_DPM	14.1	0.0043	5.39E-04	13,366	**4.03E-08**
2021	Manzanita Const	0.00528	CONM_DPM	10.6	0.0032	4.05E-04	13,366	**3.03E-08**
Subtotal		*0.0123*		*24.6*	*0.0075*	*9.44E-04*		
2021	Avalon Const	0.00386	CONA_DPM	7.7	0.0024	2.96E-04	11,410	**2.60E-08**
2022	Avalon Const	0.00814	CONA_DPM	16.3	0.0050	6.24E-04	11,410	**5.47E-08**
Subtotal		*0.0120*		*24.0*	*0.0073*	*9.21E-04*		
Total		***0.0243***		***97.2***	***0.0296***	***0.0037***		

Operation Hours

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

PM2.5 Fugitive Dust Emissions for Modeling - Mitigated

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 $g/s/m^2$
2020	Construction	CONM_FUG	0.01740	34.8	0.0106	1.33E-03	13,366	**9.99E-08**
2021	Construction	CONM_FUG	0.00386	7.7	0.0024	2.96E-04	13,366	**2.22E-08**
Subtotal			*0.0213*	*42.5*	*0.0129*	*1.63E-03*		
2021	Construction	CONA_FUG	0.0138	27.6	0.0084	1.06E-03	11,410	**9.28E-08**
2022	Construction	CONA_FUG	0.0059	11.7	0.0036	4.50E-04	11,410	**3.95E-08**
Subtotal			*0.0197*	*39.3*	*0.0120*	*1.51E-03*		
Total			***0.0409***	***81.9***	***0.0249***	***0.0031***		

Operation Hours

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

Health Risk Calculations

AvalonBay West Valley, San Jose, CA
Construction Health Impacts Summary

Manzanita Site Construction
Maximum Impacts at Construction Residential 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 ($\mu g/m^3$)
2020	0.3099	0.3378	50.9	0.9	0.062	0.57
2021	0.1902	0.0216	31.2	0.5	0.038	0.20
Total	-	-	**82.1**	**1.4**		
Maximum	0.3099	0.3378	-	-	**0.06**	**0.57**

Maximum Impacts at Construction Residential 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 ($\mu g/m^3$)
2020	0.0228	0.0970	3.7	0.1	0.005	0.11
2021	0.0171	0.0216	2.8	0.0	0.003	0.03
Total	-	-	**6.5**	**0.1**		
Maximum	0.0228	0.0970	-	-	**0.005**	**0.11**

Avalon Site Construction
Maximum Impacts at Construction Residential 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 ($\mu g/m^3$)
2021	0.2205	0.3705	36.2	0.6	0.044	0.54
2022	0.3168	0.0424	52.0	0.9	0.063	0.34
Total	-	-	**88.2**	**1.5**		
Maximum	0.3168	0.3705	-	-	**0.06**	**0.54**

Maximum Impacts at Construction Residential 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 ($\mu g/m^3$)
2021	0.0160	0.0560	2.6	0.05	0.003	0.07
2022	0.0338	0.0424	5.5	0.10	0.007	0.07
Total	-	-	**8.2**	**0.1**		
Maximum	0.0338	0.0560	-	-	**0.007**	**0.07**

Manzanita Site Construction

Maximum Impacts at Construction School Child 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) School Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2020	0.0222	0.0143	0.6	0.004	0.04
2021	0.0137	0.0009	0.4	0.003	0.01
Total	-	-	**1.0**		
Maximum	0.0222	0.0143	-	**0.004**	**0.04**

Avalon Site Construction

Maximum Impacts at Construction Residential 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) School Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2021	0.0218	0.0212	0.6	0.004	0.04
2022	0.0313	0.0024	0.9	0.006	0.03
Total	-	-	**1.5**		
Maximum	0.0313	0.0212	-	**0.006**	**0.04**

Project Impacts - Combined Impacts from Manzanita and Avalon Construction Sites

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 ($\mu g/m^3$)
2020	0.3099	0.3378	50.9	0.07	0.062	0.57
2021	0.2177	0.3762	35.8	0.05	0.044	0.60
2022	0.0395	0.0424	1.1	0.01	0.008	0.34
Total	-	-	**87.8**	**0.1**		
Maximum	0.3099	0.3762	-	-	**0.06**	**0.60**

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 ($\mu g/m^3$)
2020	0.0228	0.0970	3.7	0.1	0.005	0.11
2021	0.0191	0.1054	3.1	0.1	0.004	0.12
2022	0.0042	0.0424	0.1	0.0	0.001	0.07
Total	-	-	**3.9**	**0.1**		
Maximum	0.0228	0.1054	-	-	**0.005**	**0.12**

Maximum Impacts at Construction School Child 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) School Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2020	0.0209	0.0143	0.6	0.004	0.04
2021	0.0346	0.0221	1.0	0.007	0.06
2022	0.0313	0.0024	0.9	0.006	0.03
Total	-	-	**2.5**		
Maximum	0.0346	0.0221	-	**0.01**	**0.06**

AvalonBay West Valley, San Jose, CA - Without Mitigation
Manzanita Construction Site
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 1.5 meter 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 Information				Adult - Exposure Information				Maximum	
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2020	0.2300	10	37.77	2020	0.2300	1	0.66	0.3378	**0.568**
2	1	1 - 2	2021	0.1412	10	23.19	2021	0.1412	1	0.41	0.0216	0.163
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						**60.96**				**1.07**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - Without Mitigation
Manzanita Construction Site
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 4.5 meter 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 Information				Adult - Exposure Information				Maximum	
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2020	0.3099	10	50.89	2020	0.3099	1	0.89	0.1926	0.502
2	1	1 - 2	2021	0.1902	10	31.24	2021	0.1902	1	0.55	0.0123	0.202
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						**82.13**				**1.44**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - With Mitigation
Manzanita Construction Site
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					
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2020	0.0169	10	2.77	2020	0.0169	1	0.05	0.0970	0.114
2	1	1 - 2	2021	0.0127	10	2.08	2021	0.0127	1	0.04	0.0216	0.034
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						**4.86**				**0.08**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - With Mitigation
Manzanita Construction Site
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					
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2020	0.0228	10	3.74	2020	0.0228	1	0.07	0.0553	0.078
2	1	1 - 2	2021	0.0171	10	2.81	2021	0.0171	1	0.05	0.0123	0.029
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						**6.55**				**0.11**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - With Mitigation
Avalon Construction Site
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Manzanita Building On-Site Receptors - 1.5 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					
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2021	0.0217	10	3.57	2021	0.0217	1	0.06	0.0216	0.043
2	1	1 - 2	2022	0.0312	10	5.13	2022	0.0312	1	0.09	0.0025	0.034
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						**8.70**				**0.15**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - Without Mitigation
Avalon Construction Site
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 1.5 meter 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 Information				Adult - Exposure Information				Maximum	
							Modeled					
Exposure Year	Exposure Duration (years)	Age	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2021	0.1748	10	28.72	2021	0.1748	1	0.50	**0.3705**	**0.536**
2	1	1 - 2	2022	0.2512	10	41.26	2022	0.2512	1	0.72	0.0424	0.292
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						**69.98**				**1.22**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - Without Mitigation
Avalon Construction Site
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 4.5 meter 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 Information				Adult - Exposure Information				Maximum	
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2021	0.2205	10	36.21	2021	0.2205	1	0.63	0.2082	0.429
2	1	1 - 2	2022	0.3168	10	52.03	2022	0.3168	1	0.91	0.0238	0.341
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						**88.24**				**1.54**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - With Mitigation
Avalon Construction Site
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 1.5 meter 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 Information				Adult - Exposure Information				Maximum	
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2021	0.0127	10	2.09	2021	0.0127	1	0.04	0.0320	0.044
2	1	1 - 2	2022	0.0268	10	4.40	2022	0.0268	1	0.08	**0.0424**	**0.068**
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						**6.49**				**0.11**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - With Mitigation
Avalon Construction Site
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 4.5 meter 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 Information				Adult - Exposure Information				Maximum	
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2021	0.0160	10	2.63	2021	0.0160	1	0.05	**0.0560**	**0.072**
2	1	1 - 2	2022	0.0338	10	5.55	2022	0.0338	1	0.10	0.0238	0.058
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						**8.18**				**0.14**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - Without Mitigation
Manzanita Construction Site
Maximum DPM Cancer Risk Calculations From Construction
Preschool at West Valley Middle School - 1.0 meters - Child Exposure

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

Exposure Year	Exposure Duration (years)	Student - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Student Cancer Risk (per million)	Maximum Fugitive PM2.5	Maximum Total PM2.5
1	1	2020	0.0222	3	0.63	0.0143	0.037
2	1	2021	0.0137	3	0.39	0.0009	0.015
Total Increased Cancer Risk			**0.0359**		**1.0**		

* Students assumed to be from 2 to 9 years of age

AvalonBay West Valley, San Jose, CA - Without Mitigation
Avalon Construction Site
Maximum DPM Cancer Risk Calculations From Construction
Preschool at West Valley Middle School - 1.0 meters - Child Exposure

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

Exposure Year	Exposure Duration (years)	Student - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Student Cancer Risk (per million)	Maximum Fugitive PM2.5	Maximum Total PM2.5
1	1	2021	0.0218	3	0.62	0.0212	0.043
2	1	2022	0.0313	3	0.89	0.0024	0.034
Total Increased Cancer Risk			**0.0531**		**1.5**		

* Students assumed to be from 2 to 9 years of age

AvalonBay West Valley, San Jose, CA - Without Mitigation
Combined Avalon Site and Manzanita Site Construction Impacts
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 1.5 meter 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 Information				Adult - Exposure Information				Maximum	
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2020	0.2290	10	37.61	2020	0.2290	1	0.66	0.3378	0.568
2	1	1 - 2	2021	0.1715	10	28.16	2021	0.1715	1	0.49	**0.3762**	**0.599**
3	1	2 - 3		0.0444	3	1.27	2022	0.0444	1	0.13	0.0424	0.292
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						**67.03**				**1.28**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - Without Mitigation
Combined Avalon Site and Manzanita Site Construction Impacts
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 4.5 meter 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 Information				Adult - Exposure Information				Maximum	
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2020	0.3099	10	50.89	2020	0.3099	1	0.89	0.1926	**0.502**
2	1	1 - 2	2021	0.2177	10	35.76	2021	0.2177	1	0.63	**0.2128**	0.500
3	1	2 - 3		0.0395	3	1.13	2022	0.0395	1	0.11	0.0238	0.341
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						**87.78**				**1.63**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - With Mitigation
Combined Avalon Site and Manzanita Site Construction Impacts
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 1.5 meter 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 Information				Adult - Exposure Information				Maximum	
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2020	0.0168	10	2.76	2020	0.0168	1	0.05	0.0970	0.114
2	1	1 - 2	2021	0.0149	10	2.45	2021	0.0149	1	0.04	**0.1054**	**0.122**
3	1	2 - 3		0.0047	3	0.14	2022	0.0047	1	0.01	0.0424	0.068
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						**5.34**				**0.10**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - With Mitigation
Combined Avalon Site and Manzanita Site Construction Impacts
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors - 4.5 meter 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 Information				Adult - Exposure Information				Maximum	
							Modeled					
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2020	0.0228	10	3.74	2020	0.0228	1	0.07	0.0553	0.078
2	1	1 - 2	2021	0.0191	10	3.14	2021	0.0191	1	0.05	**0.0606**	**0.083**
3	1	2 - 3		0.0042	3	0.12	2022	0.0042	1	0.01	0.0238	0.058
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						**7.00**				**0.13**		

* Third trimester of pregnancy

AvalonBay West Valley, San Jose, CA - Without Mitigation
Combined Avalon Site and Manzanita Site Construction Impacts
Maximum DPM Cancer Risk Calculations From Construction
Preschool at West Valley Middle School - 1.0 meters - Child Exposure

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

Exposure Year	Exposure Duration (years)	Student - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Student Cancer Risk (per million)	Maximum Fugitive PM2.5	Maximum Total PM2.5
1	1	2020	0.0209	3	0.60	0.0143	0.037
2	1	2021	0.0346	3	0.99	0.0221	0.057
3	1	2022	0.0313	3	0.89	0.0024	0.034
Total Increased Cancer Risk			**0.0868**		**2.5**		

* Students assumed to be from 2 to 9 years of age

Avalon West Valley III Manzanita + Parking Structure

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	55.00	Dwelling Unit	1.60	55,000.00	157
Enclosed Parking with Elevator	1,160.00	Space	2.00	464,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	380	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SVP Post 2020 rate

Land Use - Estimated acreage

Construction Phase - Based on defaults

Grading - Measured off assuming 1 story with 20% swell

Demolition - Assumed all 2-story demo

Construction Off-road Equipment Mitigation - Tier 4 and BMPs

Trips and VMT - on- and near-site travel

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

tblGrading	MaterialExported	0.00	30,000.00
tblGrading	MaterialImported	0.00	5,000.00
tblLandUse	LotAcreage	1.45	1.60
tblLandUse	LotAcreage	10.44	2.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
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	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

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					
2020	0.2125	2.3230	1.5871	3.1400e-003	0.2042	0.0957	0.2999	0.0606	0.0896	0.1502	0.0000	279.6534	279.6534	0.0580	0.0000	281.1032
2021	0.6204	1.3514	1.1855	2.1500e-003	0.0141	0.0587	0.0727	3.8600e-003	0.0551	0.0590	0.0000	189.3002	189.3002	0.0390	0.0000	190.2741
Maximum	**0.6204**	**2.3230**	**1.5871**	**3.1400e-003**	**0.2042**	**0.0957**	**0.2999**	**0.0606**	**0.0896**	**0.1502**	**0.0000**	**279.6534**	**279.6534**	**0.0580**	**0.0000**	**281.1032**

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					
2020	0.0732	1.4861	1.6937	3.1400e-003	0.1016	7.0300e-003	0.1086	0.0174	6.9800e-003	0.0244	0.0000	279.6532	279.6532	0.0580	0.0000	281.1030
2021	0.5372	0.9650	1.2679	2.1500e-003	0.0141	5.2800e-003	0.0193	3.8600e-003	5.2600e-003	9.1200e-003	0.0000	189.3001	189.3001	0.0390	0.0000	190.2739
Maximum	**0.5372**	**1.4861**	**1.6937**	**3.1400e-003**	**0.1016**	**7.0300e-003**	**0.1086**	**0.0174**	**6.9800e-003**	**0.0244**	**0.0000**	**279.6532**	**279.6532**	**0.0580**	**0.0000**	**281.1030**

	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	**26.72**	**33.29**	**-6.82**	**0.00**	**47.01**	**92.03**	**65.66**	**67.03**	**91.54**	**83.99**	**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	**6-1-2020**	**8-31-2020**	1.3399	0.8056
2	**9-1-2020**	**11-30-2020**	0.8875	0.5671
3	**12-1-2020**	**2-28-2021**	0.8281	0.5527
4	**3-1-2021**	**5-31-2021**	0.8232	0.5640
5	**6-1-2021**	**8-31-2021**	0.6056	0.5593
		Highest	1.3399	0.8056

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4334	7.7300e-003	0.5942	3.7000e-004		0.0273	0.0273		0.0273	0.0273	2.5074	1.7177	4.2252	4.7300e-003	1.6000e-004	4.3924
Energy	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	533.1616	533.1616	0.0392	8.4800e-003	536.6704
Mobile	0.0829	0.3513	0.9634	3.3300e-003	0.3070	2.8300e-003	0.3099	0.0822	2.6400e-003	0.0848	0.0000	304.8751	304.8751	0.0103	0.0000	305.1326
Waste						0.0000	0.0000		0.0000	0.0000	5.1357	0.0000	5.1357	0.3035	0.0000	12.7234
Water						0.0000	0.0000		0.0000	0.0000	1.1369	4.7051	5.8420	0.1171	2.8300e-003	9.6139
Total	**0.5189**	**0.3810**	**1.5669**	**3.8400e-003**	**0.3070**	**0.0319**	**0.3389**	**0.0822**	**0.0317**	**0.1139**	**8.7800**	**844.4595**	**853.2394**	**0.4749**	**0.0115**	**868.5327**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4334	7.7300e-003	0.5942	3.7000e-004		0.0273	0.0273		0.0273	0.0273	2.5074	1.7177	4.2252	4.7300e-003	1.6000e-004	4.3924
Energy	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	533.1616	533.1616	0.0392	8.4800e-003	536.6704
Mobile	0.0829	0.3513	0.9634	3.3300e-003	0.3070	2.8300e-003	0.3099	0.0822	2.6400e-003	0.0848	0.0000	304.8751	304.8751	0.0103	0.0000	305.1326
Waste						0.0000	0.0000		0.0000	0.0000	5.1357	0.0000	5.1357	0.3035	0.0000	12.7234
Water						0.0000	0.0000		0.0000	0.0000	1.1369	4.7051	5.8420	0.1171	2.8300e-003	9.6139

Total	**0.5189**	**0.3810**	**1.5669**	**3.8400e-003**	**0.3070**	**0.0319**	**0.3389**	**0.0822**	**0.0317**	**0.1139**	**8.7800**	**844.4595**	**853.2394**	**0.4749**	**0.0115**	**868.5327**

	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	6/1/2020	6/26/2020	5	20	
2	Site Preparation	Site Preparation	6/27/2020	7/3/2020	5	5	
3	Grading	Grading	7/4/2020	7/15/2020	5	8	
4	Building Construction	Building Construction	7/16/2020	6/2/2021	5	230	
5	Paving	Paving	6/3/2021	6/28/2021	5	18	
6	Architectural Coating	Architectural Coating	6/29/2021	7/22/2021	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 2

Residential Indoor: 111,375; Residential Outdoor: 37,125; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20

Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	47.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	234.00	82.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	1,046.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	4,375.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					
Fugitive Dust					0.1132	0.0000	0.1132	0.0171	0.0000	0.0171	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**	**0.1132**	**0.0166**	**0.1298**	**0.0171**	**0.0154**	**0.0326**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

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	1.1400e-003	0.0539	8.8100e-003	7.0000e-005	4.5000e-004	5.0000e-005	5.0000e-004	1.3000e-004	5.0000e-005	1.7000e-004	0.0000	6.7927	6.7927	7.2000e-004	0.0000	6.8108
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	1.7000e-004	8.0000e-005	9.8000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1220	0.1220	1.0000e-005	0.0000	0.1221
Total	**1.3100e-003**	**0.0540**	**9.7900e-003**	**7.0000e-005**	**5.6000e-004**	**5.0000e-005**	**6.1000e-004**	**1.6000e-004**	**5.0000e-005**	**2.0000e-004**	**0.0000**	**6.9147**	**6.9147**	**7.3000e-004**	**0.0000**	**6.9329**

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					0.0509	0.0000	0.0509	3.8600e-003	0.0000	3.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8400e-003	0.1356	0.2467	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**5.8400e-003**	**0.1356**	**0.2467**	**3.9000e-004**	**0.0509**	**6.2000e-004**	**0.0516**	**3.8600e-003**	**6.2000e-004**	**4.4800e-003**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

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	1.1400e-003	0.0539	8.8100e-003	7.0000e-005	4.5000e-004	5.0000e-005	5.0000e-004	1.3000e-004	5.0000e-005	1.7000e-004	0.0000	6.7927	6.7927	7.2000e-004	0.0000	6.8108
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	1.7000e-004	8.0000e-005	9.8000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1220	0.1220	1.0000e-005	0.0000	0.1221
Total	**1.3100e-003**	**0.0540**	**9.7900e-003**	**7.0000e-005**	**5.6000e-004**	**5.0000e-005**	**6.1000e-004**	**1.6000e-004**	**5.0000e-005**	**2.0000e-004**	**0.0000**	**6.9147**	**6.9147**	**7.3000e-004**	**0.0000**	**6.9329**

3.3 Site Preparation - 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					

Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4253
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4253**

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	5.0000e-005	2.0000e-005	3.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0366	0.0366	0.0000	0.0000	0.0366
Total	**5.0000e-005**	**2.0000e-005**	**3.0000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0366**	**0.0366**	**0.0000**	**0.0000**	**0.0366**

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					0.0203	0.0000	0.0203	5.5900e-003	0.0000	5.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0304	0.0574	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4252
Total	**1.7400e-003**	**0.0304**	**0.0574**	**1.0000e-004**	**0.0203**	**1.6000e-004**	**0.0205**	**5.5900e-003**	**1.6000e-004**	**5.7500e-003**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4252**

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	5.0000e-005	2.0000e-005	3.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0366	0.0366	0.0000	0.0000	0.0366
Total	**5.0000e-005**	**2.0000e-005**	**3.0000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0366**	**0.0366**	**0.0000**	**0.0000**	**0.0366**

3.4 Grading - 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					
Fugitive Dust					0.0282	0.0000	0.0282	0.0138	0.0000	0.0138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0282**	**5.0900e-003**	**0.0333**	**0.0138**	**4.6900e-003**	**0.0185**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

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	4.7500e-003	0.2256	0.0368	2.9000e-004	1.9000e-003	2.1000e-004	2.1100e-003	5.3000e-004	2.0000e-004	7.3000e-004	0.0000	28.4112	28.4112	3.0200e-003	0.0000	28.4868
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	7.0000e-005	3.0000e-005	3.9000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0488	0.0488	0.0000	0.0000	0.0488
Total	**4.8200e-003**	**0.2256**	**0.0372**	**2.9000e-004**	**1.9400e-003**	**2.1000e-004**	**2.1600e-003**	**5.4000e-004**	**2.0000e-004**	**7.4000e-004**	**0.0000**	**28.4600**	**28.4600**	**3.0200e-003**	**0.0000**	**28.5356**

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					0.0127	0.0000	0.0127	3.1000e-003	0.0000	3.1000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0800e-003	0.0413	0.0760	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**2.0800e-003**	**0.0413**	**0.0760**	**1.2000e-004**	**0.0127**	**1.9000e-004**	**0.0129**	**3.1000e-003**	**1.9000e-004**	**3.2900e-003**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

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	4.7500e-003	0.2256	0.0368	2.9000e-004	1.9000e-003	2.1000e-004	2.1100e-003	5.3000e-004	2.0000e-004	7.3000e-004	0.0000	28.4112	28.4112	3.0200e-003	0.0000	28.4868

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	7.0000e-005	3.0000e-005	3.9000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0488	0.0488	0.0000	0.0000	0.0488
Total	**4.8200e-003**	**0.2256**	**0.0372**	**2.9000e-004**	**1.9400e-003**	**2.1000e-004**	**2.1600e-003**	**5.4000e-004**	**2.0000e-004**	**7.4000e-004**	**0.0000**	**28.4600**	**28.4600**	**3.0200e-003**	**0.0000**	**28.5356**

3.5 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	0.1283	1.1608	1.0193	1.6300e-003		0.0676	0.0676		0.0636	0.0636	0.0000	140.1240	140.1240	0.0342	0.0000	140.9787
Total	**0.1283**	**1.1608**	**1.0193**	**1.6300e-003**		**0.0676**	**0.0676**		**0.0636**	**0.0636**	**0.0000**	**140.1240**	**140.1240**	**0.0342**	**0.0000**	**140.9787**

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	9.3700e-003	0.3318	0.0921	4.1000e-004	4.5800e-003	5.4000e-004	5.1200e-003	1.3400e-003	5.1000e-004	1.8500e-003	0.0000	39.8258	39.8258	3.8900e-003	0.0000	39.9229
Worker	0.0157	7.1800e-003	0.0928	1.3000e-004	0.0105	1.4000e-004	0.0107	2.8200e-003	1.3000e-004	2.9500e-003	0.0000	11.5125	11.5125	5.0000e-004	0.0000	11.5249
Total	**0.0251**	**0.3390**	**0.1849**	**5.4000e-004**	**0.0151**	**6.8000e-004**	**0.0158**	**4.1600e-003**	**6.4000e-004**	**4.8000e-003**	**0.0000**	**51.3383**	**51.3383**	**4.3900e-003**	**0.0000**	**51.4478**

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	0.0323	0.6602	1.0814	1.6300e-003		5.1200e-003	5.1200e-003		5.1200e-003	5.1200e-003	0.0000	140.1239	140.1239	0.0342	0.0000	140.9785
Total	**0.0323**	**0.6602**	**1.0814**	**1.6300e-003**		**5.1200e-003**	**5.1200e-003**		**5.1200e-003**	**5.1200e-003**	**0.0000**	**140.1239**	**140.1239**	**0.0342**	**0.0000**	**140.9785**

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	9.3700e-003	0.3318	0.0921	4.1000e-004	4.5800e-003	5.4000e-004	5.1200e-003	1.3400e-003	5.1000e-004	1.8500e-003	0.0000	39.8258	39.8258	3.8900e-003	0.0000	39.9229
Worker	0.0157	7.1800e-003	0.0928	1.3000e-004	0.0105	1.4000e-004	0.0107	2.8200e-003	1.3000e-004	2.9500e-003	0.0000	11.5125	11.5125	5.0000e-004	0.0000	11.5249
Total	**0.0251**	**0.3390**	**0.1849**	**5.4000e-004**	**0.0151**	**6.8000e-004**	**0.0158**	**4.1600e-003**	**6.4000e-004**	**4.8000e-003**	**0.0000**	**51.3383**	**51.3383**	**4.3900e-003**	**0.0000**	**51.4478**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1036	0.9501	0.9034	1.4700e-003		0.0522	0.0522		0.0491	0.0491	0.0000	126.2423	126.2423	0.0305	0.0000	127.0037
Total	**0.1036**	**0.9501**	**0.9034**	**1.4700e-003**		**0.0522**	**0.0522**		**0.0491**	**0.0491**	**0.0000**	**126.2423**	**126.2423**	**0.0305**	**0.0000**	**127.0037**

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	7.5400e-003	0.2841	0.0765	3.7000e-004	4.1300e-003	2.4000e-004	4.3700e-003	1.2000e-003	2.3000e-004	1.4300e-003	0.0000	35.5340	35.5340	3.3000e-003	0.0000	35.6165
Worker	0.0129	5.7000e-003	0.0754	1.1000e-004	9.4800e-003	1.3000e-004	9.6100e-003	2.5400e-003	1.2000e-004	2.6500e-003	0.0000	10.0187	10.0187	3.9000e-004	0.0000	10.0285
Total	**0.0205**	**0.2898**	**0.1519**	**4.8000e-004**	**0.0136**	**3.7000e-004**	**0.0140**	**3.7400e-003**	**3.5000e-004**	**4.0800e-003**	**0.0000**	**45.5527**	**45.5527**	**3.6900e-003**	**0.0000**	**45.6450**

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	0.0291	0.5947	0.9741	1.4700e-003		4.6100e-003	4.6100e-003		4.6100e-003	4.6100e-003	0.0000	126.2422	126.2422	0.0305	0.0000	127.0036

Total	**0.0291**	**0.5947**	**0.9741**	**1.4700e-003**		**4.6100e-003**	**4.6100e-003**		**4.6100e-003**	**4.6100e-003**	**0.0000**	**126.2422**	**126.2422**	**0.0305**	**0.0000**	**127.0036**

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	7.5400e-003	0.2841	0.0765	3.7000e-004	4.1300e-003	2.4000e-004	4.3700e-003	1.2000e-003	2.3000e-004	1.4300e-003	0.0000	35.5340	35.5340	3.3000e-003	0.0000	35.6165
Worker	0.0129	5.7000e-003	0.0754	1.1000e-004	9.4800e-003	1.3000e-004	9.6100e-003	2.5400e-003	1.2000e-004	2.6500e-003	0.0000	10.0187	10.0187	3.9000e-004	0.0000	10.0285
Total	**0.0205**	**0.2898**	**0.1519**	**4.8000e-004**	**0.0136**	**3.7000e-004**	**0.0140**	**3.7400e-003**	**3.5000e-004**	**4.0800e-003**	**0.0000**	**45.5527**	**45.5527**	**3.6900e-003**	**0.0000**	**45.6450**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7336	14.7336	4.6300e-003	0.0000	14.8493
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8500e-003**	**0.0976**	**0.1103**	**1.7000e-004**		**5.2100e-003**	**5.2100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**14.7336**	**14.7336**	**4.6300e-003**	**0.0000**	**14.8493**

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	1.8000e-004	8.0000e-005	1.0600e-003	0.0000	1.3000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1414	0.1414	1.0000e-005	0.0000	0.1416
Total	**1.8000e-004**	**8.0000e-005**	**1.0600e-003**	**0.0000**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1414**	**0.1414**	**1.0000e-005**	**0.0000**	**0.1416**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6200e-003	0.0706	0.1218	1.7000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	14.7335	14.7335	4.6300e-003	0.0000	14.8493
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6200e-003**	**0.0706**	**0.1218**	**1.7000e-004**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**	**0.0000**	**14.7335**	**14.7335**	**4.6300e-003**	**0.0000**	**14.8493**

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	1.8000e-004	8.0000e-005	1.0600e-003	0.0000	1.3000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1414	0.1414	1.0000e-005	0.0000	0.1416
Total	**1.8000e-004**	**8.0000e-005**	**1.0600e-003**	**0.0000**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1414**	**0.1414**	**1.0000e-005**	**0.0000**	**0.1416**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4840					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9700e-003	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	**0.4859**	**0.0137**	**0.0164**	**3.0000e-005**		**8.5000e-004**	**8.5000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.6000e-004**	**0.0000**	**2.3019**

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	4.3000e-004	1.9000e-004	2.5000e-003	0.0000	3.1000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.3323	0.3323	1.0000e-005	0.0000	0.3326
Total	**4.3000e-004**	**1.9000e-004**	**2.5000e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3323**	**0.3323**	**1.0000e-005**	**0.0000**	**0.3326**

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	0.4840					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9000e-004	9.5400e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	**0.4844**	**9.5400e-003**	**0.0165**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.2979**	**2.2979**	**1.6000e-004**	**0.0000**	**2.3019**

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	4.3000e-004	1.9000e-004	2.5000e-003	0.0000	3.1000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.3323	0.3323	1.0000e-005	0.0000	0.3326
Total	**4.3000e-004**	**1.9000e-004**	**2.5000e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3323**	**0.3323**	**1.0000e-005**	**0.0000**	**0.3326**

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	0.0829	0.3513	0.9634	3.3300e-003	0.3070	2.8300e-003	0.3099	0.0822	2.6400e-003	0.0848	0.0000	304.8751	304.8751	0.0103	0.0000	305.1326
Unmitigated	0.0829	0.3513	0.9634	3.3300e-003	0.3070	2.8300e-003	0.3099	0.0822	2.6400e-003	0.0848	0.0000	304.8751	304.8751	0.0103	0.0000	305.1326

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	365.75	351.45	322.30	825,685	825,685
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	365.75	351.45	322.30	825,685	825,685

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 with Elevator	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	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740
Enclosed Parking with Elevator	0.610498	0.036775	0.183084	0.106123	0.014413	0.005007	0.012610	0.021118	0.002144	0.001548	0.005312	0.000627	0.000740

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	507.8047	507.8047	0.0388	8.0200e-003	511.1629
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	507.8047	507.8047	0.0388	8.0200e-003	511.1629
NaturalGas Mitigated	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3569	25.3569	4.9000e-004	4.6000e-004	25.5076
NaturalGas Unmitigated	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3569	25.3569	4.9000e-004	4.6000e-004	25.5076

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	475170	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3569	25.3569	4.9000e-004	4.6000e-004	25.5076
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**2.5600e-003**	**0.0219**	**9.3200e-003**	**1.4000e-004**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**25.3569**	**25.3569**	**4.9000e-004**	**4.6000e-004**	**25.5076**

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	475170	2.5600e-003	0.0219	9.3200e-003	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3569	25.3569	4.9000e-004	4.6000e-004	25.5076
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**2.5600e-003**	**0.0219**	**9.3200e-003**	**1.4000e-004**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**25.3569**	**25.3569**	**4.9000e-004**	**4.6000e-004**	**25.5076**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	227059	39.1371	2.9900e-003	6.2000e-004	39.3959
Enclosed Parking with Elevator	2.71904e+006	468.6676	0.0358	7.4000e-003	471.7670
Total		**507.8047**	**0.0388**	**8.0200e-003**	**511.1629**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	227059	39.1371	2.9900e-003	6.2000e-004	39.3959
Enclosed Parking with Elevator	2.71904e+006	468.6676	0.0358	7.4000e-003	471.7670
Total		**507.8047**	**0.0388**	**8.0200e-003**	**511.1629**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4334	7.7300e-003	0.5942	3.7000e-004		0.0273	0.0273		0.0273	0.0273	2.5074	1.7177	4.2252	4.7300e-003	1.6000e-004	4.3924
Unmitigated	0.4334	7.7300e-003	0.5942	3.7000e-004		0.0273	0.0273		0.0273	0.0273	2.5074	1.7177	4.2252	4.7300e-003	1.6000e-004	4.3924

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	0.0484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	0.2448					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1269	2.9200e-003	0.1748	3.5000e-004		0.0250	0.0250		0.0250	0.0250	2.5074	1.0299	3.5374	4.0300e-003	1.6000e-004	3.6871
Landscaping	0.0133	4.8100e-003	0.4195	2.0000e-005		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	0.6878	0.6878	7.0000e-004	0.0000	0.7053
Total	**0.4334**	**7.7300e-003**	**0.5943**	**3.7000e-004**		**0.0273**	**0.0273**		**0.0273**	**0.0273**	**2.5074**	**1.7177**	**4.2252**	**4.7300e-003**	**1.6000e-004**	**4.3924**

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	0.0484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2448					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1269	2.9200e-003	0.1748	3.5000e-004		0.0250	0.0250		0.0250	0.0250	2.5074	1.0299	3.5374	4.0300e-003	1.6000e-004	3.6871
Landscaping	0.0133	4.8100e-003	0.4195	2.0000e-005		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	0.6878	0.6878	7.0000e-004	0.0000	0.7053
Total	**0.4334**	**7.7300e-003**	**0.5943**	**3.7000e-004**		**0.0273**	**0.0273**		**0.0273**	**0.0273**	**2.5074**	**1.7177**	**4.2252**	**4.7300e-003**	**1.6000e-004**	**4.3924**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			

Mitigated	5.8420	0.1171	2.8300e-003	9.6139
Unmitigated	5.8420	0.1171	2.8300e-003	9.6139

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.58347 / 2.25915	5.8420	0.1171	2.8300e-003	9.6139
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**5.8420**	**0.1171**	**2.8300e-003**	**9.6139**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.58347 / 2.25915	5.8420	0.1171	2.8300e-003	9.6139
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**5.8420**	**0.1171**	**2.8300e-003**	**9.6139**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.1357	0.3035	0.0000	12.7234
Unmitigated	5.1357	0.3035	0.0000	12.7234

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	25.3	5.1357	0.3035	0.0000	12.7234
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**5.1357**	**0.3035**	**0.0000**	**12.7234**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	25.3	5.1357	0.3035	0.0000	12.7234
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**5.1357**	**0.3035**	**0.0000**	**12.7234**

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

Avalon West Valley III - Avalon Building - Santa Clara County, Annual

Avalon West Valley III - Avalon Building

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	245.00	Dwelling Unit	3.00	245,000.00	701
Strip Mall	17.80	1000sqft	0.00	17,800.00	0
Enclosed Parking with Elevator	399.00	Space	2.00	159,600.00	0
Parking Lot	38.00	Space	0.00	15,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	380	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SVP Future Rate

Land Use - Double acreage for parking garage

Construction Phase - Based on model defaults

Grading - Estimated export cy based on parking area size, two levels of excavation and 20% swell

Demolition - Estiamted from Google Earth assuming two level buildings

Construction Off-road Equipment Mitigation - Tier 4 and BMPs

Trips and VMT - On- and near-site travel

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblGrading	MaterialExported	0.00	50,000.00

tblGrading	MaterialImported	0.00	5,000.00
tblLandUse	LotAcreage	6.45	3.00
tblLandUse	LotAcreage	0.41	0.00
tblLandUse	LotAcreage	3.59	2.00
tblLandUse	LotAcreage	0.34	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	380
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	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

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1228	1.4903	0.9379	2.0700e-003	0.1489	0.0531	0.2019	0.0513	0.0495	0.1008	0.0000	185.8472	185.8472	0.0379	0.0000	186.7952
2022	2.0422	1.7811	1.7648	3.1600e-003	0.0215	0.0763	0.0978	5.8700e-003	0.0717	0.0776	0.0000	277.5208	277.5208	0.0581	0.0000	278.9733
Maximum	**2.0422**	**1.7811**	**1.7648**	**3.1600e-003**	**0.1489**	**0.0763**	**0.2019**	**0.0513**	**0.0717**	**0.1008**	**0.0000**	**277.5208**	**277.5208**	**0.0581**	**0.0000**	**278.9733**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0429	0.9972	1.0230	2.0700e-003	0.0727	3.8600e-003	0.0766	0.0138	3.8300e-003	0.0176	0.0000	185.8470	185.8470	0.0379	0.0000	186.7951
2022	1.9325	1.3614	1.9201	3.1600e-003	0.0215	8.1400e-003	0.0297	5.8700e-003	8.1200e-003	0.0140	0.0000	277.5206	277.5206	0.0581	0.0000	278.9730
Maximum	**1.9325**	**1.3614**	**1.9201**	**3.1600e-003**	**0.0727**	**8.1400e-003**	**0.0766**	**0.0138**	**8.1200e-003**	**0.0176**	**0.0000**	**277.5206**	**277.5206**	**0.0581**	**0.0000**	**278.9730**

	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	**8.76**	**27.90**	**-8.89**	**0.00**	**44.70**	**90.72**	**64.56**	**65.68**	**90.14**	**82.30**	**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	**8-30-2021**	**11-29-2021**	1.3369	0.8664
2	**11-30-2021**	**2-27-2022**	0.7089	0.4971
3	**2-28-2022**	**5-29-2022**	0.6938	0.5028
4	**5-30-2022**	**8-29-2022**	0.7025	0.5094

5	**8-30-2022**	**9-30-2022**	0.4257	0.4036
		Highest	1.3369	0.8664

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	1.8434	0.0340	2.6010	1.6500e-003		0.1214	0.1214		0.1214	0.1214	11.1695	7.5675	18.7370	0.0208	7.3000e-004	19.4759
Energy	0.0116	0.0996	0.0432	6.3000e-004		8.0400e-003	8.0400e-003		8.0400e-003	8.0400e-003	0.0000	484.4629	484.4629	0.0304	7.9400e-003	487.5895
Mobile	0.4460	1.6931	4.9942	0.0182	1.7812	0.0143	1.7955	0.4768	0.0133	0.4901	0.0000	1,667.1021	1,667.1021	0.0528	0.0000	1,668.4223
Waste						0.0000	0.0000		0.0000	0.0000	26.6710	0.0000	26.6710	1.5762	0.0000	66.0762
Water						0.0000	0.0000		0.0000	0.0000	5.4825	22.6762	28.1588	0.5648	0.0137	46.3487
Total	**2.3011**	**1.8267**	**7.6384**	**0.0205**	**1.7812**	**0.1437**	**1.9249**	**0.4768**	**0.1427**	**0.6195**	**43.3230**	**2,181.8088**	**2,225.1318**	**2.2451**	**0.0223**	**2,287.9126**

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	1.8434	0.0340	2.6010	1.6500e-003		0.1214	0.1214		0.1214	0.1214	11.1695	7.5675	18.7370	0.0208	7.3000e-004	19.4759
Energy	0.0116	0.0996	0.0432	6.3000e-004		8.0400e-003	8.0400e-003		8.0400e-003	8.0400e-003	0.0000	484.4629	484.4629	0.0304	7.9400e-003	487.5895
Mobile	0.4460	1.6931	4.9942	0.0182	1.7812	0.0143	1.7955	0.4768	0.0133	0.4901	0.0000	1,667.1021	1,667.1021	0.0528	0.0000	1,668.4223

Waste						0.0000	0.0000		0.0000	0.0000	26.6710	0.0000	26.6710	1.5762	0.0000	66.0762
Water						0.0000	0.0000		0.0000	0.0000	5.4825	22.6762	28.1588	0.5648	0.0137	46.3487
Total	**2.3011**	**1.8267**	**7.6384**	**0.0205**	**1.7812**	**0.1437**	**1.9249**	**0.4768**	**0.1427**	**0.6195**	**43.3230**	**2,181.8088**	**2,225.1318**	**2.2451**	**0.0223**	**2,287.9126**

	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	8/30/2021	9/24/2021	5	20	
2	Site Preparation	Site Preparation	9/25/2021	10/1/2021	5	5	
3	Grading	Grading	10/2/2021	10/13/2021	5	8	
4	Building Construction	Building Construction	10/14/2021	8/31/2022	5	230	
5	Paving	Paving	9/1/2022	9/26/2022	5	18	
6	Architectural Coating	Architectural Coating	9/27/2022	10/20/2022	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 2

Residential Indoor: 496,125; Residential Outdoor: 165,375; Non-Residential Indoor: 26,700; Non-Residential Outdoor: 8,900; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73

Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	51.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	256.00	58.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	591.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	6,875.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0640	0.0000	0.0640	9.6900e-003	0.0000	9.6900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**0.0640**	**0.0155**	**0.0795**	**9.6900e-003**	**0.0144**	**0.0241**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

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	6.0000e-004	0.0293	4.8000e-003	4.0000e-005	2.6000e-004	3.0000e-005	2.8000e-004	7.0000e-005	2.0000e-005	1.0000e-004	0.0000	3.7976	3.7976	3.9000e-004	0.0000	3.8073
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	1.5000e-004	7.0000e-005	8.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1178	0.1178	0.0000	0.0000	0.1180
Total	**7.5000e-004**	**0.0294**	**5.6900e-003**	**4.0000e-005**	**3.7000e-004**	**3.0000e-005**	**3.9000e-004**	**1.0000e-004**	**2.0000e-005**	**1.3000e-004**	**0.0000**	**3.9154**	**3.9154**	**3.9000e-004**	**0.0000**	**3.9252**

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					0.0288	0.0000	0.0288	2.1800e-003	0.0000	2.1800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8400e-003	0.1356	0.2467	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**5.8400e-003**	**0.1356**	**0.2467**	**3.9000e-004**	**0.0288**	**6.2000e-004**	**0.0294**	**2.1800e-003**	**6.2000e-004**	**2.8000e-003**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

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	6.0000e-004	0.0293	4.8000e-003	4.0000e-005	2.6000e-004	3.0000e-005	2.8000e-004	7.0000e-005	2.0000e-005	1.0000e-004	0.0000	3.7976	3.7976	3.9000e-004	0.0000	3.8073
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	1.5000e-004	7.0000e-005	8.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1178	0.1178	0.0000	0.0000	0.1180
Total	**7.5000e-004**	**0.0294**	**5.6900e-003**	**4.0000e-005**	**3.7000e-004**	**3.0000e-005**	**3.9000e-004**	**1.0000e-004**	**2.0000e-005**	**1.3000e-004**	**0.0000**	**3.9154**	**3.9154**	**3.9000e-004**	**0.0000**	**3.9252**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	**9.7200e-003**	**0.1012**	**0.0529**	**1.0000e-004**	**0.0452**	**5.1100e-003**	**0.0503**	**0.0248**	**4.7000e-003**	**0.0295**	**0.0000**	**8.3589**	**8.3589**	**2.7000e-003**	**0.0000**	**8.4265**

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	5.0000e-005	2.0000e-005	2.7000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0354	0.0354	0.0000	0.0000	0.0354
Total	**5.0000e-005**	**2.0000e-005**	**2.7000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0354**	**0.0354**	**0.0000**	**0.0000**	**0.0354**

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					0.0203	0.0000	0.0203	5.5900e-003	0.0000	5.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0304	0.0574	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	**1.7400e-003**	**0.0304**	**0.0574**	**1.0000e-004**	**0.0203**	**1.6000e-004**	**0.0205**	**5.5900e-003**	**1.6000e-004**	**5.7500e-003**	**0.0000**	**8.3589**	**8.3589**	**2.7000e-003**	**0.0000**	**8.4265**

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	5.0000e-005	2.0000e-005	2.7000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0354	0.0354	0.0000	0.0000	0.0354
Total	**5.0000e-005**	**2.0000e-005**	**2.7000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0354**	**0.0354**	**0.0000**	**0.0000**	**0.0354**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0293	0.0000	0.0293	0.0139	0.0000	0.0139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1600e-003	0.0990	0.0634	1.2000e-004		4.6400e-003	4.6400e-003		4.2700e-003	4.2700e-003	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**9.1600e-003**	**0.0990**	**0.0634**	**1.2000e-004**	**0.0293**	**4.6400e-003**	**0.0340**	**0.0139**	**4.2700e-003**	**0.0182**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

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	7.0100e-003	0.3411	0.0558	4.6000e-004	2.9800e-003	2.9000e-004	3.2800e-003	8.3000e-004	2.8000e-004	1.1100e-003	0.0000	44.1764	44.1764	4.5100e-003	0.0000	44.2891
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	6.0000e-005	3.0000e-005	3.5000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0471	0.0471	0.0000	0.0000	0.0472
Total	**7.0700e-003**	**0.3411**	**0.0561**	**4.6000e-004**	**3.0200e-003**	**2.9000e-004**	**3.3300e-003**	**8.4000e-004**	**2.8000e-004**	**1.1200e-003**	**0.0000**	**44.2235**	**44.2235**	**4.5100e-003**	**0.0000**	**44.3363**

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					0.0132	0.0000	0.0132	3.1400e-003	0.0000	3.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0800e-003	0.0413	0.0760	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**2.0800e-003**	**0.0413**	**0.0760**	**1.2000e-004**	**0.0132**	**1.9000e-004**	**0.0134**	**3.1400e-003**	**1.9000e-004**	**3.3300e-003**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

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	7.0100e-003	0.3411	0.0558	4.6000e-004	2.9800e-003	2.9000e-004	3.2800e-003	8.3000e-004	2.8000e-004	1.1100e-003	0.0000	44.1764	44.1764	4.5100e-003	0.0000	44.2891

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	6.0000e-005	3.0000e-005	3.5000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0471	0.0471	0.0000	0.0000	0.0472
Total	**7.0700e-003**	**0.3411**	**0.0561**	**4.6000e-004**	**3.0200e-003**	**2.9000e-004**	**3.3300e-003**	**8.4000e-004**	**2.8000e-004**	**1.1200e-003**	**0.0000**	**44.2235**	**44.2235**	**4.5100e-003**	**0.0000**	**44.3363**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0542	0.4968	0.4724	7.7000e-004		0.0273	0.0273		0.0257	0.0257	0.0000	66.0166	66.0166	0.0159	0.0000	66.4148
Total	**0.0542**	**0.4968**	**0.4724**	**7.7000e-004**		**0.0273**	**0.0273**		**0.0257**	**0.0257**	**0.0000**	**66.0166**	**66.0166**	**0.0159**	**0.0000**	**66.4148**

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	2.7900e-003	0.1051	0.0283	1.4000e-004	1.5300e-003	9.0000e-005	1.6200e-003	4.5000e-004	8.0000e-005	5.3000e-004	0.0000	13.1434	13.1434	1.2200e-003	0.0000	13.1739
Worker	7.3800e-003	3.2600e-003	0.0431	6.0000e-005	5.4200e-003	7.0000e-005	5.5000e-003	1.4500e-003	7.0000e-005	1.5200e-003	0.0000	5.7317	5.7317	2.3000e-004	0.0000	5.7373
Total	**0.0102**	**0.1084**	**0.0714**	**2.0000e-004**	**6.9500e-003**	**1.6000e-004**	**7.1200e-003**	**1.9000e-003**	**1.5000e-004**	**2.0500e-003**	**0.0000**	**18.8751**	**18.8751**	**1.4500e-003**	**0.0000**	**18.9112**

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	0.0152	0.3110	0.5094	7.7000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	66.0166	66.0166	0.0159	0.0000	66.4147
Total	**0.0152**	**0.3110**	**0.5094**	**7.7000e-004**		**2.4100e-003**	**2.4100e-003**		**2.4100e-003**	**2.4100e-003**	**0.0000**	**66.0166**	**66.0166**	**0.0159**	**0.0000**	**66.4147**

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	2.7900e-003	0.1051	0.0283	1.4000e-004	1.5300e-003	9.0000e-005	1.6200e-003	4.5000e-004	8.0000e-005	5.3000e-004	0.0000	13.1434	13.1434	1.2200e-003	0.0000	13.1739
Worker	7.3800e-003	3.2600e-003	0.0431	6.0000e-005	5.4200e-003	7.0000e-005	5.5000e-003	1.4500e-003	7.0000e-005	1.5200e-003	0.0000	5.7317	5.7317	2.3000e-004	0.0000	5.7373
Total	**0.0102**	**0.1084**	**0.0714**	**2.0000e-004**	**6.9500e-003**	**1.6000e-004**	**7.1200e-003**	**1.9000e-003**	**1.5000e-004**	**2.0500e-003**	**0.0000**	**18.8751**	**18.8751**	**1.4500e-003**	**0.0000**	**18.9112**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1476	1.3508	1.4154	2.3300e-003		0.0700	0.0700		0.0658	0.0658	0.0000	200.4423	200.4423	0.0480	0.0000	201.6428
Total	**0.1476**	**1.3508**	**1.4154**	**2.3300e-003**		**0.0700**	**0.0700**		**0.0658**	**0.0658**	**0.0000**	**200.4423**	**200.4423**	**0.0480**	**0.0000**	**201.6428**

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	7.8300e-003	0.3086	0.0801	4.1000e-004	4.6400e-003	2.3000e-004	4.8700e-003	1.3500e-003	2.2000e-004	1.5700e-003	0.0000	39.5303	39.5303	3.4800e-003	0.0000	39.6172
Worker	0.0206	8.7700e-003	0.1185	1.9000e-004	0.0165	2.2000e-004	0.0167	4.4000e-003	2.0000e-004	4.6000e-003	0.0000	16.7755	16.7755	6.1000e-004	0.0000	16.7906
Total	**0.0284**	**0.3174**	**0.1986**	**6.0000e-004**	**0.0211**	**4.5000e-004**	**0.0216**	**5.7500e-003**	**4.2000e-004**	**6.1700e-003**	**0.0000**	**56.3058**	**56.3058**	**4.0900e-003**	**0.0000**	**56.4078**

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	0.0462	0.9439	1.5461	2.3300e-003		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003	0.0000	200.4421	200.4421	0.0480	0.0000	201.6426

Total	**0.0462**	**0.9439**	**1.5461**	**2.3300e-003**		**7.3200e-003**	**7.3200e-003**		**7.3200e-003**	**7.3200e-003**	**0.0000**	**200.4421**	**200.4421**	**0.0480**	**0.0000**	**201.6426**

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	7.8300e-003	0.3086	0.0801	4.1000e-004	4.6400e-003	2.3000e-004	4.8700e-003	1.3500e-003	2.2000e-004	1.5700e-003	0.0000	39.5303	39.5303	3.4800e-003	0.0000	39.6172
Worker	0.0206	8.7700e-003	0.1185	1.9000e-004	0.0165	2.2000e-004	0.0167	4.4000e-003	2.0000e-004	4.6000e-003	0.0000	16.7755	16.7755	6.1000e-004	0.0000	16.7906
Total	**0.0284**	**0.3174**	**0.1986**	**6.0000e-004**	**0.0211**	**4.5000e-004**	**0.0216**	**5.7500e-003**	**4.2000e-004**	**6.1700e-003**	**0.0000**	**56.3058**	**56.3058**	**4.0900e-003**	**0.0000**	**56.4078**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9300e-003	0.1001	0.1312	2.1000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	18.0248	18.0248	5.8300e-003	0.0000	18.1705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.9300e-003**	**0.1001**	**0.1312**	**2.1000e-004**		**5.1100e-003**	**5.1100e-003**		**4.7000e-003**	**4.7000e-003**	**0.0000**	**18.0248**	**18.0248**	**5.8300e-003**	**0.0000**	**18.1705**

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	1.3000e-004	5.0000e-005	7.2000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1023	0.1023	0.0000	0.0000	0.1024
Total	**1.3000e-004**	**5.0000e-005**	**7.2000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1023**	**0.1023**	**0.0000**	**0.0000**	**0.1024**

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	3.0100e-003	0.0904	0.1557	2.1000e-004		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	18.0248	18.0248	5.8300e-003	0.0000	18.1705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.0100e-003**	**0.0904**	**0.1557**	**2.1000e-004**		**3.4000e-004**	**3.4000e-004**		**3.4000e-004**	**3.4000e-004**	**0.0000**	**18.0248**	**18.0248**	**5.8300e-003**	**0.0000**	**18.1705**

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	1.3000e-004	5.0000e-005	7.2000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1023	0.1023	0.0000	0.0000	0.1024
Total	**1.3000e-004**	**5.0000e-005**	**7.2000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1023**	**0.1023**	**0.0000**	**0.0000**	**0.1024**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8539					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**1.8558**	**0.0127**	**0.0163**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

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	4.3000e-004	1.8000e-004	2.4600e-003	0.0000	3.4000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3477	0.3477	1.0000e-005	0.0000	0.3480
Total	**4.3000e-004**	**1.8000e-004**	**2.4600e-003**	**0.0000**	**3.4000e-004**	**0.0000**	**3.5000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3477**	**0.3477**	**1.0000e-005**	**0.0000**	**0.3480**

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	1.8539					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9000e-004	9.5400e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**1.8544**	**9.5400e-003**	**0.0165**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

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	4.3000e-004	1.8000e-004	2.4600e-003	0.0000	3.4000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3477	0.3477	1.0000e-005	0.0000	0.3480
Total	**4.3000e-004**	**1.8000e-004**	**2.4600e-003**	**0.0000**	**3.4000e-004**	**0.0000**	**3.5000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3477**	**0.3477**	**1.0000e-005**	**0.0000**	**0.3480**

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	0.4460	1.6931	4.9942	0.0182	1.7812	0.0143	1.7955	0.4768	0.0133	0.4901	0.0000	1,667.1021	1,667.1021	0.0528	0.0000	1,668.4223
Unmitigated	0.4460	1.6931	4.9942	0.0182	1.7812	0.0143	1.7955	0.4768	0.0133	0.4901	0.0000	1,667.1021	1,667.1021	0.0528	0.0000	1,668.4223

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,629.25	1,565.55	1435.70	3,678,050	3,678,050
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	788.90	748.31	363.65	1,112,442	1,112,442
Total	2,418.15	2,313.86	1,799.35	4,790,492	4,790,492

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 with Elevator	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
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

Apartments Mid Rise	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Enclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Parking Lot	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Strip Mall	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

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	369.2584	369.2584	0.0282	5.8300e-003	371.7004
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	369.2584	369.2584	0.0282	5.8300e-003	371.7004
NaturalGas Mitigated	0.0116	0.0996	0.0432	6.3000e-004		8.0400e-003	8.0400e-003		8.0400e-003	8.0400e-003	0.0000	115.2045	115.2045	2.2100e-003	2.1100e-003	115.8891
NaturalGas Unmitigated	0.0116	0.0996	0.0432	6.3000e-004		8.0400e-003	8.0400e-003		8.0400e-003	8.0400e-003	0.0000	115.2045	115.2045	2.2100e-003	2.1100e-003	115.8891

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	2.11667e+006	0.0114	0.0975	0.0415	6.2000e-004		7.8900e-003	7.8900e-003		7.8900e-003	7.8900e-003	0.0000	112.9533	112.9533	2.1600e-003	2.0700e-003	113.6245
Enclosed Parking with Elevator	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
Strip Mall	42186	2.3000e-004	2.0700e-003	1.7400e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2512	2.2512	4.0000e-005	4.0000e-005	2.2646
Total		**0.0116**	**0.0996**	**0.0432**	**6.3000e-004**		**8.0500e-003**	**8.0500e-003**		**8.0500e-003**	**8.0500e-003**	**0.0000**	**115.2045**	**115.2045**	**2.2000e-003**	**2.1100e-003**	**115.8891**

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	2.11667e+006	0.0114	0.0975	0.0415	6.2000e-004		7.8900e-003	7.8900e-003		7.8900e-003	7.8900e-003	0.0000	112.9533	112.9533	2.1600e-003	2.0700e-003	113.6245
Enclosed Parking with Elevator	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
Strip Mall	42186	2.3000e-004	2.0700e-003	1.7400e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2512	2.2512	4.0000e-005	4.0000e-005	2.2646
Total		**0.0116**	**0.0996**	**0.0432**	**6.3000e-004**		**8.0500e-003**	**8.0500e-003**		**8.0500e-003**	**8.0500e-003**	**0.0000**	**115.2045**	**115.2045**	**2.2000e-003**	**2.1100e-003**	**115.8891**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.01145e+006	174.3380	0.0133	2.7500e-003	175.4909

Enclosed Parking with Elevator	935256	161.2055	0.0123	2.5500e-003	162.2716
Parking Lot	5320	0.9170	7.0000e-005	1.0000e-005	0.9231
Strip Mall	190282	32.7980	2.5000e-003	5.2000e-004	33.0149
Total		**369.2584**	**0.0282**	**5.8300e-003**	**371.7004**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.01145e+006	174.3380	0.0133	2.7500e-003	175.4909
Enclosed Parking with Elevator	935256	161.2055	0.0123	2.5500e-003	162.2716
Parking Lot	5320	0.9170	7.0000e-005	1.0000e-005	0.9231
Strip Mall	190282	32.7980	2.5000e-003	5.2000e-004	33.0149
Total		**369.2584**	**0.0282**	**5.8300e-003**	**371.7004**

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	1.8434	0.0340	2.6010	1.6500e-003		0.1214	0.1214		0.1214	0.1214	11.1695	7.5675	18.7370	0.0208	7.3000e-004	19.4759
Unmitigated	1.8434	0.0340	2.6010	1.6500e-003		0.1214	0.1214		0.1214	0.1214	11.1695	7.5675	18.7370	0.0208	7.3000e-004	19.4759

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	0.1854					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0377					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5653	0.0130	0.7784	1.5500e-003		0.1113	0.1113		0.1113	0.1113	11.1695	4.5878	15.7573	0.0180	7.3000e-004	16.4244
Landscaping	0.0551	0.0210	1.8226	1.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	2.9797	2.9797	2.8700e-003	0.0000	3.0515
Total	**1.8434**	**0.0340**	**2.6010**	**1.6500e-003**		**0.1214**	**0.1214**		**0.1214**	**0.1214**	**11.1695**	**7.5675**	**18.7370**	**0.0208**	**7.3000e-004**	**19.4759**

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	0.1854					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0377					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hearth	0.5653	0.0130	0.7784	1.5500e-003		0.1113	0.1113		0.1113	0.1113	11.1695	4.5878	15.7573	0.0180	7.3000e-004	16.4244
Landscaping	0.0551	0.0210	1.8226	1.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	2.9797	2.9797	2.8700e-003	0.0000	3.0515
Total	**1.8434**	**0.0340**	**2.6010**	**1.6500e-003**		**0.1214**	**0.1214**		**0.1214**	**0.1214**	**11.1695**	**7.5675**	**18.7370**	**0.0208**	**7.3000e-004**	**19.4759**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	28.1588	0.5648	0.0137	46.3487
Unmitigated	28.1588	0.5648	0.0137	46.3487

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	15.9627 / 10.0635	26.0232	0.5218	0.0126	42.8255
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000

Strip Mall	1.31849 / 0.808107	2.1355	0.0431	1.0400e-003	3.5233
Total		**28.1588**	**0.5648**	**0.0137**	**46.3487**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	15.9627 / 10.0635	26.0232	0.5218	0.0126	42.8255
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.808107	2.1355	0.0431	1.0400e-003	3.5233
Total		**28.1588**	**0.5648**	**0.0137**	**46.3487**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.6710	1.5762	0.0000	66.0762

Unmitigated	26.6710	1.5762	0.0000	66.0762

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	112.7	22.8771	1.3520	0.0000	56.6770
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992
Total		**26.6710**	**1.5762**	**0.0000**	**66.0762**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	112.7	22.8771	1.3520	0.0000	56.6770
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992

Total		**26.6710**	**1.5762**	**0.0000**	**66.0762**

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

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality

429 East Cotati Avenue
Cotati, CA 94931

Tel: 707-794-0400 *Fax: 707-794-0405*
www.illingworthrodkin.com *illro@illingworthrodkin.com*

M E M O

Date: November 16, 2018

To: Fiona Phung
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126

From: James A. Reyff
Illingworth & Rodkin, Inc.
429 East Cotati Ave
Cotati, CA 94931

RE: Avalon West Valley Expansion Air Quality and GHG Analysis - San José, CA

SUBJECT: Minor Project Modifications I&R Job#17-235

Illingworth & Rodkin, Inc. (I&R) prepared an air quality and greenhouse gas (GHG) emission assessment for the Avalon West Valley Expansion project that was dated July 10, 2018. I&R understands that there is a minor revision being considered in terms of project dwelling unit numbers. This memo addresses the effect of this change with respect to the Air Quality and GHG Analysis.

Overall, I&R finds that this change would have similar or slightly greater impacts in terms of air pollutant and greenhouse gas emissions. The conclusions identified in the July version of I&R's assessment would not change. This evaluation assumes that the project's environmental commitments and energy-efficiency measures to reduce construction and operational emissions that are part of the project would continue to apply. The effect of these project changes is discussed below.

- The entire project's residential use has been modified from 300 dwelling units to 307 dwelling units. The updated 307 dwelling units was entered into CalEEMod as "Apartment Mid Rise," which is the proper land use for apartments of 3 to 10 levels. The Manzanita Building would continue to have 55 dwelling units. The Avalon Building would include the additional 7 dwelling units for a new total of 252 dwelling units.

- The acreage, layout, and overall size of the project would not change, so the change to predicted construction emissions and associated health risk impacts would be negligible.

- The parking and retail land usage would not change.

- In terms of emissions of air pollutants, this change would result in similar or slightly greater pollutant emissions because the dwelling unit size increased from 300 to 307 dwelling units for the entire project.

- In terms of GHG, emissions associated with residential uses would increase slightly, less than 2 percent.

- The per-capita GHG emissions increase since they are a result of total GHG emissions divided by service population. Service population used to compute GHG impacts would increase due to the increase in dwelling units. The number of future residents, estimated using the San José 3.20 average persons per household 2011-2018 rate from the California Department of Finance, would be 983 with the updated project.[1] With the modified project, the number of future employees was assumed to remain at 45. The total service population with the modified project would be 1,028. Therefore, GHG impacts, which are expressed in terms of emissions per capita, would decrease slightly with the proposed increase in dwelling units.

- Table 1 compares the operational criteria air pollutants from the previous July 2018 assessment versus the updated model. Table 2 compares the GHG emissions in metrics tons between the previous assessment and the updated model.

Table 1. Previous vs. Updated Operational Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
Previous Total Operational Emissions (pounds per day)	10.8 lbs./day	8.6 lbs./day	8.5 lbs./day	2.4 lbs./day
Updated Total Operational Emissions (pounds per day)	10.9 lbs./day	8.7 lbs./day	8.6 lbs./day	2.4 lbs./day
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	**No**	***No***	**No**	**No**

[1] State of California, Department of Finance. "E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2018." Accessed: June 18, 2018. Available at: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/

Table 2. Previous vs. Updated Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Previous Project 2030 Full Build-Out Emissions	Updated Project 2030 Full Build-Out Emissions
Area	16	16
Energy Consumption	522	530
Mobile	1,208	1,231
Solid Waste Generation	79	80
Water Usage	34	35
Total	**1,859 MT CO_2e/year**	**1,892 MT Co_{2e}/year**
Service Population Emissions	1.85 CO_2e/S.P./year[1]	**1.84 CO_{2e}/S.P./year[2]**
2030 Substantial Progress Threshold	***2.6 MT CO_2e/S.P./year***	
Significant?	**No**	**No**

Notes: [1] Based on a service population of 1,005. [2] Based on a service population of 1,028

- Table 3 compares the construction criteria air pollutants from the previous July 2018 assessment versus the updated modeling. Construction activity is anticipated to be similar with the updated project and this is reflected in the CalEEMod modeling. Construction health risk impacts would be similar the exhaust PM_{10} emissions the same as those reported previously.

Table 3. Previous vs. Updated Construction Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
MANZANITA BUILDING AND PARKING STRUCTURE				
Previous Total Construction Emissions (pounds per day)	6.2 lbs./day	31.0 lbs./day	1.1 lbs./day	1.0 lbs./day
Updated Total Construction Emissions (pounds per day)	6.2 lbs./day	31.0 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**
AVALON BUILDING				
Previous Total Construction Emissions (pounds per day)	15.1 lbs./day	28.0 lbs./day	0.9 lbs./day	0.8 lbs./day
Updated Total Construction Emissions (pounds per day)	15.1 lbs./day	28.1 lbs./day	0.9 lbs./day	0.8 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**

Attachment: Updated CalEEMod Modeling Output

Avalon West Valley III - Operational

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	368.00	Space	0.00	147,200.00	0
Parking Lot	38.00	Space	0.00	15,200.00	0
Unenclosed Parking with Elevator	742.00	Space	0.00	296,800.00	0
Apartments Mid Rise	307.00	Dwelling Unit	6.80	307,000.00	878
Strip Mall	17.80	1000sqft	0.00	17,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
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 Future Rate

Land Use - assigned acreage to residential

Construction Phase - operational run only

Off-road Equipment - operational run only

Trips and VMT - operational run only

Vehicle Trips - TIA rates w/adjustments Res = 5.10,4.90,4.50 Retail = 24.05,22.81,11.08

Woodstoves - No hearth = 96 nat gas

Water And Wastewater - all WTP treatment

Construction Off-road Equipment Mitigation -

Energy Mitigation - Meet new 2020 Title 24 requirements

Water Mitigation - Outdoor water conservation strategy

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	PhaseEndDate	9/10/2021	8/30/2021
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	46.05	96.00
tblFireplaces	NumberWood	52.19	0.00
tblLandUse	LotAcreage	3.31	0.00
tblLandUse	LotAcreage	0.34	0.00
tblLandUse	LotAcreage	6.68	0.00
tblLandUse	LotAcreage	8.08	6.80
tblLandUse	LotAcreage	0.41	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	6.39	4.90
tblVehicleTrips	ST_TR	42.04	22.81
tblVehicleTrips	SU_TR	5.86	4.50
tblVehicleTrips	SU_TR	20.43	11.08
tblVehicleTrips	WD_TR	6.65	5.10
tblVehicleTrips	WD_TR	44.32	24.05
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
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	1.6039	0.0367	2.2937	1.9000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	15.7289	15.7289	3.8600e-003	2.2000e-004	15.8908
Energy	0.0145	0.1243	0.0537	7.9000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	525.4426	525.4426	0.0409	0.0105	529.6043
Mobile	0.3751	1.4321	4.2685	0.0157	1.5389	0.0123	1.5512	0.4119	0.0114	0.4233	0.0000	1,435.8601	1,435.8601	0.0452	0.0000	1,436.9889
Waste						0.0000	0.0000		0.0000	0.0000	32.4603	0.0000	32.4603	1.9184	0.0000	80.4190
Water						0.0000	0.0000		0.0000	0.0000	7.5433	21.3533	28.8966	0.0281	0.0169	34.6192

Total	**1.9935**	**1.5931**	**6.6159**	**0.0166**	**1.5389**	**0.0358**	**1.5747**	**0.4119**	**0.0350**	**0.4469**	**40.0036**	**1,998.3849**	**2,038.3885**	**2.0364**	**0.0276**	**2,097.5221**

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	1.6039	0.0367	2.2937	1.9000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	15.7289	15.7289	3.8600e-003	2.2000e-004	15.8908
Energy	0.0117	0.1004	0.0433	6.4000e-004		8.1100e-003	8.1100e-003		8.1100e-003	8.1100e-003	0.0000	464.7837	464.7837	0.0371	9.3400e-003	468.4950
Mobile	0.3751	1.4321	4.2685	0.0157	1.5389	0.0123	1.5512	0.4119	0.0114	0.4233	0.0000	1,435.8601	1,435.8601	0.0452	0.0000	1,436.9889
Waste						0.0000	0.0000		0.0000	0.0000	32.4603	0.0000	32.4603	1.9184	0.0000	80.4190
Water						0.0000	0.0000		0.0000	0.0000	7.5433	20.1177	27.6610	0.0280	0.0168	33.3729
Total	**1.9907**	**1.5692**	**6.6055**	**0.0165**	**1.5389**	**0.0339**	**1.5728**	**0.4119**	**0.0330**	**0.4449**	**40.0036**	**1,936.4905**	**1,976.4941**	**2.0324**	**0.0264**	**2,035.1666**

	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	**0.14**	**1.50**	**0.16**	**0.90**	**0.00**	**5.39**	**0.12**	**0.00**	**5.52**	**0.43**	**0.00**	**3.10**	**3.04**	**0.19**	**4.42**	**2.97**

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	0.3751	1.4321	4.2685	0.0157	1.5389	0.0123	1.5512	0.4119	0.0114	0.4233	0.0000	1,435.8601	1,435.8601	0.0452	0.0000	1,436.9889
Unmitigated	0.3751	1.4321	4.2685	0.0157	1.5389	0.0123	1.5512	0.4119	0.0114	0.4233	0.0000	1,435.8601	1,435.8601	0.0452	0.0000	1,436.9889

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,565.70	1,504.30	1381.50	3,535,118	3,535,118
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	428.09	406.02	197.22	603,625	603,625
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	1,993.79	1,910.32	1,578.72	4,138,743	4,138,743

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	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
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	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	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Enclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Parking Lot	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Strip Mall	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Unenclosed Parking with Elevator	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	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	348.6254	348.6254	0.0349	7.2100e-003	351.6464
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	381.6540	381.6540	0.0382	7.9000e-003	384.9612
NaturalGas Mitigated	0.0117	0.1004	0.0433	6.4000e-004		8.1100e-003	8.1100e-003		8.1100e-003	8.1100e-003	0.0000	116.1583	116.1583	2.2300e-003	2.1300e-003	116.8485
NaturalGas Unmitigated	0.0145	0.1243	0.0537	7.9000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	143.7886	143.7886	2.7600e-003	2.6400e-003	144.6431

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	2.65231e+006	0.0143	0.1222	0.0520	7.8000e-004		9.8800e-003	9.8800e-003		9.8800e-003	9.8800e-003	0.0000	141.5374	141.5374	2.7100e-003	2.5900e-003	142.3785
Enclosed Parking with Elevator	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
Strip Mall	42186	2.3000e-004	2.0700e-003	1.7400e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2512	2.2512	4.0000e-005	4.0000e-005	2.2646
Unenclosed Parking with Elevator	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		**0.0145**	**0.1243**	**0.0538**	**7.9000e-004**		**0.0100**	**0.0100**		**0.0100**	**0.0100**	**0.0000**	**143.7886**	**143.7886**	**2.7500e-003**	**2.6300e-003**	**144.6431**

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	2.14719e+006	0.0116	0.0989	0.0421	6.3000e-004		8.0000e-003	8.0000e-003		8.0000e-003	8.0000e-003	0.0000	114.5824	114.5824	2.2000e-003	2.1000e-003	115.2633
Enclosed Parking with Elevator	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
Strip Mall	29530.2	1.6000e-004	1.4500e-003	1.2200e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5758	1.5758	3.0000e-005	3.0000e-005	1.5852
Unenclosed Parking with Elevator	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		**0.0117**	**0.1004**	**0.0433**	**6.4000e-004**		**8.1100e-003**	**8.1100e-003**		**8.1100e-003**	**8.1100e-003**	**0.0000**	**116.1583**	**116.1583**	**2.2300e-003**	**2.1300e-003**	**116.8485**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.2674e+006	166.7165	0.0167	3.4500e-003	168.1612

Enclosed Parking with Elevator	862592	113.4669	0.0114	2.3500e-003	114.4501
Parking Lot	5320	0.6998	7.0000e-005	1.0000e-005	0.7059
Strip Mall	190282	25.0300	2.5000e-003	5.2000e-004	25.2469
Unenclosed Parking with Elevator	575792	75.7407	7.5700e-003	1.5700e-003	76.3970
Total		**381.6540**	**0.0382**	**7.9000e-003**	**384.9612**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.20416e+006	158.3975	0.0158	3.2800e-003	159.7701
Enclosed Parking with Elevator	689485	90.6961	9.0700e-003	1.8800e-003	91.4820
Parking Lot	5320	0.6998	7.0000e-005	1.0000e-005	0.7059
Strip Mall	175544	23.0913	2.3100e-003	4.8000e-004	23.2914
Unenclosed Parking with Elevator	575792	75.7407	7.5700e-003	1.5700e-003	76.3970
Total		**348.6254**	**0.0349**	**7.2200e-003**	**351.6464**

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	1.6039	0.0367	2.2937	1.9000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	15.7289	15.7289	3.8600e-003	2.2000e-004	15.8908
Unmitigated	1.6039	0.0367	2.2937	1.9000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	15.7289	15.7289	3.8600e-003	2.2000e-004	15.8908

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	0.2350					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2982					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0104	4.4000e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	11.9846	11.9846	2.3000e-004	2.2000e-004	12.0558
Landscaping	0.0695	0.0264	2.2893	1.2000e-004		0.0127	0.0127		0.0127	0.0127	0.0000	3.7444	3.7444	3.6300e-003	0.0000	3.8351
Total	**1.6039**	**0.0367**	**2.2937**	**1.9000e-004**		**0.0135**	**0.0135**		**0.0135**	**0.0135**	**0.0000**	**15.7289**	**15.7289**	**3.8600e-003**	**2.2000e-004**	**15.8908**

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	0.2350					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2982					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0104	4.4000e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	11.9846	11.9846	2.3000e-004	2.2000e-004	12.0558
Landscaping	0.0695	0.0264	2.2893	1.2000e-004		0.0127	0.0127		0.0127	0.0127	0.0000	3.7444	3.7444	3.6300e-003	0.0000	3.8351
Total	**1.6039**	**0.0367**	**2.2937**	**1.9000e-004**		**0.0135**	**0.0135**		**0.0135**	**0.0135**	**0.0000**	**15.7289**	**15.7289**	**3.8600e-003**	**2.2000e-004**	**15.8908**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.6610	0.0280	0.0168	33.3729
Unmitigated	28.8966	0.0281	0.0169	34.6192

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	20.0023 / 12.6101	27.1196	0.0264	0.0158	32.4884
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.808107	1.7770	1.7400e-003	1.0400e-003	2.1308
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**28.8966**	**0.0281**	**0.0168**	**34.6192**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	20.0023 / 10.0881	25.9585	0.0263	0.0158	31.3172
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.646486	1.7026	1.7300e-003	1.0400e-003	2.0558
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000

Total		**27.6610**	**0.0280**	**0.0168**	**33.3729**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	32.4603	1.9184	0.0000	80.4190
Unmitigated	32.4603	1.9184	0.0000	80.4190

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	141.22	28.6664	1.6941	0.0000	71.0198
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992

Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**32.4603**	**1.9183**	**0.0000**	**80.4190**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	141.22	28.6664	1.6941	0.0000	71.0198
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**32.4603**	**1.9183**	**0.0000**	**80.4190**

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

Avalon West Valley III - Operational

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	368.00	Space	0.00	147,200.00	0
Parking Lot	38.00	Space	0.00	15,200.00	0
Unenclosed Parking with Elevator	742.00	Space	0.00	296,800.00	0
Apartments Mid Rise	307.00	Dwelling Unit	6.80	307,000.00	878
Strip Mall	17.80	1000sqft	0.00	17,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
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 Future Rate

Land Use - assigned acreage to residential

Construction Phase - operational run only

Off-road Equipment - operational run only

Trips and VMT - operational run only

Vehicle Trips - TIA rates w/adjustments Res = 5.10,4.90,4.50 Retail = 24.05,22.81,11.08

Woodstoves - No hearth = 96 nat gas

Water And Wastewater - all WTP treatment

Construction Off-road Equipment Mitigation -

Energy Mitigation - Meet new 2020 Title 24 requirements

Water Mitigation - Outdoor water conservation strategy

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	PhaseEndDate	9/10/2021	8/30/2021
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	46.05	96.00
tblFireplaces	NumberWood	52.19	0.00
tblLandUse	LotAcreage	3.31	0.00
tblLandUse	LotAcreage	0.34	0.00
tblLandUse	LotAcreage	6.68	0.00
tblLandUse	LotAcreage	8.08	6.80
tblLandUse	LotAcreage	0.41	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	6.39	4.90
tblVehicleTrips	ST_TR	42.04	22.81
tblVehicleTrips	SU_TR	5.86	4.50
tblVehicleTrips	SU_TR	20.43	11.08
tblVehicleTrips	WD_TR	6.65	5.10
tblVehicleTrips	WD_TR	44.32	24.05
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
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	1.6034	0.0367	2.2886	1.9000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	15.7289	15.7289	3.8300e-003	2.2000e-004	15.8902
Energy	0.0145	0.1243	0.0537	7.9000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	525.4426	525.4426	0.0409	0.0105	529.6043
Mobile	0.2806	1.2070	3.1405	0.0134	1.5386	9.0100e-003	1.5477	0.4118	8.3800e-003	0.4202	0.0000	1,230.5729	1,230.5729	0.0358	0.0000	1,231.4678
Waste						0.0000	0.0000		0.0000	0.0000	32.4603	0.0000	32.4603	1.9184	0.0000	80.4190

Water						0.0000	0.0000		0.0000	0.0000	7.5433	21.3533	28.8966	0.0281	0.0169	34.6192
Total	**1.8984**	**1.3679**	**5.4827**	**0.0144**	**1.5386**	**0.0326**	**1.5712**	**0.4118**	**0.0319**	**0.4437**	**40.0036**	**1,793.0977**	**1,833.1013**	**2.0270**	**0.0276**	**1,892.0004**

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	1.6034	0.0367	2.2886	1.9000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	15.7289	15.7289	3.8300e-003	2.2000e-004	15.8902
Energy	0.0117	0.1004	0.0433	6.4000e-004		8.1100e-003	8.1100e-003		8.1100e-003	8.1100e-003	0.0000	464.7837	464.7837	0.0371	9.3400e-003	468.4950
Mobile	0.2806	1.2070	3.1405	0.0134	1.5386	9.0100e-003	1.5477	0.4118	8.3800e-003	0.4202	0.0000	1,230.5729	1,230.5729	0.0358	0.0000	1,231.4678
Waste						0.0000	0.0000		0.0000	0.0000	32.4603	0.0000	32.4603	1.9184	0.0000	80.4190
Water						0.0000	0.0000		0.0000	0.0000	7.5433	20.1177	27.6610	0.0280	0.0168	33.3729
Total	**1.8956**	**1.3440**	**5.4723**	**0.0142**	**1.5386**	**0.0306**	**1.5693**	**0.4118**	**0.0300**	**0.4418**	**40.0036**	**1,731.2033**	**1,771.2069**	**2.0231**	**0.0264**	**1,829.6449**

	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	**0.15**	**1.75**	**0.19**	**1.05**	**0.00**	**5.93**	**0.12**	**0.00**	**6.04**	**0.43**	**0.00**	**3.45**	**3.38**	**0.19**	**4.42**	**3.30**

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	0.2806	1.2070	3.1405	0.0134	1.5386	9.0100e-003	1.5477	0.4118	8.3800e-003	0.4202	0.0000	1,230.5729	1,230.5729	0.0358	0.0000	1,231.4678
Unmitigated	0.2806	1.2070	3.1405	0.0134	1.5386	9.0100e-003	1.5477	0.4118	8.3800e-003	0.4202	0.0000	1,230.5729	1,230.5729	0.0358	0.0000	1,231.4678

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,565.70	1,504.30	1381.50	3,535,118	3,535,118
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	428.09	406.02	197.22	603,625	603,625
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	1,993.79	1,910.32	1,578.72	4,138,743	4,138,743

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 with Elevator	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
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unenclosed Parking with	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	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651

Enclosed Parking with Elevator	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Parking Lot	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Strip Mall	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Unenclosed Parking with Elevator	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	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	348.6254	348.6254	0.0349	7.2100e-003	351.6464
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	381.6540	381.6540	0.0382	7.9000e-003	384.9612
NaturalGas Mitigated	0.0117	0.1004	0.0433	6.4000e-004		8.1100e-003	8.1100e-003		8.1100e-003	8.1100e-003	0.0000	116.1583	116.1583	2.2300e-003	2.1300e-003	116.8485
NaturalGas Unmitigated	0.0145	0.1243	0.0537	7.9000e-004		0.0100	0.0100		0.0100	0.0100	0.0000	143.7886	143.7886	2.7600e-003	2.6400e-003	144.6431

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	2.65231e+006	0.0143	0.1222	0.0520	7.8000e-004		9.8800e-003	9.8800e-003		9.8800e-003	9.8800e-003	0.0000	141.5374	141.5374	2.7100e-003	2.5900e-003	142.3785
Enclosed Parking with Elevator	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
Strip Mall	42186	2.3000e-004	2.0700e-003	1.7400e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2512	2.2512	4.0000e-005	4.0000e-005	2.2646
Unenclosed Parking with Elevator	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		**0.0145**	**0.1243**	**0.0538**	**7.9000e-004**		**0.0100**	**0.0100**		**0.0100**	**0.0100**	**0.0000**	**143.7886**	**143.7886**	**2.7500e-003**	**2.6300e-003**	**144.6431**

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	2.14719e+006	0.0116	0.0989	0.0421	6.3000e-004		8.0000e-003	8.0000e-003		8.0000e-003	8.0000e-003	0.0000	114.5824	114.5824	2.2000e-003	2.1000e-003	115.2633
Enclosed Parking with Elevator	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
Strip Mall	29530.2	1.6000e-004	1.4500e-003	1.2200e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5758	1.5758	3.0000e-005	3.0000e-005	1.5852
Unenclosed Parking with Elevator	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		**0.0117**	**0.1004**	**0.0433**	**6.4000e-004**		**8.1100e-003**	**8.1100e-003**		**8.1100e-003**	**8.1100e-003**	**0.0000**	**116.1583**	**116.1583**	**2.2300e-003**	**2.1300e-003**	**116.8485**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.2674e+006	166.7165	0.0167	3.4500e-003	168.1612
Enclosed Parking with Elevator	862592	113.4669	0.0114	2.3500e-003	114.4501
Parking Lot	5320	0.6998	7.0000e-005	1.0000e-005	0.7059
Strip Mall	190282	25.0300	2.5000e-003	5.2000e-004	25.2469
Unenclosed Parking with Elevator	575792	75.7407	7.5700e-003	1.5700e-003	76.3970
Total		**381.6540**	**0.0382**	**7.9000e-003**	**384.9612**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.20416e+006	158.3975	0.0158	3.2800e-003	159.7701
Enclosed Parking with Elevator	689485	90.6961	9.0700e-003	1.8800e-003	91.4820
Parking Lot	5320	0.6998	7.0000e-005	1.0000e-005	0.7059
Strip Mall	175544	23.0913	2.3100e-003	4.8000e-004	23.2914
Unenclosed Parking with Elevator	575792	75.7407	7.5700e-003	1.5700e-003	76.3970
Total		**348.6254**	**0.0349**	**7.2200e-003**	**351.6464**

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	1.6034	0.0367	2.2886	1.9000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	15.7289	15.7289	3.8300e-003	2.2000e-004	15.8902
Unmitigated	1.6034	0.0367	2.2886	1.9000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	15.7289	15.7289	3.8300e-003	2.2000e-004	15.8902

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	0.2350					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2982					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0104	4.4000e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	11.9846	11.9846	2.3000e-004	2.2000e-004	12.0558
Landscaping	0.0690	0.0263	2.2841	1.2000e-004		0.0127	0.0127		0.0127	0.0127	0.0000	3.7444	3.7444	3.6000e-003	0.0000	3.8344
Total	**1.6034**	**0.0367**	**2.2885**	**1.9000e-004**		**0.0135**	**0.0135**		**0.0135**	**0.0135**	**0.0000**	**15.7289**	**15.7289**	**3.8300e-003**	**2.2000e-004**	**15.8902**

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	0.2350					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2982					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2100e-003	0.0104	4.4000e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	11.9846	11.9846	2.3000e-004	2.2000e-004	12.0558
Landscaping	0.0690	0.0263	2.2841	1.2000e-004		0.0127	0.0127		0.0127	0.0127	0.0000	3.7444	3.7444	3.6000e-003	0.0000	3.8344
Total	**1.6034**	**0.0367**	**2.2885**	**1.9000e-004**		**0.0135**	**0.0135**		**0.0135**	**0.0135**	**0.0000**	**15.7289**	**15.7289**	**3.8300e-003**	**2.2000e-004**	**15.8902**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.6610	0.0280	0.0168	33.3729
Unmitigated	28.8966	0.0281	0.0169	34.6192

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	20.0023 / 12.6101	27.1196	0.0264	0.0158	32.4884
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.808107	1.7770	1.7400e-003	1.0400e-003	2.1308
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**28.8966**	**0.0281**	**0.0168**	**34.6192**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	20.0023 / 10.0881	25.9585	0.0263	0.0158	31.3172
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	1.31849 / 0.646486	1.7026	1.7300e-003	1.0400e-003	2.0558

Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**27.6610**	**0.0280**	**0.0168**	**33.3729**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	32.4603	1.9184	0.0000	80.4190
Unmitigated	32.4603	1.9184	0.0000	80.4190

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	141.22	28.6664	1.6941	0.0000	71.0198
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**32.4603**	**1.9183**	**0.0000**	**80.4190**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	141.22	28.6664	1.6941	0.0000	71.0198
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	18.69	3.7939	0.2242	0.0000	9.3992
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**32.4603**	**1.9183**	**0.0000**	**80.4190**

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

Avalon West Valley III - Avalon Building - Santa Clara County, Annual

Avalon West Valley III - Avalon Building

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	399.00	Space	2.00	159,600.00	0
Parking Lot	38.00	Space	0.00	15,200.00	0
Apartments Mid Rise	252.00	Dwelling Unit	3.00	245,000.00	721
Strip Mall	17.80	1000sqft	0.00	17,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	380	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SVP Future Rate

Land Use - Double acreage for parking garage

Construction Phase - Based on model defaults

Trips and VMT -

Demolition - Estiamted from Google Earth assuming two level buildings

Grading - Estimated export cy based on parking area size, two levels of excavation and 20% swell

Construction Off-road Equipment Mitigation - Tier 4 and BMPs

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblGrading	MaterialExported	0.00	50,000.00

tblGrading	MaterialImported	0.00	5,000.00
tblLandUse	LandUseSquareFeet	252,000.00	245,000.00
tblLandUse	LotAcreage	3.59	2.00
tblLandUse	LotAcreage	0.34	0.00
tblLandUse	LotAcreage	6.63	3.00
tblLandUse	LotAcreage	0.41	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	380

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1632	2.1989	1.2439	5.2800e-003	0.2738	0.0565	0.3303	0.0853	0.0528	0.1381	0.0000	493.9719	493.9719	0.0474	0.0000	495.1562
2022	2.0955	2.0037	2.1818	5.5500e-003	0.2174	0.0780	0.2954	0.0586	0.0733	0.1319	0.0000	498.3513	498.3513	0.0626	0.0000	499.9164
Maximum	**2.0955**	**2.1989**	**2.1818**	**5.5500e-003**	**0.2738**	**0.0780**	**0.3303**	**0.0853**	**0.0733**	**0.1381**	**0.0000**	**498.3513**	**498.3513**	**0.0626**	**0.0000**	**499.9164**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0833	1.7058	1.3290	5.2800e-003	0.1977	7.2600e-003	0.2049	0.0477	7.0800e-003	0.0548	0.0000	493.9717	493.9717	0.0474	0.0000	495.1561

2022	1.9858	1.5839	2.3371	5.5500e-003	0.2174	9.8300e-003	0.2273	0.0586	9.7000e-003	0.0683	0.0000	498.3510	498.3510	0.0626	0.0000	499.9161
Maximum	**1.9858**	**1.7058**	**2.3371**	**5.5500e-003**	**0.2174**	**9.8300e-003**	**0.2273**	**0.0586**	**9.7000e-003**	**0.0683**	**0.0000**	**498.3510**	**498.3510**	**0.0626**	**0.0000**	**499.9161**

	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	**8.39**	**21.72**	**-7.02**	**0.00**	**15.50**	**87.29**	**30.93**	**26.10**	**86.69**	**54.39**	**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	**8-30-2021**	**11-29-2021**	2.0959	1.6253
2	**11-30-2021**	**2-27-2022**	0.8193	0.6075
3	**2-28-2022**	**5-29-2022**	0.7954	0.6044
4	**5-30-2022**	**8-29-2022**	0.8018	0.6087
5	**8-30-2022**	**9-30-2022**	0.4286	0.4064
		Highest	2.0959	1.6253

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	8/30/2021	9/24/2021	5	20	
2	Site Preparation	Site Preparation	9/25/2021	10/1/2021	5	5	
3	Grading	Grading	10/2/2021	10/13/2021	5	8	
4	Building Construction	Building Construction	10/14/2021	8/31/2022	5	230	
5	Paving	Paving	9/1/2022	9/26/2022	5	18	
6	Architectural Coating	Architectural Coating	9/27/2022	10/20/2022	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 2

Residential Indoor: 496,125; Residential Outdoor: 165,375; Non-Residential Indoor: 26,700; Non-Residential Outdoor: 8,900; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	591.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	6,875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	261.00	59.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	52.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0640	0.0000	0.0640	9.6900e-003	0.0000	9.6900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**0.0640**	**0.0155**	**0.0795**	**9.6900e-003**	**0.0144**	**0.0241**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

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	2.3200e-003	0.0790	0.0172	2.3000e-004	5.0100e-003	2.5000e-004	5.2600e-003	1.3800e-003	2.4000e-004	1.6100e-003	0.0000	22.2521	22.2521	1.0100e-003	0.0000	22.2774

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	4.6000e-004	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**2.7800e-003**	**0.0794**	**0.0207**	**2.4000e-004**	**6.2000e-003**	**2.6000e-004**	**6.4600e-003**	**1.7000e-003**	**2.5000e-004**	**1.9300e-003**	**0.0000**	**23.2369**	**23.2369**	**1.0300e-003**	**0.0000**	**23.2627**

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					0.0288	0.0000	0.0288	2.1800e-003	0.0000	2.1800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8400e-003	0.1356	0.2467	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**5.8400e-003**	**0.1356**	**0.2467**	**3.9000e-004**	**0.0288**	**6.2000e-004**	**0.0294**	**2.1800e-003**	**6.2000e-004**	**2.8000e-003**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

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	2.3200e-003	0.0790	0.0172	2.3000e-004	5.0100e-003	2.5000e-004	5.2600e-003	1.3800e-003	2.4000e-004	1.6100e-003	0.0000	22.2521	22.2521	1.0100e-003	0.0000	22.2774
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	4.6000e-004	3.2000e-004	3.4300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9848	0.9848	2.0000e-005	0.0000	0.9854
Total	**2.7800e-003**	**0.0794**	**0.0207**	**2.4000e-004**	**6.2000e-003**	**2.6000e-004**	**6.4600e-003**	**1.7000e-003**	**2.5000e-004**	**1.9300e-003**	**0.0000**	**23.2369**	**23.2369**	**1.0300e-003**	**0.0000**	**23.2627**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	**9.7200e-003**	**0.1012**	**0.0529**	**1.0000e-004**	**0.0452**	**5.1100e-003**	**0.0503**	**0.0248**	**4.7000e-003**	**0.0295**	**0.0000**	**8.3589**	**8.3589**	**2.7000e-003**	**0.0000**	**8.4265**

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	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2954	0.2954	1.0000e-005	0.0000	0.2956
Total	**1.4000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2954**	**0.2954**	**1.0000e-005**	**0.0000**	**0.2956**

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					0.0203	0.0000	0.0203	5.5900e-003	0.0000	5.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0304	0.0574	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	**1.7400e-003**	**0.0304**	**0.0574**	**1.0000e-004**	**0.0203**	**1.6000e-004**	**0.0205**	**5.5900e-003**	**1.6000e-004**	**5.7500e-003**	**0.0000**	**8.3589**	**8.3589**	**2.7000e-003**	**0.0000**	**8.4265**

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	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2954	0.2954	1.0000e-005	0.0000	0.2956
Total	**1.4000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2954**	**0.2954**	**1.0000e-005**	**0.0000**	**0.2956**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0293	0.0000	0.0293	0.0139	0.0000	0.0139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	9.1600e-003	0.0990	0.0634	1.2000e-004		4.6400e-003	4.6400e-003		4.2700e-003	4.2700e-003	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**9.1600e-003**	**0.0990**	**0.0634**	**1.2000e-004**	**0.0293**	**4.6400e-003**	**0.0340**	**0.0139**	**4.2700e-003**	**0.0182**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

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	0.0270	0.9193	0.2003	2.6700e-003	0.0583	2.8700e-003	0.0612	0.0160	2.7500e-003	0.0188	0.0000	258.8551	258.8551	0.0118	0.0000	259.1487
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	1.8000e-004	1.3000e-004	1.3700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3939	0.3939	1.0000e-005	0.0000	0.3942
Total	**0.0271**	**0.9194**	**0.2017**	**2.6700e-003**	**0.0588**	**2.8700e-003**	**0.0616**	**0.0162**	**2.7500e-003**	**0.0189**	**0.0000**	**259.2490**	**259.2490**	**0.0118**	**0.0000**	**259.5429**

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					0.0132	0.0000	0.0132	3.1400e-003	0.0000	3.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0800e-003	0.0413	0.0760	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**2.0800e-003**	**0.0413**	**0.0760**	**1.2000e-004**	**0.0132**	**1.9000e-004**	**0.0134**	**3.1400e-003**	**1.9000e-004**	**3.3300e-003**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

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	0.0270	0.9193	0.2003	2.6700e-003	0.0583	2.8700e-003	0.0612	0.0160	2.7500e-003	0.0188	0.0000	258.8551	258.8551	0.0118	0.0000	259.1487
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	1.8000e-004	1.3000e-004	1.3700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3939	0.3939	1.0000e-005	0.0000	0.3942
Total	**0.0271**	**0.9194**	**0.2017**	**2.6700e-003**	**0.0588**	**2.8700e-003**	**0.0616**	**0.0162**	**2.7500e-003**	**0.0189**	**0.0000**	**259.2490**	**259.2490**	**0.0118**	**0.0000**	**259.5429**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0542	0.4968	0.4724	7.7000e-004		0.0273	0.0273		0.0257	0.0257	0.0000	66.0166	66.0166	0.0159	0.0000	66.4148
Total	**0.0542**	**0.4968**	**0.4724**	**7.7000e-004**		**0.0273**	**0.0273**		**0.0257**	**0.0257**	**0.0000**	**66.0166**	**66.0166**	**0.0159**	**0.0000**	**66.4148**

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	5.4800e-003	0.1728	0.0460	4.5000e-004	0.0111	3.8000e-004	0.0115	3.2000e-003	3.7000e-004	3.5600e-003	0.0000	43.5558	43.5558	1.9000e-003	0.0000	43.6033
Worker	0.0229	0.0159	0.1702	5.4000e-004	0.0590	3.7000e-004	0.0594	0.0157	3.4000e-004	0.0160	0.0000	48.8369	48.8369	1.1100e-003	0.0000	48.8646
Total	**0.0284**	**0.1887**	**0.2162**	**9.9000e-004**	**0.0701**	**7.5000e-004**	**0.0708**	**0.0189**	**7.1000e-004**	**0.0196**	**0.0000**	**92.3927**	**92.3927**	**3.0100e-003**	**0.0000**	**92.4679**

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	0.0152	0.3110	0.5094	7.7000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	66.0166	66.0166	0.0159	0.0000	66.4147
Total	**0.0152**	**0.3110**	**0.5094**	**7.7000e-004**		**2.4100e-003**	**2.4100e-003**		**2.4100e-003**	**2.4100e-003**	**0.0000**	**66.0166**	**66.0166**	**0.0159**	**0.0000**	**66.4147**

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	5.4800e-003	0.1728	0.0460	4.5000e-004	0.0111	3.8000e-004	0.0115	3.2000e-003	3.7000e-004	3.5600e-003	0.0000	43.5558	43.5558	1.9000e-003	0.0000	43.6033

Worker	0.0229	0.0159	0.1702	5.4000e-004	0.0590	3.7000e-004	0.0594	0.0157	3.4000e-004	0.0160	0.0000	48.8369	48.8369	1.1100e-003	0.0000	48.8646
Total	**0.0284**	**0.1887**	**0.2162**	**9.9000e-004**	**0.0701**	**7.5000e-004**	**0.0708**	**0.0189**	**7.1000e-004**	**0.0196**	**0.0000**	**92.3927**	**92.3927**	**3.0100e-003**	**0.0000**	**92.4679**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1476	1.3508	1.4154	2.3300e-003		0.0700	0.0700		0.0658	0.0658	0.0000	200.4423	200.4423	0.0480	0.0000	201.6428
Total	**0.1476**	**1.3508**	**1.4154**	**2.3300e-003**		**0.0700**	**0.0700**		**0.0658**	**0.0658**	**0.0000**	**200.4423**	**200.4423**	**0.0480**	**0.0000**	**201.6428**

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	0.0155	0.4957	0.1315	1.3600e-003	0.0336	1.0100e-003	0.0346	9.7100e-003	9.7000e-004	0.0107	0.0000	130.9309	130.9309	5.5000e-003	0.0000	131.0685
Worker	0.0649	0.0432	0.4747	1.5800e-003	0.1791	1.1000e-003	0.1802	0.0476	1.0100e-003	0.0486	0.0000	142.8401	142.8401	3.0200e-003	0.0000	142.9157
Total	**0.0804**	**0.5389**	**0.6062**	**2.9400e-003**	**0.2126**	**2.1100e-003**	**0.2148**	**0.0573**	**1.9800e-003**	**0.0593**	**0.0000**	**273.7710**	**273.7710**	**8.5200e-003**	**0.0000**	**273.9841**

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	0.0462	0.9439	1.5461	2.3300e-003		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003	0.0000	200.4421	200.4421	0.0480	0.0000	201.6426
Total	**0.0462**	**0.9439**	**1.5461**	**2.3300e-003**		**7.3200e-003**	**7.3200e-003**		**7.3200e-003**	**7.3200e-003**	**0.0000**	**200.4421**	**200.4421**	**0.0480**	**0.0000**	**201.6426**

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	0.0155	0.4957	0.1315	1.3600e-003	0.0336	1.0100e-003	0.0346	9.7100e-003	9.7000e-004	0.0107	0.0000	130.9309	130.9309	5.5000e-003	0.0000	131.0685
Worker	0.0649	0.0432	0.4747	1.5800e-003	0.1791	1.1000e-003	0.1802	0.0476	1.0100e-003	0.0486	0.0000	142.8401	142.8401	3.0200e-003	0.0000	142.9157
Total	**0.0804**	**0.5389**	**0.6062**	**2.9400e-003**	**0.2126**	**2.1100e-003**	**0.2148**	**0.0573**	**1.9800e-003**	**0.0593**	**0.0000**	**273.7710**	**273.7710**	**8.5200e-003**	**0.0000**	**273.9841**

3.6 Paving - 2022

Unmitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Off-Road	9.9300e-003	0.1001	0.1312	2.1000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	18.0248	18.0248	5.8300e-003	0.0000	18.1705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.9300e-003**	**0.1001**	**0.1312**	**2.1000e-004**		**5.1100e-003**	**5.1100e-003**		**4.7000e-003**	**4.7000e-003**	**0.0000**	**18.0248**	**18.0248**	**5.8300e-003**	**0.0000**	**18.1705**

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	3.9000e-004	2.6000e-004	2.8400e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.8541	0.8541	2.0000e-005	0.0000	0.8546
Total	**3.9000e-004**	**2.6000e-004**	**2.8400e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.8541**	**0.8541**	**2.0000e-005**	**0.0000**	**0.8546**

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	3.0100e-003	0.0904	0.1557	2.1000e-004		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	18.0248	18.0248	5.8300e-003	0.0000	18.1705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**3.0100e-003**	**0.0904**	**0.1557**	**2.1000e-004**		**3.4000e-004**	**3.4000e-004**		**3.4000e-004**	**3.4000e-004**	**0.0000**	**18.0248**	**18.0248**	**5.8300e-003**	**0.0000**	**18.1705**

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	3.9000e-004	2.6000e-004	2.8400e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.8541	0.8541	2.0000e-005	0.0000	0.8546
Total	**3.9000e-004**	**2.6000e-004**	**2.8400e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.8541**	**0.8541**	**2.0000e-005**	**0.0000**	**0.8546**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8539					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**1.8558**	**0.0127**	**0.0163**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

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	1.3500e-003	9.0000e-004	9.8400e-003	3.0000e-005	3.7100e-003	2.0000e-005	3.7300e-003	9.9000e-004	2.0000e-005	1.0100e-003	0.0000	2.9610	2.9610	6.0000e-005	0.0000	2.9626
Total	**1.3500e-003**	**9.0000e-004**	**9.8400e-003**	**3.0000e-005**	**3.7100e-003**	**2.0000e-005**	**3.7300e-003**	**9.9000e-004**	**2.0000e-005**	**1.0100e-003**	**0.0000**	**2.9610**	**2.9610**	**6.0000e-005**	**0.0000**	**2.9626**

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	1.8539					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9000e-004	9.5400e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**1.8544**	**9.5400e-003**	**0.0165**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

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	1.3500e-003	9.0000e-004	9.8400e-003	3.0000e-005	3.7100e-003	2.0000e-005	3.7300e-003	9.9000e-004	2.0000e-005	1.0100e-003	0.0000	2.9610	2.9610	6.0000e-005	0.0000	2.9626
Total	**1.3500e-003**	**9.0000e-004**	**9.8400e-003**	**3.0000e-005**	**3.7100e-003**	**2.0000e-005**	**3.7300e-003**	**9.9000e-004**	**2.0000e-005**	**1.0100e-003**	**0.0000**	**2.9610**	**2.9610**	**6.0000e-005**	**0.0000**	**2.9626**

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality

429 E. Cotati Ave
Cotati, California 94931

Tel: 707-794-0400 *Fax: 707-794-0405*
www.illingworthrodkin.com *illro@illingworthrodkin.com*

M E M O

Date: December 7, 2018

To: **Fiona Phung**
David J. Powers & Associates, Inc.
Email: Fiona Phung <FPhung@davidjpowers.com>

From: James A. Reyff
Illingworth & Rodkin, Inc.

RE: Avalon West Project, San Jose, CA

SUBJECT: Construction Air Quality Impacts Associated with Concrete Pours
Job#17-235

Construction emissions associated with the Avalon West project were computed using the CalEEMod model, as described in our report, dated July 10, 2018. Information has been provided regarding the number of concrete pours required for the project. Since CalEEMod was used and the analysis utilized model defaults, emissions from concrete trucks were assumed to be included in building construction vendor trips. For the Manzanita portion, CalEEMod predicts nearly 19,000 vendor truck trips and over 13,000 trips for the Avalon portion. In addition, the CalEEMod modeling included paving phases, where the project would have parking structures rather than parking lots.

Information regarding concrete pours was provided. We understand that in total there would be 29 concrete pours for both buildings. These pours would last about 8 hours each and include about 3 trucks continuously present over the period. Emissions for this activity were computed using the California Air Resources Board (CARB) EMFAC2014 model for heavy-duty trucks. Emissions were computed for idling and trucks traveling. During each pour, 3 trucks were assumed to be present. While some cement truck fleets in San Jose are comprised of compressed natural gas (CNG) trucks, we assumed all diesel trucks. Our calculations, attached, indicate that emission from this activity would represent about 1 percent of the mitigated construction emissions and well less than 1 percent of the unmitigated emissions. Therefore, they would not contribute measurably to the predicted health risk impacts that were identified for the project and the recommended mitigation measures would not change with these emissions added. In addition, they would not change the Again, these were likely already accounted for in the CalEEMod modeling.

Attachment

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2019
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	ROG_RUN	NOx_RUNEX	CO2_RUNEX	PM10_RUN	PM2_5_RUNEX	
Santa C	2019	HHDT	Aggregate	5	DSL	0.990	20.379	4091.472	0.053	0.050	
				use 5mph emission to compute idle (multiply by 5)							
				Travel	g/mi	0.99	20.38	4091.47	0.05	0.05	
				idle	g/hour	4.95	101.89	20457.36	0.26	0.25	

Assumptions

Daily: 3 trucks present idling, 8 hours per pour, 3 trucks arriving/leaving per hour and 1 mile travel per truck

idle =	118.76	2445.43	490976.66	6.31	6.04	
travel (3 trucks/hr, 8hrs) =	23.75	489.09	98195.33	1.26	1.21	
Total (grams/pour)	142.52	2934.51	589171.99	7.57	7.25	
Manzanita Res (5 pours)	712.58	14672.56	2945859.93	37.87	36.23	in grams
Manzanita Parking (16 pours)	2280.25	46952.20	9426751.78	121.17	115.93	in grams
	6.59	135.74	27252.45	0.35	0.34	lbs
Avalon (8 pours)	1140.12	23476.10	4713375.89	60.59	57.97	in grams
	2.51	51.71	10381.89	0.13	0.13	

include off-site travel						
Total (lbs/pour)	0.64	13.25	2660.36	0.03	0.03	
Manzanita Res (5 pours)	3.22	66.25	13301.79	0.17	0.16	in pounds
Manzanita Parking (16 pours)	10.30	212.01	42565.73	0.55	0.52	in pounds
Avalon (8 pours)	5.15	106.00	21282.86	0.27	0.26	in pounds
Total	18.66	384.27	77150.38	0.99	0.95	in pounds
Total	0.01	0.19	35.00	0.00	0.00	in tons/metric tons

Project DPM Emissions and Percentage that Concrete Pours would contribute

from CalEEMod	Unmitigated		Mitigated	
Manzanita	309	0.1%	24.6	1.4%
Avalon	259	0.1%	24	0.6%

"Although we are still in the early stages of design, we have done our best to conservatively estimate the number of concrete pours for the entire project, and where the trucks would likely be staged:

Building	Staging Location	# of Pours
Manzanita residential	Manzanita Drive	5
Manzanita garage - north half	On site (southern half of garage footprint)	8
Manzanita garage - south half	Manzanita Drive	8
Avalon	On site (dog park/driveway area)	8
Total		29

We would assume that the average length of a pour would be 8 hours, and we would have 2 to 4 trucks per hour delivering concrete.

At any given time, there would likely be 3 trucks present: 1 pump truck, 1 delivery truck connected to the pump truck, and 1 more delivery truck waiting to connect. All 3 trucks would be in roughly the same location."