

BAYWOOD HOTEL PROJECT CONSTRUCTION RISK ASSESSMENT

San José, California

June 13, 2018

Prepared for:

**Amber Sharpe
Project Manager
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126**

Prepared by:

**James A. Reyff
Casey T. Zaglin
William Popenuck**

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

I&R Project# 18-054

Introduction

The purpose of this report is to address community risk impacts associated with the proposed Baywood Hotel project in San José, California. The project proposes to demolish the existing two single-family residences and construct an 11-story hotel with 105 rooms, which would be located on the third through 11th floors. The hotel would include two underground parking levels and one above ground parking level (on the second floor) to accommodate 70 parking spaces. The issue addressed in this air quality study is localized community risk due to construction emissions from the project. This analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).¹

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 (PM₁₀), and fine particulate matter (PM_{2.5}).

Toxic Air Contaminants

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

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

Regulatory Agencies

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new

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

regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.² The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

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

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.

² Available online: <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>. Accessed: June 9, 2015.

³ BAAQMD, 2011, *op. cit.*

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. The closest sensitive receptor to the project site is the residence adjacent to the western site boundary. There are additional residences at farther distances from the site in all directions.

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 and were posted on BAAQMD's website and included in the Air District's updated CEQA Guidelines (updated May 2017). The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table 1.

Table 1. Community Risk Significance Thresholds

| Health Risks and Hazards for Single Sources | |
|--|------------------------|
| Excess Cancer Risk | >10.0 per one million |
| Hazard Index | >1.0 |
| Incremental annual PM _{2.5} | >0.3 µg/m ³ |
| Health Risks and Hazards for Combined Sources (Cumulative from all sources within 1,000 foot zone of influence) | |
| Excess Cancer Risk | >100 per one million |
| Hazard Index | >10.0 |
| Annual Average PM _{2.5} | >0.8 µg/m ³ |
| Note: PM _{2.5} = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less; | |

Project Construction Activity

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

Construction equipment and associated heavy-duty truck traffic generate diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to PM_{2.5}. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects of sensitive receptors at these nearby residences from construction emissions of DPM and PM_{2.5}.⁴ Dispersion modeling was conducted to predict the off-site concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction Period Emission Modeling

Construction activity is anticipated to include demolition, site preparation, grading, trenching, building construction, and paving. The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to predict 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. Construction equipment usage and the construction schedule were based on applicant provided information for a project of this size. The proposed project land uses were input into CalEEMod, which included 105 rooms entered as “Hotel” and 70 spaces entered as “Enclosed Parking with Elevator”. Information from the project plans was incorporated into the model, which included 2,327 sf of building demolition, 14,200 cubic yards (cy) of export for the grading phase, 100 one-way cement truck trips during building construction, and two added one-way truck trips to account for 8 tons for pavement demolition.

The earliest possible construction start date of February 2019 was used. The applicant provided schedule estimated 478 construction workdays over 21 months. *Attachment 2* includes the CalEEMod output values for construction emissions, information for schedule, equipment usage, and truck hauling.

On-Site Construction TAC Emissions

Construction period emissions were computed using CalEEMod along with projected construction activity, as described above. The CalEEMod model provided total annual PM₁₀ exhaust emissions (assumed to be DPM) for the off-road construction equipment for the project and for the exhaust emissions from on-road vehicles of 0.0957 tons (191 pounds) over the approximate 21-month construction period. The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive dust PM_{2.5} emissions were also computed and included in this analysis. The model predicts emissions of 0.0395 tons (79 pounds) of on-site fugitive PM_{2.5}.

⁴ 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} concentrations at sensitive receptors (residences) that would be present in the vicinity of the project site during construction activities. Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive PM_{2.5} dust emissions. Combustion equipment exhaust emissions were modeled as a series of point sources with a nine-foot release height (construction equipment exhaust stack height) placed at 6-meter (20-foot) intervals throughout the construction site. This resulted in 42 individual point sources being used to represent mobile equipment DPM exhaust emissions in the construction area, with DPM emissions occurring throughout the project construction site. Emissions from vehicle travel on- and off-site were distributed among the point sources throughout the site. Construction fugitive PM_{2.5} dust emissions were modeled as an area source encompassing the entire construction site with a near ground level release height of two meters. Construction emissions were modeled as occurring daily between 7 a.m. and 4 p.m., when the majority of construction activity would occur. Figure 1 shows the project site, emission source locations, and nearby sensitive receptor locations where health impacts were evaluated.

The modeling used a five-year data set (2006-2010) of hourly meteorological data from the San José Airport that was prepared for use with the AERMOD model by the BAAQMD. Annual DPM and PM_{2.5} concentrations from construction activities during the 2019-2020 period were calculated using the model. DPM and PM_{2.5} concentrations were calculated at nearby sensitive receptors. Receptor heights of 1.5 meters (5 feet) and 4.5 meters (15 feet) were used to represent the breathing heights of residents in nearby homes and apartment buildings on the first and second floor levels, respectively.

Predicted Cancer Risk and Hazards

Figure 1 shows the locations where the maximum-modeled DPM and PM_{2.5} concentrations occurred. The maximum DPM and PM_{2.5} concentrations occurred at a single-family home southeast of the project site. The maximum PM_{2.5} concentration occurred at the first-floor level (1.5 meters) and the maximum DPM concentration occurred at the second-floor level (4.5 meters). Using the maximum annual modeled DPM concentration, the maximum increased cancer risk at the location of the maximally exposed individual (MEI) was calculated using BAAQMD recommended methods. The cancer risk calculations are based on applying the BAAQMD recommended age sensitivity factors to the TAC concentrations. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. BAAQMD-recommended exposure parameters were used for the cancer risk calculations, as described in *Attachment 1*. Infant and adult exposures were assumed to occur at all residences through the entire construction period.

Results of this assessment indicate that the maximum increased residential cancer risks would be 45.3 in one million for an infant exposure and 0.8 in one million for an adult exposure. The maximum residential excess cancer risk would be above the BAAQMD significance threshold of 10.0 in one million. *Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce this impact to a level of less than significant.*

Predicted Annual PM_{2.5} Concentration

The maximum-modeled annual PM_{2.5} concentration, which is based on combined exhaust and fugitive dust emissions, was 0.41 µg/m³. This maximum annual PM_{2.5} concentration would exceed the BAAQMD significance threshold of greater than 0.3 µg/m³. *Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce this impact to a level of less than significant.*

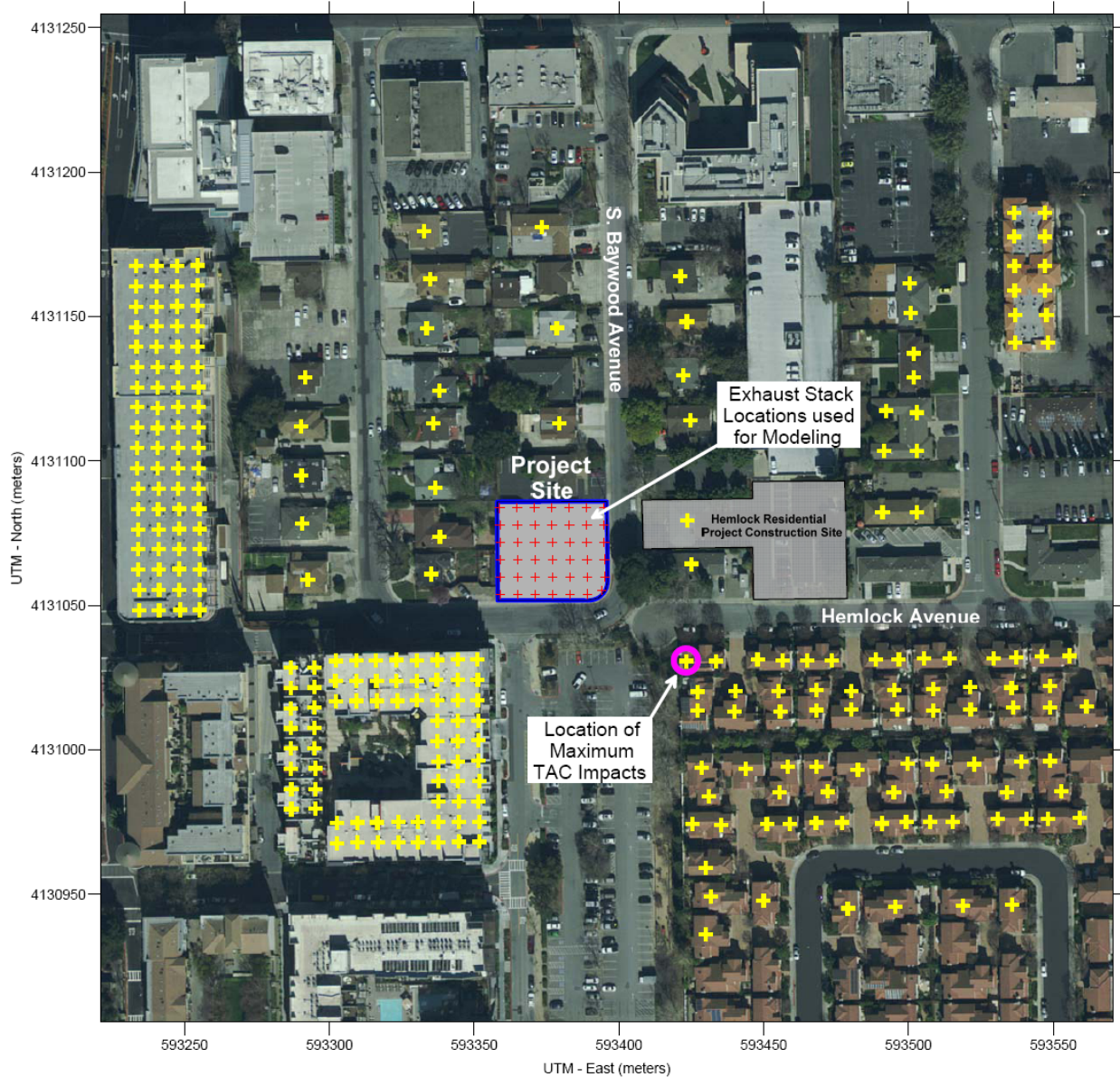
Non-Cancer Hazards

The maximum modeled annual residential DPM concentration (i.e., from construction exhaust) was 0.1794 µg/m³. The maximum computed HI based on this DPM concentration is 0.04, which is lower than the BAAQMD significance criterion of a HI greater than 1.0.

The project would have a *significant* impact with respect to community risk caused by project construction activities, since maximum cancer risk and the maximum annual PM_{2.5} concentration are above the single-source thresholds of 10.0 per million for cancer risk and 0.3 µg/m³ for annual PM_{2.5} concentration.

Attachment 2 includes the emission calculations and source information used in the modeling. *Attachment 3* includes the cancer risk calculations.

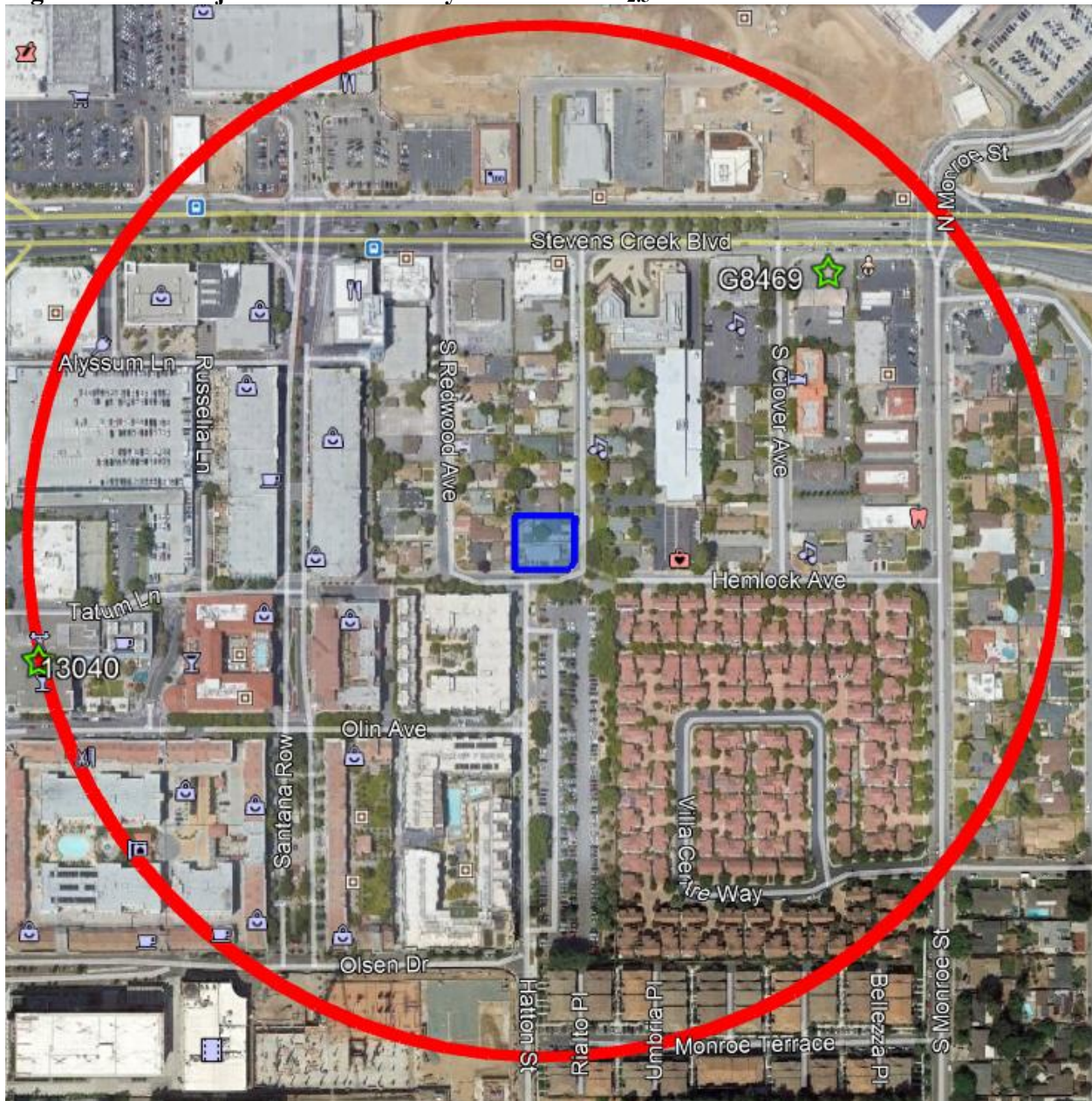
Figure 1. Project Construction Site and Locations of Off-Site Sensitive Receptors and Maximum TAC Impacts



Cumulative Community Risk Impacts on Construction MEI

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of the MEI. These sources include freeways or highways, busy surface streets and stationary sources identified by BAAQMD. As shown in Figure 2, substantial source of TAC and PM_{2.5} emissions in the area include Stevens Creek Boulevard, Plant #G8469, and Plant #13040.

Figure 2. Project Site and Nearby TAC and PM_{2.5} Sources



Local High-Volume Roadways

For local roadways, BAAQMD has provided the *Roadway Screening Analysis Calculator* to assess whether roadways with traffic volumes of over 10,000 vehicles per day may have a potentially significant effect on a proposed project. Two adjustments were made to the cancer risk predictions made by this calculator: (1) adjustment for latest vehicle emissions rates predicted using EMFAC2014 and (2) adjustment of cancer risk to reflect new Office of Environmental Health Hazard Assessment (OEHHA) guidance (see *Attachment 1*).

The calculator uses the older EMFAC2011 emission rates for the year 2014. Overall, emission rates will decrease by the time the project is constructed and occupied. The project is not likely to be occupied prior to at least 2021. In addition, a new version of the emissions factor model, EMFAC2014 was made available since that tool was developed. This version predicts lower emission rates. An adjustment factor of 0.5 was developed by comparing emission rates of total organic gases (TOG) for running exhaust and running losses developed using EMFAC2011 for year 2014 and those from EMFAC2014 for year 2018 or later. The predicted cancer risk was then adjusted using a factor of 1.3744 to account for new OEHHA guidance. This factor was provided by BAAQMD for use with their CEQA screening tools that are used to predict cancer risk.³

The average daily traffic (ADT) volume on Stevens Creek Boulevard west of S. Clover Avenue is estimated to be approximately 44,400 vehicles. This estimate was based on the peak-hour traffic volumes included in traffic data for the area for cumulative conditions. The AM and PM peak-hour volumes were averaged and then multiplied by 10 to estimate the ADT. Using the BAAQMD *Roadway Screening Analysis Calculator* for Santa Clara County for east-west directional roadways and at a distance of approximately 700 feet south of the roadway (the residential MEI), estimated cancer risk from the roadway traffic would be 2.61 per million and PM_{2.5} concentration would be 0.09 µg/m³. The chronic or acute Hazard Index (HI) for the roadway would be below 0.01.

Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using the BAAQMD's *Stationary Source Risk and Hazard Analysis Tool*. This mapping tool uses Google Earth to identify the location of 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. Plant #G8469 is the Valley Fair 76 gas station located at 2850 Stevens Creek Boulevard, approximately 750 feet northeast of the residential MEI. Plant #13040 are the FRIT Santana Row boilers and diesel generators located at 400 S. Winchester Boulevard Building 13, approximately 1,000 feet west of the residential MEI. The risk and hazard index from the gas station were adjusted for distance based on BAAQMD distance adjustment factors.⁵ When adjusted for distance, the gas station poses a screening level excess cancer risk of 0.07 per million and a HI of less than 0.01. There are no PM_{2.5} emissions from the gas station. When adjusted for distance, the boilers and diesel generators poses a screening level excess cancer risk of 0.02 per million, a HI of less than 0.01, and a PM_{2.5} concentration of less than 0.01 µg/m³.

⁵ BAAQMD provides distance adjustment multipliers for stationary sources: (1) *Distance Adjustment Multiplier Tool for Diesel Internal Combustion (IC) Engines* and (2) *Distance Adjustment Multiplier Tool for Gasoline Dispensing Facilities (GDF)*

Cumulative Projects

In addition to existing nearby TAC sources and construction of the project, there could be other projects in the area with potentially active construction sites that would occur during the proposed project construction period. One such project was identified, the Hemlock Residential Project, on the opposite side (east) of S. Baywood Avenue. The location of this project relative to the proposed project is shown in Figure 1. Emissions from construction of the Hemlock Residential Project were assumed to occur during the same time as the propose project. Construction emissions for the Hemlock Residential Project was also evaluated in this assessment.

As shown in Table 2, the project would have a *less-than-significant* impact with respect to community risk caused by project construction activities, since the cancer risk and the annual PM_{2.5} concentration are below the combined-source BAAQMD cumulative thresholds of 100.0 per million for cancer risk and 0.8 µg/m³ for PM_{2.5}. The stationary source calculations are contained in *Attachment 4*.

Table 2. Cumulative TAC Levels at Construction MEI

| Source | Cancer Risk (per million) | PM _{2.5} Concentration (µg/m ³) | Acute or Chronic Hazard (HI) |
|--|---------------------------|--|------------------------------|
| Unmitigated Project Construction | 45.3 (infant) | 0.41 | 0.04 |
| Unmitigated Hemlock Residential Project | 9.2 (infant) | 0.05 | <0.01 |
| Stevens Creek Boulevard | 2.6 | 0.09 | <0.01 |
| Plant #G8469 – Gas Station | 0.1 | NA | <0.01 |
| Plant #13040 – Boilers and Diesel Generators | <0.1 | <0.01 | <0.01 |
| Cumulative Total | <57.3 | <0.56 | <0.08 |
| <i>BAAQMD Thresholds</i> | <i>100</i> | <i>0.8</i> | <i>10.0</i> |
| <i>Exceed Threshold?</i> | No | No | No |

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:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

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

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

The project shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average 78 percent reduction in DPM exhaust emissions or greater. One feasible plan to achieve this reduction would include the following:

- All diesel-powered off-road equipment, larger than 25 horsepower, operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA particulate matter emissions standards for Tier 3 engines with CARB-certified Level 3 Diesel Particulate Filters⁶ or equivalent. The use of equipment meeting U.S. EPA Tier 4 standards for particulate matter would meet this requirement. Alternatively, the use of equipment that includes 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.

⁶ See <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>

Effectiveness of Mitigation

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 89 percent. With mitigation, the increased lifetime residential cancer risk from construction, assuming infant exposure, would be less than 4.8 in one million. This cancer risk would be below the BAAQMD threshold of 10 in one million. With mitigation, the annual PM_{2.5} concentrations from construction would be less than 0.09 µg/m³ for a residential exposure, which would be less than the BAAQMD threshold of 0.3 µg/m³. *After implementation of these recommended measures, the project would have a less-than-significant impact with respect to community risk caused by construction activities.*

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 the project construction TACs. Also included are any modeling assumptions.

Attachment 3 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 4 includes the screening community risk calculations from sources affecting the project.

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 2015.⁷ 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.⁸ 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.⁹ 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).

⁷ 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.

⁸ CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

⁹ 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:

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

Where:

- CPF = Cancer potency factor (mg/kg-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)

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

Where:

- C_{air} = concentration in air (µg/m³)
- 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 → | 3 rd Trimester | 0<2 | 2 < 9 | 2 < 16 | 16 - 30 |
| DPM Cancer Potency Factor (mg/kg-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 ($\mu\text{g}/\text{m}^3$).

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

18-054 Baywood Hotel, San Jose - Santa Clara County, Annual

**18-054 Baywood Hotel, San Jose
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 | 70.00 | Space | 0.00 | 32,959.00 | 0 |
| Hotel | 105.00 | Room | 3.50 | 90,161.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|---------------------------------|--------------------------------|---------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 58 |
| Climate Zone | 4 | | | Operational Year | 2021 |
| Utility Company | Pacific Gas & Electric Company | | | | |
| CO2 Intensity (lb/MW hr) | 290 | CH4 Intensity (lb/MW hr) | 0.029 | N2O Intensity (lb/MW hr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

- Project Characteristics - PG&E 2020 CO2 Rate = 290
- Land Use - Applicant Provided Land Uses
- Construction Phase - Applicant Provided Schedule
- Off-road Equipment - Applicant Provided Equip and Hours
- Off-road Equipment - Applicant Provided Equip and Hours
- Off-road Equipment - Applicant Provided Equip and Hours
- Off-road Equipment - Applicant Provided Equip and Hours
- Off-road Equipment - Applicant Provided Equip and Hours

Off-road Equipment - Applicant Provided Equip and Hours

Off-road Equipment - Applicant Provided Equip and Hours

Trips and VMT - 1 Mile trips, Cement Trucks 50 total round trips = 100 one-way trips, 8 tons Demo = 1 demo hauling round trip = 2 trip, 11 + 2 = 13

Demolition - Applicant Provided Demo Volume 2327sf

Grading - Applicant Provided Volumes 14,200cy export

Woodstoves -

Water And Wastewater - 100% Aerobic

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

| Table Name | Column Name | Default Value | New Value |
|-------------------------|------------------------------|---------------|-----------|
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | DPF | No Change | Level 3 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 10.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |

| | | | |
|-------------------------|----------------------------|-----------|------------|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstructionPhase | NumDays | 18.00 | 153.00 |
| tblConstructionPhase | NumDays | 230.00 | 152.00 |
| tblConstructionPhase | NumDays | 20.00 | 41.00 |
| tblConstructionPhase | NumDays | 8.00 | 43.00 |
| tblConstructionPhase | NumDays | 18.00 | 22.00 |
| tblConstructionPhase | NumDays | 5.00 | 45.00 |
| tblConstructionPhase | PhaseEndDate | 3/25/2020 | 10/31/2020 |
| tblConstructionPhase | PhaseEndDate | 2/4/2020 | 3/31/2020 |
| tblConstructionPhase | PhaseEndDate | 2/28/2019 | 3/31/2019 |
| tblConstructionPhase | PhaseEndDate | 3/19/2019 | 7/31/2019 |
| tblConstructionPhase | PhaseEndDate | 2/28/2020 | 12/1/2020 |
| tblConstructionPhase | PhaseEndDate | 3/7/2019 | 5/31/2019 |
| tblConstructionPhase | PhaseEndDate | 3/19/2019 | 8/31/2019 |

| | | | |
|----------------------|----------------------------|------------|-----------|
| tblConstructionPhase | PhaseStartDate | 2/29/2020 | 4/1/2020 |
| tblConstructionPhase | PhaseStartDate | 3/20/2019 | 9/1/2019 |
| tblConstructionPhase | PhaseStartDate | 3/8/2019 | 6/1/2019 |
| tblConstructionPhase | PhaseStartDate | 2/5/2020 | 11/1/2020 |
| tblConstructionPhase | PhaseStartDate | 3/1/2019 | 4/1/2019 |
| tblConstructionPhase | PhaseStartDate | 3/20/2019 | 8/1/2019 |
| tblGrading | AcresOfGrading | 0.00 | 4.00 |
| tblGrading | MaterialExported | 0.00 | 14,200.00 |
| tblLandUse | LandUseSquareFeet | 28,000.00 | 32,959.00 |
| tblLandUse | LandUseSquareFeet | 152,460.00 | 90,161.00 |
| tblLandUse | LotAcreage | 0.63 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 10.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |

| | | | |
|---------------------------|--------------------|--------|--------|
| tblOffRoadEquipment | UsageHours | 6.00 | 4.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 4.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 3.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 5.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 3.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 1.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 4.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 3.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 4.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 4.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripNumber | 11.00 | 13.00 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 100.00 |
| tblTripsAndVMT | VendorTripLength | 7.30 | 1.00 |
| tblTripsAndVMT | VendorTripLength | 7.30 | 1.00 |
| tblTripsAndVMT | VendorTripLength | 7.30 | 1.00 |
| tblTripsAndVMT | VendorTripLength | 7.30 | 1.00 |
| tblTripsAndVMT | VendorTripLength | 7.30 | 1.00 |
| tblTripsAndVMT | VendorTripLength | 7.30 | 1.00 |
| tblTripsAndVMT | VendorTripLength | 7.30 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |

| | | | |
|----------------|---------------------------------------|-------|--------|
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblWater | AerobicPercent | 87.46 | 100.00 |
| tblWater | AerobicPercent | 87.46 | 100.00 |
| tblWater | AnaerobicandFacultativeLagoonsPercent | 2.21 | 0.00 |
| tblWater | AnaerobicandFacultativeLagoonsPercent | 2.21 | 0.00 |
| tblWater | SepticTankPercent | 10.33 | 0.00 |
| tblWater | SepticTankPercent | 10.33 | 0.00 |

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2019 | 0.0693 | 0.8214 | 0.3802 | 8.3000e-004 | 0.0754 | 0.0334 | 0.1088 | 0.0388 | 0.0309 | 0.0697 | 0.0000 | 75.8938 | 75.8938 | 0.0186 | 0.0000 | 76.3578 |
| 2020 | 0.6158 | 1.0343 | 1.0263 | 1.7500e-003 | 2.5000e-003 | 0.0623 | 0.0648 | 6.8000e-004 | 0.0618 | 0.0625 | 0.0000 | 150.8159 | 150.8159 | 0.0149 | 0.0000 | 151.1878 |
| Maximum | 0.6158 | 1.0343 | 1.0263 | 1.7500e-003 | 0.0754 | 0.0623 | 0.1088 | 0.0388 | 0.0618 | 0.0697 | 0.0000 | 150.8159 | 150.8159 | 0.0186 | 0.0000 | 151.1878 |

Mitigated Construction

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

| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
|----------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| | 2019 | 0.0222 | 0.4601 | 0.4161 | 8.3000e-004 | 0.0359 | 2.4300e-003 | 0.0383 | 9.4800e-003 | 2.4200e-003 | 0.0119 | 0.0000 | 75.8938 | 75.8938 | 0.0186 | 0.0000 |
| 2020 | 0.5150 | 0.8089 | 1.0476 | 1.7500e-003 | 2.5000e-003 | 7.8000e-003 | 0.0103 | 6.8000e-004 | 7.8000e-003 | 8.4800e-003 | 0.0000 | 150.8157 | 150.8157 | 0.0149 | 0.0000 | 151.1877 |
| Maximum | 0.5150 | 0.8089 | 1.0476 | 1.7500e-003 | 0.0359 | 7.8000e-003 | 0.0383 | 9.4800e-003 | 7.8000e-003 | 0.0119 | 0.0000 | 150.8157 | 150.8157 | 0.0186 | 0.0000 | 151.1877 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|--------------|--------------|--------------|-------------|---------------|--------------|--------------|----------------|---------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Percent Reduction | 21.61 | 31.62 | -4.07 | 0.00 | 50.70 | 89.31 | 71.98 | 74.23 | 88.98 | 84.58 | 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 | 2-1-2019 | 4-30-2019 | 0.3023 | 0.1243 |
| 2 | 5-1-2019 | 7-31-2019 | 0.3019 | 0.1862 |
| 3 | 8-1-2019 | 10-31-2019 | 0.1568 | 0.0971 |
| 4 | 11-1-2019 | 1-31-2020 | 0.1871 | 0.1146 |
| 5 | 2-1-2020 | 4-30-2020 | 0.3192 | 0.2416 |
| 6 | 5-1-2020 | 7-31-2020 | 0.6274 | 0.5157 |
| 7 | 8-1-2020 | 9-30-2020 | 0.4160 | 0.3420 |
| | | Highest | 0.6274 | 0.5157 |

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 | 2/1/2019 | 3/31/2019 | 5 | 41 | |
| 2 | Site Preparation | Site Preparation | 4/1/2019 | 5/31/2019 | 5 | 45 | |
| 3 | Grading | Grading | 6/1/2019 | 7/31/2019 | 5 | 43 | |
| 4 | Trenching | Trenching | 8/1/2019 | 8/31/2019 | 5 | 22 | |
| 5 | Building Construction | Building Construction | 9/1/2019 | 3/31/2020 | 5 | 152 | |
| 6 | Paving | Paving | 11/1/2020 | 12/1/2020 | 5 | 22 | |

| | | | | | | |
|---|-----------------------|-----------------------|----------|------------|---|-----|
| 7 | Architectural Coating | Architectural Coating | 4/1/2020 | 10/31/2020 | 5 | 153 |
|---|-----------------------|-----------------------|----------|------------|---|-----|

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 135,242; Non-Residential Outdoor: 45,081; Striped Parking Area:

OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Demolition | Concrete/Industrial Saws | 1 | 3.00 | 81 | 0.73 |
| Demolition | Excavators | 1 | 3.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 1 | 3.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 1 | 4.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 1 | 4.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 0 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 0 | 8.00 | 158 | 0.38 |
| Grading | Graders | 0 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 0 | 8.00 | 247 | 0.40 |
| Grading | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Trenching | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 5.00 | 231 | 0.29 |
| Building Construction | Forklifts | 1 | 1.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 0 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 0 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 0 | 8.00 | 46 | 0.45 |
| Architectural Coating | Air Compressors | 10 | 4.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 1 | 4.00 | 9 | 0.56 |
| Paving | Pavers | 0 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 1 | 4.00 | 132 | 0.36 |
| Paving | Rollers | 0 | 6.00 | 80 | 0.38 |

| | | | | | | | | | | | | | | | | |
|--------------|---------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Off-Road | 0.0143 | 0.1410 | 0.0865 | 1.5000e-004 | | 7.2800e-003 | 7.2800e-003 | | 6.8400e-003 | 6.8400e-003 | 0.0000 | 13.5938 | 13.5938 | 3.2800e-003 | 0.0000 | 13.6759 |
| Total | 0.0143 | 0.1410 | 0.0865 | 1.5000e-004 | 1.1500e-003 | 7.2800e-003 | 8.4300e-003 | 1.7000e-004 | 6.8400e-003 | 7.0100e-003 | 0.0000 | 13.5938 | 13.5938 | 3.2800e-003 | 0.0000 | 13.6759 |

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 | 2.0000e-005 | 7.0000e-004 | 1.2000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0842 | 0.0842 | 1.0000e-005 | 0.0000 | 0.0845 |
| 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 | 1.0000e-004 | 1.2100e-003 | 0.0000 | 1.2000e-004 | 0.0000 | 1.2000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.1376 | 0.1376 | 1.0000e-005 | 0.0000 | 0.1377 |
| Total | 2.2000e-004 | 8.0000e-004 | 1.3300e-003 | 0.0000 | 1.3000e-004 | 0.0000 | 1.3000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.2218 | 0.2218 | 2.0000e-005 | 0.0000 | 0.2222 |

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 | | | | | 5.2000e-004 | 0.0000 | 5.2000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.5500e-003 | 0.0719 | 0.0946 | 1.5000e-004 | | 5.4000e-004 | 5.4000e-004 | | 5.4000e-004 | 5.4000e-004 | 0.0000 | 13.5938 | 13.5938 | 3.2800e-003 | 0.0000 | 13.6759 |
| Total | 3.5500e-003 | 0.0719 | 0.0946 | 1.5000e-004 | 5.2000e-004 | 5.4000e-004 | 1.0600e-003 | 4.0000e-005 | 5.4000e-004 | 5.8000e-004 | 0.0000 | 13.5938 | 13.5938 | 3.2800e-003 | 0.0000 | 13.6759 |

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 | 2.0000e-005 | 7.0000e-004 | 1.2000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0842 | 0.0842 | 1.0000e-005 | 0.0000 | 0.0845 |
| 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 | 1.0000e-004 | 1.2100e-003 | 0.0000 | 1.2000e-004 | 0.0000 | 1.2000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.1376 | 0.1376 | 1.0000e-005 | 0.0000 | 0.1377 |
| Total | 2.2000e-004 | 8.0000e-004 | 1.3300e-003 | 0.0000 | 1.3000e-004 | 0.0000 | 1.3000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.2218 | 0.2218 | 2.0000e-005 | 0.0000 | 0.2222 |

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0678 | 0.0000 | 0.0678 | 0.0372 | 0.0000 | 0.0372 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0255 | 0.2717 | 0.0964 | 1.9000e-004 | | 0.0133 | 0.0133 | | 0.0122 | 0.0122 | 0.0000 | 17.2566 | 17.2566 | 5.4600e-003 | 0.0000 | 17.3931 |
| Total | 0.0255 | 0.2717 | 0.0964 | 1.9000e-004 | 0.0678 | 0.0133 | 0.0810 | 0.0372 | 0.0122 | 0.0494 | 0.0000 | 17.2566 | 17.2566 | 5.4600e-003 | 0.0000 | 17.3931 |

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 |
| 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 | 7.0000e-005 | 8.3000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0944 | 0.0944 | 0.0000 | 0.0000 | 0.0945 |
| Total | 1.4000e-004 | 7.0000e-005 | 8.3000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0944 | 0.0944 | 0.0000 | 0.0000 | 0.0945 |

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 | | | | | 0.0305 | 0.0000 | 0.0305 | 8.3800e-003 | 0.0000 | 8.3800e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.7000e-003 | 0.0910 | 0.1019 | 1.9000e-004 | | 5.2000e-004 | 5.2000e-004 | | 5.2000e-004 | 5.2000e-004 | 0.0000 | 17.2566 | 17.2566 | 5.4600e-003 | 0.0000 | 17.3931 |
| Total | 4.7000e-003 | 0.0910 | 0.1019 | 1.9000e-004 | 0.0305 | 5.2000e-004 | 0.0310 | 8.3800e-003 | 5.2000e-004 | 8.9000e-003 | 0.0000 | 17.2566 | 17.2566 | 5.4600e-003 | 0.0000 | 17.3931 |

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 | 7.0000e-005 | 8.3000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0944 | 0.0944 | 0.0000 | 0.0000 | 0.0945 |
| Total | 1.4000e-004 | 7.0000e-005 | 8.3000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0944 | 0.0944 | 0.0000 | 0.0000 | 0.0945 |

3.4 Grading - 2019

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 2.9200e-003 | 0.0000 | 2.9200e-003 | 3.5000e-004 | 0.0000 | 3.5000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.0100e-003 | 0.0503 | 0.0495 | 7.0000e-005 | | 3.3500e-003 | 3.3500e-003 | | 3.0900e-003 | 3.0900e-003 | 0.0000 | 5.9984 | 5.9984 | 1.9000e-003 | 0.0000 | 6.0459 |
| Total | 5.0100e-003 | 0.0503 | 0.0495 | 7.0000e-005 | 2.9200e-003 | 3.3500e-003 | 6.2700e-003 | 3.5000e-004 | 3.0900e-003 | 3.4400e-003 | 0.0000 | 5.9984 | 5.9984 | 1.9000e-003 | 0.0000 | 6.0459 |

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 | 2.1500e-003 | 0.0951 | 0.0159 | 1.2000e-004 | 7.7000e-004 | 1.2000e-004 | 8.9000e-004 | 2.1000e-004 | 1.2000e-004 | 3.3000e-004 | 0.0000 | 11.4978 | 11.4978 | 1.3400e-003 | 0.0000 | 11.5314 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 8.0000e-005 | 4.0000e-005 | 4.8000e-004 | 0.0000 | 5.0000e-005 | 0.0000 | 5.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0541 | 0.0541 | 0.0000 | 0.0000 | 0.0542 |
| Total | 2.2300e-003 | 0.0951 | 0.0163 | 1.2000e-004 | 8.2000e-004 | 1.2000e-004 | 9.4000e-004 | 2.2000e-004 | 1.2000e-004 | 3.4000e-004 | 0.0000 | 11.5519 | 11.5519 | 1.3400e-003 | 0.0000 | 11.5855 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.3200e-003 | 0.0000 | 1.3200e-003 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.6300e-003 | 0.0373 | 0.0504 | 7.0000e-005 | | 3.9000e-004 | 3.9000e-004 | | 3.9000e-004 | 3.9000e-004 | 0.0000 | 5.9984 | 5.9984 | 1.9000e-003 | 0.0000 | 6.0459 |
| Total | 1.6300e-003 | 0.0373 | 0.0504 | 7.0000e-005 | 1.3200e-003 | 3.9000e-004 | 1.7100e-003 | 8.0000e-005 | 3.9000e-004 | 4.7000e-004 | 0.0000 | 5.9984 | 5.9984 | 1.9000e-003 | 0.0000 | 6.0459 |

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 | 2.1500e-003 | 0.0951 | 0.0159 | 1.2000e-004 | 7.7000e-004 | 1.2000e-004 | 8.9000e-004 | 2.1000e-004 | 1.2000e-004 | 3.3000e-004 | 0.0000 | 11.4978 | 11.4978 | 1.3400e-003 | 0.0000 | 11.5314 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 8.0000e-005 | 4.0000e-005 | 4.8000e-004 | 0.0000 | 5.0000e-005 | 0.0000 | 5.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0541 | 0.0541 | 0.0000 | 0.0000 | 0.0542 |
| Total | 2.2300e-003 | 0.0951 | 0.0163 | 1.2000e-004 | 8.2000e-004 | 1.2000e-004 | 9.4000e-004 | 2.2000e-004 | 1.2000e-004 | 3.4000e-004 | 0.0000 | 11.5519 | 11.5519 | 1.3400e-003 | 0.0000 | 11.5855 |

3.5 Trenching - 2019

Unmitigated Construction On-Site

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

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|--------------|--------------------|---------------|---------------|--------------------|--|--------------------|--------------------|--|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Off-Road | 2.5600e-003 | 0.0257 | 0.0253 | 3.0000e-005 | | 1.7200e-003 | 1.7200e-003 | | 1.5800e-003 | 1.5800e-003 | 0.0000 | 3.0690 | 3.0690 | 9.7000e-004 | 0.0000 | 3.0932 |
| Total | 2.5600e-003 | 0.0257 | 0.0253 | 3.0000e-005 | | 1.7200e-003 | 1.7200e-003 | | 1.5800e-003 | 1.5800e-003 | 0.0000 | 3.0690 | 3.0690 | 9.7000e-004 | 0.0000 | 3.0932 |

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.0000e-005 | 2.0000e-005 | 2.4000e-004 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0277 | 0.0277 | 0.0000 | 0.0000 | 0.0277 |
| Total | 4.0000e-005 | 2.0000e-005 | 2.4000e-004 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0277 | 0.0277 | 0.0000 | 0.0000 | 0.0277 |

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 | 8.4000e-004 | 0.0191 | 0.0258 | 3.0000e-005 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 3.0690 | 3.0690 | 9.7000e-004 | 0.0000 | 3.0932 |
| Total | 8.4000e-004 | 0.0191 | 0.0258 | 3.0000e-005 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 3.0690 | 3.0690 | 9.7000e-004 | 0.0000 | 3.0932 |

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.0000e-005 | 2.0000e-005 | 2.4000e-004 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0277 | 0.0277 | 0.0000 | 0.0000 | 0.0277 |
| Total | 4.0000e-005 | 2.0000e-005 | 2.4000e-004 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0277 | 0.0277 | 0.0000 | 0.0000 | 0.0277 |

3.6 Building Construction - 2019

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0146 | 0.1711 | 0.0688 | 1.7000e-004 | | 7.5200e-003 | 7.5200e-003 | | 6.9200e-003 | 6.9200e-003 | 0.0000 | 14.8348 | 14.8348 | 4.6900e-003 | 0.0000 | 14.9522 |
| Total | 0.0146 | 0.1711 | 0.0688 | 1.7000e-004 | | 7.5200e-003 | 7.5200e-003 | | 6.9200e-003 | 6.9200e-003 | 0.0000 | 14.8348 | 14.8348 | 4.6900e-003 | 0.0000 | 14.9522 |

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 | 7.0000e-005 | 3.0700e-003 | 5.1000e-004 | 0.0000 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.3708 | 0.3708 | 4.0000e-005 | 0.0000 | 0.3718 |
| Vendor | 1.9000e-003 | 0.0613 | 0.0176 | 7.0000e-005 | 8.0000e-004 | 1.5000e-004 | 9.5000e-004 | 2.3000e-004 | 1.4000e-004 | 3.8000e-004 | 0.0000 | 6.9773 | 6.9773 | 7.5000e-004 | 0.0000 | 6.9960 |
| Worker | 2.7700e-003 | 1.3100e-003 | 0.0167 | 2.0000e-005 | 1.6800e-003 | 2.0000e-005 | 1.7000e-003 | 4.5000e-004 | 2.0000e-005 | 4.7000e-004 | 0.0000 | 1.8974 | 1.8974 | 9.0000e-005 | 0.0000 | 1.8997 |
| Total | 4.7400e-003 | 0.0656 | 0.0349 | 9.0000e-005 | 2.5200e-003 | 1.7000e-004 | 2.6900e-003 | 6.9000e-004 | 1.6000e-004 | 8.6000e-004 | 0.0000 | 9.2455 | 9.2455 | 8.8000e-004 | 0.0000 | 9.2676 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 4.0600e-003 | 0.0792 | 0.0898 | 1.7000e-004 | | 4.7000e-004 | 4.7000e-004 | | 4.7000e-004 | 4.7000e-004 | 0.0000 | 14.8348 | 14.8348 | 4.6900e-003 | 0.0000 | 14.9521 |
| Total | 4.0600e-003 | 0.0792 | 0.0898 | 1.7000e-004 | | 4.7000e-004 | 4.7000e-004 | | 4.7000e-004 | 4.7000e-004 | 0.0000 | 14.8348 | 14.8348 | 4.6900e-003 | 0.0000 | 14.9521 |

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 | 7.0000e-005 | 3.0700e-003 | 5.1000e-004 | 0.0000 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.3708 | 0.3708 | 4.0000e-005 | 0.0000 | 0.3718 |
| Vendor | 1.9000e-003 | 0.0613 | 0.0176 | 7.0000e-005 | 8.0000e-004 | 1.5000e-004 | 9.5000e-004 | 2.3000e-004 | 1.4000e-004 | 3.8000e-004 | 0.0000 | 6.9773 | 6.9773 | 7.5000e-004 | 0.0000 | 6.9960 |
| Worker | 2.7700e-003 | 1.3100e-003 | 0.0167 | 2.0000e-005 | 1.6800e-003 | 2.0000e-005 | 1.7000e-003 | 4.5000e-004 | 2.0000e-005 | 4.7000e-004 | 0.0000 | 1.8974 | 1.8974 | 9.0000e-005 | 0.0000 | 1.8997 |
| Total | 4.7400e-003 | 0.0656 | 0.0349 | 9.0000e-005 | 2.5200e-003 | 1.7000e-004 | 2.6900e-003 | 6.9000e-004 | 1.6000e-004 | 8.6000e-004 | 0.0000 | 9.2455 | 9.2455 | 8.8000e-004 | 0.0000 | 9.2676 |

3.6 Building Construction - 2020

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 9.7900e-003 | 0.1148 | 0.0478 | 1.2000e-004 | | 4.9100e-003 | 4.9100e-003 | | 4.5100e-003 | 4.5100e-003 | 0.0000 | 10.8425 | 10.8425 | 3.5100e-003 | 0.0000 | 10.9302 |
| Total | 9.7900e-003 | 0.1148 | 0.0478 | 1.2000e-004 | | 4.9100e-003 | 4.9100e-003 | | 4.5100e-003 | 4.5100e-003 | 0.0000 | 10.8425 | 10.8425 | 3.5100e-003 | 0.0000 | 10.9302 |

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|----------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|--------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 5.0000e-005 | 2.2100e-003 | 3.6000e-004 | 0.0000 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.2777 | 0.2777 | 3.0000e-005 | 0.0000 | 0.2784 |
| Vendor | 1.2300e-003 | 0.0435 | 0.0121 | 5.0000e-005 | 6.0000e-004 | 7.0000e-005 | 6.7000e-004 | 1.8000e-004 | 7.0000e-005 | 2.4000e-004 | 0.0000 | 5.2181 | 5.2181 | 5.1000e-004 | 0.0000 | 5.2308 |
| Worker | 1.8700e-003 | 8.6000e-004 | 0.0111 | 2.0000e-005 | 1.2600e-003 | 2.0000e-005 | 1.2700e-003 | 3.4000e-004 | 2.0000e-005 | 3.5000e-004 | 0.0000 | 1.3743 | 1.3743 | 6.0000e-005 | 0.0000 | 1.3758 |

| | | | | | | | | | | | | | | | | |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Total | 3.1500e-003 | 0.0465 | 0.0235 | 7.0000e-005 | 1.9000e-003 | 9.0000e-005 | 1.9800e-003 | 5.3000e-004 | 9.0000e-005 | 6.0000e-004 | 0.0000 | 6.8701 | 6.8701 | 6.0000e-004 | 0.0000 | 6.8850 |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|

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 | 3.0300e-003 | 0.0592 | 0.0671 | 1.2000e-004 | | 3.5000e-004 | 3.5000e-004 | | 3.5000e-004 | 3.5000e-004 | 0.0000 | 10.8425 | 10.8425 | 3.5100e-003 | 0.0000 | 10.9301 |
| Total | 3.0300e-003 | 0.0592 | 0.0671 | 1.2000e-004 | | 3.5000e-004 | 3.5000e-004 | | 3.5000e-004 | 3.5000e-004 | 0.0000 | 10.8425 | 10.8425 | 3.5100e-003 | 0.0000 | 10.9301 |

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 5.0000e-005 | 2.2100e-003 | 3.6000e-004 | 0.0000 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.2777 | 0.2777 | 3.0000e-005 | 0.0000 | 0.2784 |
| Vendor | 1.2300e-003 | 0.0435 | 0.0121 | 5.0000e-005 | 6.0000e-004 | 7.0000e-005 | 6.7000e-004 | 1.8000e-004 | 7.0000e-005 | 2.4000e-004 | 0.0000 | 5.2181 | 5.2181 | 5.1000e-004 | 0.0000 | 5.2308 |
| Worker | 1.8700e-003 | 8.6000e-004 | 0.0111 | 2.0000e-005 | 1.2600e-003 | 2.0000e-005 | 1.2700e-003 | 3.4000e-004 | 2.0000e-005 | 3.5000e-004 | 0.0000 | 1.3743 | 1.3743 | 6.0000e-005 | 0.0000 | 1.3758 |
| Total | 3.1500e-003 | 0.0465 | 0.0235 | 7.0000e-005 | 1.9000e-003 | 9.0000e-005 | 1.9800e-003 | 5.3000e-004 | 9.0000e-005 | 6.0000e-004 | 0.0000 | 6.8701 | 6.8701 | 6.0000e-004 | 0.0000 | 6.8850 |

3.7 Paving - 2020

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.4600e-003 | 0.0138 | 0.0156 | 3.0000e-005 | | 6.7000e-004 | 6.7000e-004 | | 6.2000e-004 | 6.2000e-004 | 0.0000 | 2.2206 | 2.2206 | 6.6000e-004 | 0.0000 | 2.2371 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 1.4600e-003 | 0.0138 | 0.0156 | 3.0000e-005 | | 6.7000e-004 | 6.7000e-004 | | 6.2000e-004 | 6.2000e-004 | 0.0000 | 2.2206 | 2.2206 | 6.6000e-004 | 0.0000 | 2.2371 |

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 | 6.0000e-005 | 3.0000e-005 | 3.6000e-004 | 0.0000 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0447 | 0.0447 | 0.0000 | 0.0000 | 0.0448 |
| Total | 6.0000e-005 | 3.0000e-005 | 3.6000e-004 | 0.0000 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0447 | 0.0447 | 0.0000 | 0.0000 | 0.0448 |

Mitigated Construction On-Site

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

| | | | | | | | | | | | | | | | | |
|--------------|--------------------|---------------|---------------|--------------------|--|--------------------|--------------------|--|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Off-Road | 5.5000e-004 | 0.0107 | 0.0171 | 3.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 2.2206 | 2.2206 | 6.6000e-004 | 0.0000 | 2.2371 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 5.5000e-004 | 0.0107 | 0.0171 | 3.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 2.2206 | 2.2206 | 6.6000e-004 | 0.0000 | 2.2371 |

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 | 6.0000e-005 | 3.0000e-005 | 3.6000e-004 | 0.0000 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0447 | 0.0447 | 0.0000 | 0.0000 | 0.0448 |
| Total | 6.0000e-005 | 3.0000e-005 | 3.6000e-004 | 0.0000 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0447 | 0.0447 | 0.0000 | 0.0000 | 0.0448 |

3.8 Architectural Coating - 2020

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.4770 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1235 | 0.8588 | 0.9340 | 1.5200e-003 | | 0.0566 | 0.0566 | | 0.0566 | 0.0566 | 0.0000 | 130.2159 | 130.2159 | 0.0101 | 0.0000 | 130.4680 |
| Total | 0.6005 | 0.8588 | 0.9340 | 1.5200e-003 | | 0.0566 | 0.0566 | | 0.0566 | 0.0566 | 0.0000 | 130.2159 | 130.2159 | 0.0101 | 0.0000 | 130.4680 |

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 8.5000e-004 | 3.9000e-004 | 5.0200e-003 | 1.0000e-005 | 5.7000e-004 | 1.0000e-005 | 5.8000e-004 | 1.5000e-004 | 1.0000e-005 | 1.6000e-004 | 0.0000 | 0.6221 | 0.6221 | 3.0000e-005 | 0.0000 | 0.6228 |
| Total | 8.5000e-004 | 3.9000e-004 | 5.0200e-003 | 1.0000e-005 | 5.7000e-004 | 1.0000e-005 | 5.8000e-004 | 1.5000e-004 | 1.0000e-005 | 1.6000e-004 | 0.0000 | 0.6221 | 0.6221 | 3.0000e-005 | 0.0000 | 0.6228 |

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 | 0.4770 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0303 | 0.6921 | 0.9345 | 1.5200e-003 | | 7.2700e-003 | 7.2700e-003 | | 7.2700e-003 | 7.2700e-003 | 0.0000 | 130.2158 | 130.2158 | 0.0101 | 0.0000 | 130.4678 |
| Total | 0.5073 | 0.6921 | 0.9345 | 1.5200e-003 | | 7.2700e-003 | 7.2700e-003 | | 7.2700e-003 | 7.2700e-003 | 0.0000 | 130.2158 | 130.2158 | 0.0101 | 0.0000 | 130.4678 |

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 8.5000e-004 | 3.9000e-004 | 5.0200e-003 | 1.0000e-005 | 5.7000e-004 | 1.0000e-005 | 5.8000e-004 | 1.5000e-004 | 1.0000e-005 | 1.6000e-004 | 0.0000 | 0.6221 | 0.6221 | 3.0000e-005 | 0.0000 | 0.6228 |
| Total | 8.5000e-004 | 3.9000e-004 | 5.0200e-003 | 1.0000e-005 | 5.7000e-004 | 1.0000e-005 | 5.8000e-004 | 1.5000e-004 | 1.0000e-005 | 1.6000e-004 | 0.0000 | 0.6221 | 0.6221 | 3.0000e-005 | 0.0000 | 0.6228 |

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 | 115.7787 | 115.7787 | 0.0116 | 2.4000e-003 | 116.7820 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 115.7787 | 115.7787 | 0.0116 | 2.4000e-003 | 116.7820 |
| NaturalGas Mitigated | 0.0215 | 0.1958 | 0.1645 | 1.1800e-003 | | 0.0149 | 0.0149 | | 0.0149 | 0.0149 | 0.0000 | 213.1902 | 213.1902 | 4.0900e-003 | 3.9100e-003 | 214.4571 |
| NaturalGas Unmitigated | 0.0215 | 0.1958 | 0.1645 | 1.1800e-003 | | 0.0149 | 0.0149 | | 0.0149 | 0.0149 | 0.0000 | 213.1902 | 213.1902 | 4.0900e-003 | 3.9100e-003 | 214.4571 |

5.2 Energy by Land Use - NaturalGas

Unmitigated

| | Natural Gas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|-----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 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 |
| Hotel | 3.99503e+006 | 0.0215 | 0.1958 | 0.1645 | 1.1800e-003 | | 0.0149 | 0.0149 | | 0.0149 | 0.0149 | 0.0000 | 213.1902 | 213.1902 | 4.0900e-003 | 3.9100e-003 | 214.4571 |
| Total | | 0.0215 | 0.1958 | 0.1645 | 1.1800e-003 | | 0.0149 | 0.0149 | | 0.0149 | 0.0149 | 0.0000 | 213.1902 | 213.1902 | 4.0900e-003 | 3.9100e-003 | 214.4571 |

Mitigated

| | Natural Gas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|-----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 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 |
| Hotel | 3.99503e+006 | 0.0215 | 0.1958 | 0.1645 | 1.1800e-003 | | 0.0149 | 0.0149 | | 0.0149 | 0.0149 | 0.0000 | 213.1902 | 213.1902 | 4.0900e-003 | 3.9100e-003 | 214.4571 |
| Total | | 0.0215 | 0.1958 | 0.1645 | 1.1800e-003 | | 0.0149 | 0.0149 | | 0.0149 | 0.0149 | 0.0000 | 213.1902 | 213.1902 | 4.0900e-003 | 3.9100e-003 | 214.4571 |

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|-----------------|-----------|-------------|-------------|---------|
| Land Use | kWh/yr | MT/yr | | | |
| Enclosed Parking with Elevator | 193140 | 25.4060 | 2.5400e-003 | 5.3000e-004 | 25.6261 |

| | | | | | |
|--------------|--------|-----------------|---------------|--------------------|-----------------|
| Hotel | 687027 | 90.3727 | 9.0400e-003 | 1.8700e-003 | 91.1559 |
| Total | | 115.7787 | 0.0116 | 2.4000e-003 | 116.7820 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Land Use | kWh/yr | MT/yr | | | |
| Enclosed Parking with Elevator | 193140 | 25.4060 | 2.5400e-003 | 5.3000e-004 | 25.6261 |
| Hotel | 687027 | 90.3727 | 9.0400e-003 | 1.8700e-003 | 91.1559 |
| Total | | 115.7787 | 0.0116 | 2.4000e-003 | 116.7820 |

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 | 0.4021 | 1.0000e-005 | 1.6100e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1300e-003 | 3.1300e-003 | 1.0000e-005 | 0.0000 | 3.3300e-003 |
| Unmitigated | 0.4021 | 1.0000e-005 | 1.6100e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1300e-003 | 3.1300e-003 | 1.0000e-005 | 0.0000 | 3.3300e-003 |

6.2 Area by SubCategory

Unmitigated

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|--------------------|--------------------|--------------------|---------------|--------------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0477 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.3543 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.5000e-004 | 1.0000e-005 | 1.6100e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1300e-003 | 3.1300e-003 | 1.0000e-005 | 0.0000 | 3.3300e-003 |
| Total | 0.4021 | 1.0000e-005 | 1.6100e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1300e-003 | 3.1300e-003 | 1.0000e-005 | 0.0000 | 3.3300e-003 |

Mitigated

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|--------------------|--------------------|--------------------|---------------|--------------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0477 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.3543 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.5000e-004 | 1.0000e-005 | 1.6100e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1300e-003 | 3.1300e-003 | 1.0000e-005 | 0.0000 | 3.3300e-003 |
| Total | 0.4021 | 1.0000e-005 | 1.6100e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 3.1300e-003 | 3.1300e-003 | 1.0000e-005 | 0.0000 | 3.3300e-003 |

7.0 Water Detail

7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|-------------|-------------|--------|
| Category | MT/yr | | | |
| Mitigated | 2.9744 | 3.4500e-003 | 2.0900e-003 | 3.6838 |
| Unmitigated | 2.9744 | 3.4500e-003 | 2.0900e-003 | 3.6838 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|--------------------|---------------|--------------------|--------------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Enclosed Parking with Elevator | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hotel | 2.66351 / 0.295946 | 2.9744 | 3.4500e-003 | 2.0900e-003 | 3.6838 |
| Total | | 2.9744 | 3.4500e-003 | 2.0900e-003 | 3.6838 |

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|--|--------------------|-----------|-----|-----|------|
|--|--------------------|-----------|-----|-----|------|

| Land Use | Mgal | MT/yr | | | |
|--------------------------------|--------------------|---------------|--------------------|--------------------|---------------|
| Enclosed Parking with Elevator | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hotel | 2.66351 / 0.295946 | 2.9744 | 3.4500e-003 | 2.0900e-003 | 3.6838 |
| Total | | 2.9744 | 3.4500e-003 | 2.0900e-003 | 3.6838 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|---------|
| | MT/yr | | | |
| Mitigated | 11.6700 | 0.6897 | 0.0000 | 28.9118 |
| Unmitigated | 11.6700 | 0.6897 | 0.0000 | 28.9118 |

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|----------------|-----------|--------|--------|--------|
| Land Use | tons | MT/yr | | | |
| Enclosed Parking with Elevator | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | |
|--------------|-------|----------------|---------------|---------------|----------------|
| Hotel | 57.49 | 11.6700 | 0.6897 | 0.0000 | 28.9118 |
| Total | | 11.6700 | 0.6897 | 0.0000 | 28.9118 |

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|----------------|----------------|---------------|---------------|----------------|
| Land Use | tons | MT/yr | | | |
| Enclosed Parking with Elevator | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hotel | 57.49 | 11.6700 | 0.6897 | 0.0000 | 28.9118 |
| Total | | 11.6700 | 0.6897 | 0.0000 | 28.9118 |

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

| Equipment Type | Number |
|----------------|--------|
|----------------|--------|

11.0 Vegetation

| | | | | | | | | | | | |
|---|--|---|--------------------|--|------------------------|---------------------------|---|--|-----------|--------------------|--|
| Project Name: | | Baywood Hotel Project | | | | | | | | | |
| Project Size | | 105 hotel / Dwelling Units | | 0.28 total project acres disturbed | | | | | | | |
| | | 90,161 SF s.f. residential hotel | | s.f. retail | | | | | | | |
| | | s.f. office/commercial | | s.f. other, specify: | | | | | | | |
| | | s.f. other, specify: | | | | | | | | | |
| | | 32959 s.f. parking garage | | 70 spaces | | | | | | | |
| | | s.f. parking lot | | spaces | | | | | | | |
| Construction Hours | | 7 am to | | 5 pm | | | | | | | |
| | | | | | | | | | | | |
| Qty | Description | HP | Load Factor | Hours/day | Total Work Days | Avg. Hours per day | Comments | | | | |
| | | | | | | | | | | | |
| | Demolition | Start Date: | 2/1/19 | Total phase: | 41 | | Overall Import/Export Volumes | Typical Equipment Type & Load Factors | | | |
| | | End Date: | 3/31/2019 | | | | | OFFROAD Equipment Type | HP | Load Factor | |
| 1 | Concrete/Industrial Saws | 81 | 0.73 | 8 | 14 | 3 | Demolition Volume | Aerial Lifts | 62 | 0.31 | |
| 1 | Excavators | 162 | 0.38 | 8 | 14 | 3 | Square footage of buildings to be demolished (or total tons to be hauled) | Air Compressors | 78 | 0.48 | |
| 1 | Rubber-Tired Dozers | 255 | 0.4 | 8 | 13 | 3 | 2,327 square feet or | Bore/Drill Rigs | 205 | 0.5 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | 0 | ? Hauling volume (tons) | Cement and Mortar Mixers | 9 | 0.56 | |
| | | | | | | | | Concrete/Industrial Saws | 81 | 0.73 | |
| | Site Preparation | Start Date: | 4/1/2019 | Total phase: | 45 | | Any pavement demolished and hauled? 2 tons | Cranes | 226 | 0.29 | |
| | | End Date: | 5/31/2019 | | | | Soil Hauling Volume | Crawler Tractors | 208 | 0.43 | |
| 1 | Graders | 174 | 0.41 | 8 | 25 | 4 | Export volume = ? cubic yards? See below | Crushing/Proc. Equipment | 85 | 0.78 | |
| 1 | Rubber Tired Dozers | 255 | 0.4 | 8 | 20 | 4 | Import volume = ? cubic yards? | Dumpers/Tenders | 16 | 0.38 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | 0 | | Excavators | 162 | 0.38 | |
| | | | | | | | | Forklifts | 89 | 0.2 | |
| | Grading / Excavation | Start Date: | 6/1/2019 | Total phase: | 43 | | | Generator Sets | 84 | 0.74 | |
| | | End Date: | 7/31/2019 | | | | Soil Hauling Volume | Graders | 174 | 0.41 | |
| | Scrapers | 361 | 0.48 | | | 0 | Export volume = 14,200 cubic yards | Off-Highway Tractors | 122 | 0.44 | |
| | Excavators | 162 | 0.38 | | | 0 | Import volume = 0 cubic yards? | Off-Highway Trucks | 400 | 0.38 | |
| | Graders | 174 | 0.41 | | | 0 | | Other Construction Equipment | 171 | 0.42 | |
| | Rubber Tired Dozers | 255 | 0.4 | | | 0 | | Other General Industrial Equipment | 150 | 0.34 | |
| 1 | Tractors/Loaders/Backhoes | 97 | 0.37 | 8 | 43 | 8 | | Other Material Handling Equipment | 167 | 0.4 | |
| | Other Equipment? | | | | | | | Pavers | 125 | 0.42 | |
| | | | | | | | | Paving Equipment | 130 | 0.36 | |
| | Trenching | Start Date: | 8/1/2019 | Total phase: | 22 | | | Plate Compactors | 8 | 0.43 | |
| | | End Date: | 8/31/2019 | | | | | Pressure Washers | 13 | 0.2 | |
| 1 | Tractor/Loader/Backhoe | 97 | 0.37 | 8 | 22 | 8 | | Pumps | 84 | 0.74 | |
| | Excavators | 162 | 0.38 | | | 0 | | Rollers | 80 | 0.38 | |
| | Other Equipment? | | | | | | | Rough Terrain Forklifts | 100 | 0.4 | |
| | | | | | | | | Rubber Tired Dozers | 255 | 0.4 | |
| | Building - Exterior | Start Date: | 9/1/2019 | Total phase: | 152 | | Cement Trucks 50 Total Round-Trips | Rubber Tired Loaders | 199 | 0.36 | |
| | | End Date: | 3/31/2020 | | | | | Scrapers | 361 | 0.48 | |
| 1 | Cranes | 226 | 0.29 | 8 | 100 | 5 | Electric? (Y/N) ___ Otherwise assumed diesel | Signal Boards | 6 | 0.82 | |
| 1 | Forklifts | 89 | 0.2 | 4 | 52 | 1 | Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel | Skid Steer Loaders | 64 | 0.37 | |
| | Generator Sets | 84 | 0.74 | | | 0 | Or temporary line power? Yes | Surfacing Equipment | 253 | 0.3 | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | 0 | otherwise, assume diesel generator | Sweepers/Scrubbers | 64 | 0.46 | |
| | Welders | 46 | 0.45 | | | 0 | | Tractors/Loaders/Backhoes | 97 | 0.37 | |
| | Other Equipment? | | | | | 0 | | Trenchers | 80 | 0.5 | |
| | | | | | | | | Welders | 46 | 0.45 | |
| | Building - Interior/Architectural Coating | Start Date: | 4/1/2020 | Total phase: | 153 | | | | | | |
| | | End Date: | 10/31/2020 | | | | | | | | |
| 112 | Air Compressors | 78 | 0.48 | 4 | 163 | 4 | | | | | |
| | Aerial Lift | 62 | 0.31 | | | 0 | | | | | |
| | Other Equipment? | | | | | | | | | | |
| | Paving | Start Date: | 11/1/2020 | Total phase: | 22 | | | | | | |
| | | Start Date: | 12/1/2020 | | | | | | | | |
| 1 | Cement and Mortar Mixers | 9 | 0.56 | 8 | 11 | 4 | Asphalt? ___ cubic yards or ___ round trips? n/a | | | | |
| | Pavers | 125 | 0.42 | | | 0 | | | | | |
| 1 | Paving Equipment | 130 | 0.36 | 8 | 111 | 40 | | | | | |
| | Rollers | 80 | 0.38 | | | 0 | | | | | |
| | Tractors/Loaders/Backhoes | 97 | 0.37 | | | 0 | | | | | |
| | Other Equipment? | | | | | | | | | | |
| Equipment listed in this sheet is to provide an example of inputs | | | | Add or subtract phases and equipment, as appropriate | | | | | | | |
| It is assumed that water trucks would be used during grading | | | | Modify horsepower or load factor, as appropriate | | | | | | | |

Attachment 3: Construction Health Risk Calculations

Baywood Hotel, San Jose, CA

DPM Construction Emissions and Modeling Emission Rates - Unmitigated

| Construction Year | Activity | DPM (ton/year) | Source Type | No. Sources | DPM Emissions | | | Emissions per Point Source |
|----------------------|--------------|-------------------|----------------|----------------|---------------|---------------|---------------|----------------------------------|
| | | | | | (lb/yr) | (lb/hr) | (g/s) | (g/s) |
| 2019 | Construction | 0.0334 | Point | 42 | 66.8 | 0.02033 | 2.56E-03 | 6.10E-05 |
| 2020 | Construction | 0.0623 | Point | 42 | 124.6 | 0.03793 | 4.78E-03 | 1.14E-04 |
| Total | | 0.0957 | | | 191 | 0.0583 | 0.0073 | |

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

PM2.5 Fugitive Dust Construction Emissions for Modeling - Unmitigated

| Construction Year | Activity | Area Source | PM2.5 Emissions | | | | Modeled Area (m ²) | PM2.5 Emission Rate |
|----------------------|--------------|----------------|-----------------|-------------|---------------|---------------|--------------------------------------|---------------------------|
| | | | (ton/year) | (lb/yr) | (lb/hr) | (g/s) | | (g/s/m ²) |
| 2019 | Construction | CON_FUG | 0.0388 | 77.6 | 0.02362 | 2.98E-03 | 1,285 | 2.32E-06 |
| 2020 | Construction | CON_FUG | 0.00068 | 1.4 | 0.00041 | 5.22E-05 | 1,285 | 4.06E-08 |
| Total | | | 0.0395 | 79.0 | 0.0240 | 0.0030 | | |

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

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

| Construction Year | Activity | DPM (ton/year) | Source Type | No. Sources | DPM Emissions | | | Emissions per Point Source |
|----------------------|--------------|-------------------|----------------|----------------|---------------|---------------|---------------|----------------------------------|
| | | | | | (lb/yr) | (lb/hr) | (g/s) | (g/s) |
| 2019 | Construction | 0.00243 | Point | 42 | 4.9 | 0.00148 | 1.86E-04 | 4.44E-06 |
| 2020 | Construction | 0.00780 | Point | 42 | 15.6 | 0.00475 | 5.98E-04 | 1.42E-05 |
| Total | | 0.0102 | | | 20 | 0.0062 | 0.0008 | |

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

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

| Construction Year | Activity | Area Source | PM2.5 Emissions | | | | Modeled Area (m ²) | PM2.5 Emission Rate |
|----------------------|--------------|----------------|-----------------|-------------|---------------|---------------|--------------------------------------|---------------------------|
| | | | (ton/year) | (lb/yr) | (lb/hr) | (g/s) | | (g/s/m ²) |
| 2019 | Construction | CON_FUG | 0.00948 | 19.0 | 0.00577 | 7.27E-04 | 1,285 | 5.66E-07 |
| 2020 | Construction | CON_FUG | 0.00068 | 1.4 | 0.00041 | 5.22E-05 | 1,285 | 4.06E-08 |
| Total | | | 0.0102 | 20.3 | 0.0062 | 0.0008 | | |

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

Baywood Hotel, San Jose, CA
 Construction Health Impacts Summary

Maximum Impacts at Construction MEI Location - Unmitigated

| Emissions Year | Maximum Concentrations | | Cancer Risk (per million) | | Hazard Index (-) | Maximum Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$) |
|-------------------|---|---|------------------------------|------------|------------------------|--|
| | Exhaust PM10/DPM ($\mu\text{g}/\text{m}^3$) | Fugitive PM2.5 ($\mu\text{g}/\text{m}^3$) | Infant | Adult | | |
| | 2019 | 0.0962 | 0.2584 | 15.8 | 0.3 | 0.019 |
| 2020 | 0.1794 | 0.0045 | 29.5 | 0.5 | 0.036 | 0.18 |
| Total | - | - | 45.3 | 0.8 | | |
| Maximum | 0.1794 | 0.2584 | - | - | 0.036 | 0.41 |

Maximum Impacts at Construction MEI Location - With Mitigation

| Emissions Year | Maximum Concentrations | | Cancer Risk (per million) | | Hazard Index (-) | Maximum Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$) |
|-------------------|---|---|------------------------------|------------|------------------------|--|
| | Exhaust PM10/DPM ($\mu\text{g}/\text{m}^3$) | Fugitive PM2.5 ($\mu\text{g}/\text{m}^3$) | Infant | Adult | | |
| | 2019 | 0.0070 | 0.0630 | 1.1 | 0.0 | 0.001 |
| 2020 | 0.0225 | 0.0045 | 3.7 | 0.1 | 0.004 | 0.03 |
| Total | - | - | 4.8 | 0.1 | | |
| Maximum | 0.0225 | 0.0630 | - | - | 0.004 | 0.09 |

Maximum Impacts at Baywood Hotel Construction MEI Location - Unmitigated
 From Construction Activities for the Hemlock Residential Project

| Emissions Year | Maximum Concentrations | | Cancer Risk (per million) | | Hazard Index (-) | Maximum Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$) |
|-------------------|---|---|------------------------------|------------|------------------------|--|
| | Exhaust PM10/DPM ($\mu\text{g}/\text{m}^3$) | Fugitive PM2.5 ($\mu\text{g}/\text{m}^3$) | Infant | Adult | | |
| | 2019 | 0.0156 | 0.0319 | 2.6 | 0.0 | 0.003 |
| 2020 | 0.0405 | 0.0009 | 6.7 | 0.1 | 0.008 | 0.04 |
| Total | - | - | 9.2 | 0.2 | | |
| Maximum | 0.0405 | 0.0319 | - | - | 0.008 | 0.05 |

Maximum Impacts at Baywood Hotel Construction MEI Location - With Mitigation
 From Construction Activities for the Hemlock Residential Project

| Emissions Year | Maximum Concentrations | | Cancer Risk (per million) | | Hazard Index (-) | Maximum Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$) |
|-------------------|---|---|------------------------------|------------|------------------------|--|
| | Exhaust PM10/DPM ($\mu\text{g}/\text{m}^3$) | Fugitive PM2.5 ($\mu\text{g}/\text{m}^3$) | Infant | Adult | | |
| | 2019 | 0.0014 | 0.0081 | 0.2 | 0.0 | 0.000 |
| 2020 | 0.0051 | 0.0009 | 0.8 | 0.0 | 0.001 | 0.01 |
| Total | - | - | 1.1 | 0.0 | | |
| Maximum | 0.0051 | 0.0081 | - | - | 0.001 | 0.01 |

Baywood Hotel, San Jose, CA - Without Mitigation
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-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 (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

| Age --> Parameter | Infant/Child | | | | Adult |
|----------------------|---------------|----------|----------|----------|----------|
| | 3rd Trimester | 0 - 2 | 2 - 9 | 2 - 16 | 16 - 30 |
| 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) | Age | Infant/Child - Exposure Information | | | Infant/Child Cancer Risk (per million) | Adult - Exposure Information | | | Fugitive PM2.5 | Total PM2.5 | |
|------------------------------------|---------------------------|------------|-------------------------------------|--------|-----------------|--|------------------------------|--------|-----------------|----------------|-------------|---------------------------------|
| | | | DPM Conc (ug/m3) | | Age Sensitivity | | Modeled | | Age Sensitivity | | | Adult Cancer Risk (per million) |
| | | | Year | Annual | Factor | | Year | Annual | Factor | | | |
| 0 | 0.25 | -0.25 - 0* | - | - | 10 | - | - | - | - | - | - | |
| 1 | 1 | 0 - 1 | 2019 | 0.0805 | 10 | 13.22 | 2019 | 0.0805 | 1 | 0.23 | 0.3281 | 0.409 |
| 2 | 1 | 1 - 2 | 2020 | 0.1501 | 10 | 24.65 | 2020 | 0.1501 | 1 | 0.43 | 0.0057 | 0.156 |
| 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 | | | | | | 37.87 | | | | 0.66 | | |

* Third trimester of pregnancy

Baywood Hotel, San Jose, CA - Without Mitigation
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-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 (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

| Age --> Parameter | Infant/Child | | | | Adult |
|----------------------|---------------|----------|----------|----------|----------|
| | 3rd Trimester | 0 - 2 | 2 - 9 | 2 - 16 | 16 - 30 |
| 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) | Age | Infant/Child - Exposure Information | | | Infant/Child Cancer Risk (per million) | Adult - Exposure Information | | | Adult Cancer Risk (per million) | Fugitive PM2.5 | Total PM2.5 |
|------------------------------------|---------------------------|------------|-------------------------------------|--------|------------------------|--|------------------------------|--------|------------------------|---------------------------------|----------------|-------------|
| | | | DPM Conc (ug/m3) | | Age Sensitivity Factor | | Modeled DPM Conc (ug/m3) | | Age Sensitivity Factor | | | |
| | | | Year | Annual | Factor | | Year | Annual | Factor | | | |
| 0 | 0.25 | -0.25 - 0* | - | - | 10 | - | - | - | - | - | - | - |
| 1 | 1 | 0 - 1 | 2019 | 0.0962 | 10 | 15.80 | 2019 | 0.0962 | 1 | 0.28 | 0.2584 | 0.355 |
| 2 | 1 | 1 - 2 | 2020 | 0.1794 | 10 | 29.47 | 2020 | 0.1794 | 1 | 0.52 | 0.0045 | 0.184 |
| 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 | | | | | | 45.27 | | | | 0.79 | | |

* Third trimester of pregnancy

Baywood Hotel, San Jose, CA - With Mitigation
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-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 (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

| Age --> Parameter | Infant/Child | | | | Adult |
|----------------------|---------------|----------|----------|----------|----------|
| | 3rd Trimester | 0 - 2 | 2 - 9 | 2 - 16 | 16 - 30 |
| 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) | Age | Infant/Child - Exposure Information | | | Infant/Child Cancer Risk (per million) | Adult - Exposure Information | | | Fugitive PM2.5 | Total PM2.5 | |
|------------------------------------|---------------------------|------------|-------------------------------------|--------|-----------------|--|------------------------------|--------|-----------------|----------------|-------------|---------------------------------|
| | | | DPM Conc (ug/m3) | | Age Sensitivity | | Modeled | | Age Sensitivity | | | Adult Cancer Risk (per million) |
| | | | Year | Annual | Factor | | Year | Annual | Factor | | | |
| 0 | 0.25 | -0.25 - 0* | - | - | 10 | - | - | - | - | - | - | |
| 1 | 1 | 0 - 1 | 2019 | 0.0059 | 10 | 0.96 | 2019 | 0.0059 | 1 | 0.02 | 0.0801 | 0.086 |
| 2 | 1 | 1 - 2 | 2020 | 0.0188 | 10 | 3.09 | 2020 | 0.0188 | 1 | 0.05 | 0.0057 | 0.025 |
| 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 | | | | | | 4.05 | | | | 0.07 | | |

* Third trimester of pregnancy

Baywood Hotel, San Jose, CA - With Mitigation
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-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 (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

| Age --> Parameter | Infant/Child | | | | Adult |
|----------------------|---------------|----------|----------|----------|----------|
| | 3rd Trimester | 0 - 2 | 2 - 9 | 2 - 16 | 16 - 30 |
| 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) | Age | Infant/Child - Exposure Information | | | Infant/Child Cancer Risk (per million) | Adult - Exposure Information | | | Adult Cancer Risk (per million) | Fugitive PM2.5 | Total PM2.5 |
|------------------------------------|---------------------------|------------|-------------------------------------|--------|------------------------|--|------------------------------|--------|------------------------|---------------------------------|----------------|-------------|
| | | | DPM Conc (ug/m3) | | Age Sensitivity Factor | | Modeled DPM Conc (ug/m3) | | Age Sensitivity Factor | | | |
| | | | Year | Annual | Factor | | Year | Annual | Factor | | | |
| 0 | 0.25 | -0.25 - 0* | - | - | 10 | - | - | - | - | - | - | - |
| 1 | 1 | 0 - 1 | 2019 | 0.0070 | 10 | 1.15 | 2019 | 0.0070 | 1 | 0.02 | 0.0630 | 0.070 |
| 2 | 1 | 1 - 2 | 2020 | 0.0225 | 10 | 3.69 | 2020 | 0.0225 | 1 | 0.06 | 0.0045 | 0.027 |
| 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 | | | | | | 4.84 | | | | 0.08 | | |

* Third trimester of pregnancy

Hemlock Residential, San Jose, CA - Without Mitigation
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Baywood Hotel Construction MEI 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-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 (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

| Age --> Parameter | Infant/Child | | | | Adult |
|----------------------|---------------|----------|----------|----------|----------|
| | 3rd Trimester | 0 - 2 | 2 - 9 | 2 - 16 | 16 - 30 |
| 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) | Age | Infant/Child - Exposure Information | | | Infant/Child Cancer Risk (per million) | Adult - Exposure Information | | | Adult Cancer Risk (per million) | Fugitive PM2.5 | Total PM2.5 |
|------------------------------------|---------------------------|------------|-------------------------------------|--------|-----------------|--|------------------------------|--------|-----------------|---------------------------------|----------------|-------------|
| | | | DPM Conc (ug/m3) | | Age Sensitivity | | Modeled | | Age Sensitivity | | | |
| | | | Year | Annual | Factor | | Year | Annual | Factor | | | |
| 0 | 0.25 | -0.25 - 0* | - | - | 10 | - | - | - | - | - | - | - |
| 1 | 1 | 0 - 1 | 2019 | 0.0156 | 10 | 2.56 | 2019 | 0.0156 | 1 | 0.04 | 0.0319 | 0.048 |
| 2 | 1 | 1 - 2 | 2020 | 0.0405 | 10 | 6.65 | 2020 | 0.0405 | 1 | 0.12 | 0.0009 | 0.041 |
| 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 | | | | | | 9.21 | | | | 0.16 | | |

* Third trimester of pregnancy

Hemlock Residential, San Jose, CA - With Mitigation
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Baywood Hotel Construction MEI 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-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 (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

| Age --> Parameter | Infant/Child | | | | Adult |
|----------------------|---------------|----------|----------|----------|----------|
| | 3rd Trimester | 0 - 2 | 2 - 9 | 2 - 16 | 16 - 30 |
| 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) | Age | Infant/Child - Exposure Information | | | Infant/Child Cancer Risk (per million) | Adult - Exposure Information | | | Adult Cancer Risk (per million) | Fugitive PM2.5 | Total PM2.5 |
|------------------------------------|---------------------------|------------|-------------------------------------|--------|------------------------|--|------------------------------|--------|------------------------|---------------------------------|----------------|-------------|
| | | | DPM Conc (ug/m3) | | Age Sensitivity Factor | | Modeled DPM Conc (ug/m3) | | Age Sensitivity Factor | | | |
| | | | Year | Annual | Factor | | Year | Annual | Factor | | | |
| 0 | 0.25 | -0.25 - 0* | - | - | 10 | - | - | - | - | - | - | - |
| 1 | 1 | 0 - 1 | 2019 | 0.0014 | 10 | 0.23 | 2019 | 0.0014 | 1 | 0.00 | 0.0081 | 0.010 |
| 2 | 1 | 1 - 2 | 2020 | 0.0051 | 10 | 0.84 | 2020 | 0.0051 | 1 | 0.01 | 0.0009 | 0.006 |
| 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 | | | | | | 1.07 | | | | 0.02 | | |

* Third trimester of pregnancy

Attachment 4: Operational Community Risk

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

Roadway Direction

Side of the Roadway

Distance from Roadway feet

Annual Average Daily Traffic (ADT)

Results

Santa Clara County

EAST-WEST DIRECTIONAL ROADWAY

PM2.5 annual average

0.094 ($\mu\text{g}/\text{m}^3$)

Cancer Risk

3.79 (per million)

Stevens Creek Boulevard

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 OEHH
and EMFAC2014 for 2018

2.61

(per million)

Note that EMFAC2014 predicts DSL PM2.5 aggregate 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 vehicles 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 Cal3qhc 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 OEHH 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 conducting 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 | Baywood Hotel |
| Address | 375 S Baywood Ave |
| City | San Jose |
| County | Santa Clara |
| Type (residential, commercial, mixed use, industrial, etc.) | Hotel |
| Project Size (# of units or building square feet) | 105 rooms |
| 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** (Table B section only).
6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.
7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

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

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

Table B: Google Earth data

| Table B: Google Earth data | | | | | | | | | | | Res MEI | | | |
|---|-------------------------------|---------------------------------|-----------|--------------------------|--------------------------|--------------------------------|-------------------------|-------------------------------------|------------------------|---|--------------------------------|-------------------------------|----------------------|----------------|
| 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 | Distance Adjustment Multiplier | Adjusted Cancer Risk Estimate | Adjusted Hazard Risk | Adjusted PM2.5 |
| 750 | Valley Fair Unocal 76 #253969 | 2850 Stevens Creek Blvd | G8469 | 3.23 | 0.03798363 | na | | | | No updated screening values; consider using available screening values with distance multiplier | 0.02 | 0.07 | 0.00 | #VALUE! |
| 1000 | FRIT, Santana Row | 400 SO WINCHESTER BLVD, BLDG 13 | 13040 | 0.4 | 0 | 0.023 | | various boilers & Diesel Generators | | updated screening values with 2014 values, consider using screening values | 0.04 | 0.02 | 0.00 | 0.00 |

Footnotes:

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