

***MADRONE CARPENTERS
TRAINING CENTER
CONSTRUCTION AIR QUALITY AND
COMMUNITY RISK ASSESSMENT***

Morgan Hill, CA

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Introduction

The purpose of this report is to address construction air quality emissions and community risk impacts associated with the proposed Carpenters Training Center in Morgan Hill, California. This project would involve construction, which would be the primary source of toxic air contaminant (TAC) and fine particulate matter (PM_{2.5}) emissions that could lead to community risk impacts, or in other words, increase health risks at sensitive receptors. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).

Project Description

The project proposes to construct a 55,000 square foot carpenters training center at 18640 Madrone Parkway. The proposed training center would include workshop areas, classrooms, break rooms, offices and a lobby/receptionist area. The maximum height of the proposed building would be 32 feet above ground surface, at the top of the roof. The project would provide a surface parking lot with 196 parking spaces. The building would also include a yard area for outdoor training and material storage. An eight-foot concrete wall would be constructed around the yard area. The existing six-foot concrete wall, located between the residences to the north and the project site, would remain.

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

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

Regulatory Setting

Federal Regulations

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

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_x and particulate matter (PM₁₀ and PM_{2.5}) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_x emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.¹

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The new standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel (from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel (ULSD), is currently required for use by all vehicles in the U.S.

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

¹ USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.² In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and PM_{2.5} emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

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

Bay Area Air Quality Management District (BAAQMD)

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

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources;

² California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

The BAAQMD California Environmental Quality Act (CEQA) *Air Quality Guidelines*³ were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions.

City of Morgan Hill 2035 General Plan

Adopted July 27, 2016, the *Morgan Hill 2035 General Plan* includes goals, policies, and actions to improve air quality issues facing the City of Morgan Hill.⁴ The following goals, policies, and actions are applicable to the proposed project:

Air Quality

Goal NRE-11: Minimized exposure of people to toxic air contaminants such as ozone, carbon monoxide, lead, and particulate matter.

Policy NRE-11.3 **Health Risk Assessments.** For proposed development that emits toxic air contaminants, require project proponents to prepare health risk assessments in accordance with Bay Area Air Quality Management District procedures as part of environmental review and implement effective mitigation measures to reduce potential health risks to less-than-significant levels. Alternatively, require these projects to be located an adequate distance from residences and other sensitive receptors to avoid health risks. Consult with the Bay Area Air Quality Management District to identify stationary and mobile toxic air contaminant sources and determine the need for and requirements of a health risk assessment for proposed developments

Goal NRE-12: Minimized air pollutant emissions from demolition and construction activities

Policy NRE-12.1: **Best Practices.** Requirement that development projects implement best management practices to reduce air pollutant emissions associated with construction and operation of the project.

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

⁴ City of Morgan Hill, California (2016). "Chapter 8 Natural Resources and Environment". *City of Morgan Hill General Plan 2035*. <https://www.morgan-hill.ca.gov/DocumentCenter/View/22839/MH2035-General-Plan---December-2017?bidId=>

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. The closest sensitive receptors to the project site are residents of a single-family home north of the project site. There are additional residences at farther distances from the project site. This project would not introduce new sensitive receptors to the area.

Significance Thresholds

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

Table 1. Air Quality Significance Thresholds

| Criteria Air Pollutant | Construction Thresholds | Operational Thresholds | |
|---|--|---|--------------------------------------|
| | Average Daily Emissions (lbs./day) | Average Daily Emissions (lbs./day) | Annual Average Emissions (tons/year) |
| ROG | 54 | 54 | 10 |
| NO _x | 54 | 54 | 10 |
| PM ₁₀ | 82 (Exhaust) | 82 | 15 |
| PM _{2.5} | 54 (Exhaust) | 54 | 10 |
| CO | Not Applicable | 9.0 ppm (8-hour average) or 20.0 ppm (1-hour average) | |
| Fugitive Dust | Construction Dust Ordinance or other Best Management Practices | Not Applicable | |
| Health Risks and Hazards | Single Sources Within 1,000-foot Zone of Influence | Combined Sources (Cumulative from all sources within 1,000-foot zone of influence) | |
| Excess Cancer Risk | >10.0 per one million | >100 per one million | |
| Hazard Index | >1.0 | >10.0 | |
| Incremental annual PM _{2.5} | >0.3 µg/m ³ | >0.8 µg/m ³ | |
| Note: ROG = reactive organic gases, NO _x = nitrogen oxides, PM ₁₀ = coarse particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, PM _{2.5} = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. | | | |

Construction Period Emissions

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

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

CalEEMod Modeling

CalEEMod provided annual emissions for construction and estimates emissions for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. A construction build-out scenario, including equipment list and schedule, was based on information provided by the project applicant. The proposed project land uses were entered into CalEEMod as follows:

- 55,000 square feet (sf) entered as “Junior College (2 year)”⁵,
- 196 parking spaces and 35,124-sf entered as “Parking Lot”,
- 3,50 cubic yards (cy) of soil exported during grading,
- 85 cement truck round trips during building construction, and
- 400-cy of asphalt hauled during paving.

Construction would begin September 2019 and last nine months. There were an estimated 90 construction workdays. Average daily emissions were computed by dividing the total construction emissions by the number of construction days. Table 2 shows average daily construction emissions of ROG, NO_x, PM₁₀ exhaust, and PM_{2.5} exhaust during construction of the project. As indicated in Table 2, predicted the construction period emissions would not exceed the BAAQMD significance thresholds and *less-than-significant*.

⁵ CalEEMod does not have a land uses that specifically address a carpenter’s training center. The “Junior College” land use was chosen because it includes technical colleges, which is the most appropriate land use for the proposed project.

Table 2. Construction Period Emissions

| Scenario | ROG | NOx | PM ₁₀ Exhaust | PM _{2.5} Exhaust |
|---|---------------|---------------|--------------------------|---------------------------|
| Total construction emissions (tons) | 0.33 tons | 0.42 tons | 0.02 tons | 0.02 tons |
| Average daily emissions (pounds)¹ | 7.30 lbs./day | 9.24 lbs./day | 0.34 lbs./day | 0.31 lbs./day |
| <i>BAAQMD Thresholds (pounds per day)</i> | 54 lbs./day | 54 lbs./day | 82 lbs./day | 54 lbs./day |
| Exceed Threshold? | No | No | No | No |
| Notes: ¹ Assumes 90 workdays. | | | | |

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

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

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

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne

toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Mitigation Measure AQ-1

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

Construction Community Health Risk Impacts

Project impacts related to increased community risk can occur either by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity. The project would not introduce new sensitive receptors, nor would the project introduce a new TAC source to the area. However, temporary project construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors. A construction health risk assessment was prepared to address the impacts the project would have on surrounding sensitive receptors. Community risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual PM_{2.5} concentrations and computing the Hazard Index (HI) for non-cancer health risks. The methodology for computing community risks impacts is contained in *Attachment 1*.

Project Construction Activity

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations as seen in Table 2. Construction exhaust emissions may still pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to PM_{2.5}. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and PM_{2.5}.⁶ This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

⁶ DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

Construction Period Emissions

The CalEEMod model provided total annual PM₁₀ exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages as 0.0147 tons (30 pounds). The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive PM_{2.5} dust emissions were calculated by CalEEMod as 0.00927 tons (19 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA ISCST3 dispersion model was used to predict DPM and PM_{2.5} concentrations at existing sensitive receptors (residences) in the vicinity of the project construction area. The ISCST3 dispersion model is a BAAQMD-recommended model for use in modeling these types of emission activities for CEQA projects.⁷ The ISCST3 modeling utilized two area sources to represent the on-site construction emissions; one for DPM exhaust emissions and the other for fugitive PM_{2.5} dust emissions. To represent the construction equipment exhaust emissions, an emission release height of six meters (19.7 feet) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes and buoyancy of the exhaust plume. For modeling fugitive PM_{2.5} emissions, a near ground level release height of two meters (6.6 feet) was used for the area source. Emissions from vehicle travel around the project site were included in the modeled area sources. Construction emissions were modeled as occurring daily between 7:30 a.m. and 4:30 p.m. as per the project applicant's construction schedule.

The modeling used a five-year data set (2001 - 2005) of hourly meteorological data from San Martin Airport prepared for use with the ISCST3 model by the BAAQMD. The airport is about 5 miles southeast of the project site. Annual DPM and PM_{2.5} concentrations from construction activities in 2019 - 2020 were calculated using the model. DPM and PM_{2.5} concentrations were calculated at nearby residential locations at receptor heights of 1.5 meters (4.9 feet) to represent the breathing heights of the residents in nearby single-family homes.

The maximum-modeled annual DPM and PM_{2.5} concentrations, which includes both the DPM and fugitive PM_{2.5} concentrations, were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEIs). 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*. Third trimester, infant and adult exposures were assumed to occur at all residences through the entire construction period. *Attachment 3* includes the construction emission calculations and source information used in the modeling and the cancer risk calculations.

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

Community Risk Impacts

The maximum concentrations occurred at a single-family residence (1.5 meters) immediately north of the project site as seen in Figure 1. Results of this assessment indicated that the maximum increased residential cancer risk would exceed the BAAQMD singles-source threshold of greater than 10.0 per million. The maximum PM_{2.5} concentration and HI do not exceed their respective BAAQMD single-source thresholds.

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



Cumulative Impact on Construction MEI

Community health risk assessments typically look at all substantial sources of TACs located within 1,000 feet of project sites. These sources include highways, busy surface streets, and stationary sources identified by BAAQMD. Highway 101 has over 10,000 vehicles per day and is considered a TAC source. Traffic on other nearby streets all have average daily traffic (ADT) that is less than 10,000 vehicles per day and are not considered sources of TACs. A review of BAAQMD's stationary source Google Earth map tool identified two sources with the potential to affect the project site. Figure 2 shows the sources affecting the project site. Details of the modeling and community risk calculations are included in *Attachment 4*.

Figure 2. Project Site, 1,000 ft Influence Area and Identified Sources



Highway - U.S. Route 101

BAAQMD provides a Google Earth *Highway Screening Analysis Tool* that can be used to identify screening level impacts from State highways. The tool estimates risk and hazard impacts throughout the Bay Area and segments the highways into various links. Link 197 and Link 199 were portions of the highway that were closest to the construction MEI. The lifetime cancer risk, annual PM_{2.5} exposure and non-cancer hazard index corresponding to the distance between the Construction MEI and the highway were used. The data were based on a distance of 750 feet south from the highway. The risk and hazards from both links at this distance were then averaged. 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.

Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*. This mapping tool uses Google Earth and identified the location of one possible stationary source and its estimated risk and hazard impacts. A Stationary Source Information Form (SSIF) containing the identified sources was prepared and submitted to BAAQMD.⁸ The District noted that Comcast-Morgan Hill (i.e. Plant #15543) was demolished and they provided an emission file for the Flextronics International, USA facility (i.e. Plant #19691). The daily emission file showed that the stationary source did not have a cancer risk, PM_{2.5} concentrations, nor a HI value. Therefore, Plant #19691 was not included in the cumulative analysis.

Cumulative Health Risk Impact at Construction MEI

Table 3 reports both the project and cumulative community risk impacts at the sensitive receptor most affected by construction (i.e. the construction MEI). Without mitigation, the project would have a *significant* impact with respect to community risk caused by project construction activities, since the maximum cancer risk does exceed the BAAQMD single-source threshold of greater than 10.0 per million. However, as seen in Table 3, *Mitigation Measures AQ-1 and AQ-2 would reduce these impacts to less-than-significant*. The combined annual cancer risk, PM_{2.5} concentration, and Hazard risk values, which includes unmitigated and mitigated, would not exceed the cumulative threshold. Therefore, the project would also have a *less-than-significant* impact regarding the cumulative risk within the area.

⁸ Correspondence with Areana Flores, BAAQMD, 19 March 2019.

Table 3. Impacts from Combined Sources at Construction MEI

| Source | Maximum Cancer Risk (per million) | PM _{2.5} concentration (µg/m ³) | Hazard Index |
|--|-----------------------------------|--|-----------------|
| Project Construction | Unmitigated | 13.9 (infant) | 0.20 |
| | Mitigated | 8.5 (infant) | 0.08 |
| BAAQMD Threshold – Single Source | >10.0 | >0.3 | >1.0 |
| Significant? | <i>No</i> | <i>No</i> | <i>No</i> |
| Highway 101 (Link 197, 6 feet elevation) at 750 feet south | 29.6 | 0.13 | 0.02 |
| Combined Sources | Unmitigated | 43.5 | 0.44 |
| | Mitigated | 38.1 | 0.27 |
| BAAQMD Threshold – Cumulative Sources | >100 | >0.8 | >10.0 |
| Significant? | | | |
| | Unmitigated | <i>No</i> | <i>No</i> |
| | Mitigated | <i>No</i> | <i>No</i> |

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 onsite to construct the project would achieve a fleet-wide average 28-percent reduction in DPM exhaust emissions or greater. One feasible plan to achieve this reduction would include the following:

1. 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.
2. All portable equipment shall also include CARB-certified Level 3 Diesel Particulate Filters⁹ in addition to having Tier 3 engines. Portable equipment includes air compressors, concrete/industrial saws, and welders.
3. Equipment that meets U.S. EPA Tier 4 standards for particulate matter or use of equipment that is electrically powered or uses non-diesel fuels would meet this requirement.

Effectiveness of Mitigation Measure AQ-2

With mitigation, the computed maximum increased lifetime residential cancer risk from construction, assuming infant exposure, would be 8.5 in one million or less, the maximum annual PM_{2.5} concentration would be 0.08 µg/m³, and the Hazard Index would be 0.01. As a result, impacts would be reduced to *less-than-significant* with respect to community risk caused by construction activities.

⁹ See <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>

Supporting Documentation

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

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

Attachment 3 is the construction health risk assessment. ISCST3 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 MEI.

Attachment 1: Health Impact Evaluation 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 2015.¹⁰ 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.¹¹ This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.¹² 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 and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

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

¹⁰ 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.

¹¹ CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

¹² BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity 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) 80 th Percentile Rate | | 273 | 758 | 631 | 572 | 261 |
| Daily Breathing Rate (L/kg-day) 95 th Percentile Rate | | 361 | 1,090 | 861 | 745 | 335 |
| 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 |

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 Model Outputs

Carpenters Training Center Morgan Hill AQ - Santa Clara County, Annual

Carpenters Training Center Morgan Hill AQ
Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------|--------|----------|-------------|--------------------|------------|
| Junior College (2Yr) | 55.00 | 1000sqft | 4.90 | 55,000.00 | 0 |
| Parking Lot | 196.00 | Space | 0.00 | 35,124.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|---------------------------------|--------------------------------|---------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 58 |
| Climate Zone | 3 | | | 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

Carpenters Training Center Morgan Hill AQ - Santa Clara County, Annual

Project Characteristics - PG&E 2020 290 rate

Land Use - Carpenters Training Center Morgan Hill Land Uses

Construction Phase - Applicant construction schedule, use total work day

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Demolition - No demolition of building

Grading - 3,150-cy of soil exported during grading

Vehicle Trips - 303 trips (based on AM + PM peak trip value *10%) 303 trips/150 students = 2.02 weekday, 0.83 saturday, 0.09 sunday

Energy Use -

Water And Wastewater - 100% aerobic

Trips and VMT - 170 one way trips for building construction, estimated 96 one way hauling trips for asphalt during paving

| Table Name | Column Name | Default Value | New Value |
|----------------------|-------------------|---------------|-----------|
| tblConstructionPhase | NumDays | 18.00 | 20.00 |
| tblConstructionPhase | NumDays | 230.00 | 20.00 |
| tblConstructionPhase | NumDays | 20.00 | 5.00 |
| tblConstructionPhase | NumDays | 8.00 | 20.00 |
| tblConstructionPhase | NumDays | 18.00 | 5.00 |
| tblGrading | MaterialExported | 0.00 | 3,150.00 |
| tblLandUse | LandUseSquareFeet | 78,400.00 | 35,124.00 |
| tblLandUse | LotAcreage | 1.26 | 4.90 |
| tblLandUse | LotAcreage | 1.76 | 0.00 |

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| | | | |
|---------------------------|----------------------------|--------|--------|
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 1.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 4.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 4.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 170.00 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 96.00 |
| tblVehicleTrips | ST_TR | 11.23 | 0.83 |

Carpenters Training Center Morgan Hill AQ - Santa Clara County, Annual

| | | | |
|-----------------|---------------------------------------|-------|--------|
| tblVehicleTrips | SU_TR | 1.21 | 0.09 |
| tblVehicleTrips | WD_TR | 27.49 | 2.02 |
| 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

Carpenters Training Center Morgan Hill AQ - Santa Clara County, Annual

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|-----------|--|--|
| 1 | 9-9-2019 | 12-8-2019 | 0.2514 | 0.2514 |
| 2 | 12-9-2019 | 3-8-2020 | 0.1097 | 0.1097 |
| 3 | 3-9-2020 | 6-8-2020 | 0.1913 | 0.1913 |
| 4 | 6-9-2020 | 9-8-2020 | 0.1315 | 0.1315 |
| | | Highest | 0.2514 | 0.2514 |

2.2 Overall Operational

Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |
| Energy | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 149.0729 | 149.0729 | 9.6700e-003 | 2.9300e-003 | 150.1881 |
| Mobile | 0.0224 | 0.0955 | 0.2710 | 9.1000e-004 | 0.0818 | 7.8000e-004 | 0.0826 | 0.0219 | 7.3000e-004 | 0.0226 | 0.0000 | 83.1219 | 83.1219 | 2.8500e-003 | 0.0000 | 83.1931 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 14.5139 | 0.0000 | 14.5139 | 0.8577 | 0.0000 | 35.9575 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.9545 | 3.8628 | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |
| Total | 0.2756 | 0.1550 | 0.3234 | 1.2700e-003 | 0.0818 | 5.3200e-003 | 0.0871 | 0.0219 | 5.2700e-003 | 0.0272 | 15.4683 | 236.0620 | 251.5303 | 0.8739 | 5.0900e-003 | 274.8948 |

Carpenters Training Center Morgan Hill AQ - Santa Clara County, Annual

2.2 Overall Operational

Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |
| Energy | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 149.0729 | 149.0729 | 9.6700e-003 | 2.9300e-003 | 150.1881 |
| Mobile | 0.0224 | 0.0955 | 0.2710 | 9.1000e-004 | 0.0818 | 7.8000e-004 | 0.0826 | 0.0219 | 7.3000e-004 | 0.0226 | 0.0000 | 83.1219 | 83.1219 | 2.8500e-003 | 0.0000 | 83.1931 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 14.5139 | 0.0000 | 14.5139 | 0.8577 | 0.0000 | 35.9575 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.9545 | 3.8628 | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |
| Total | 0.2756 | 0.1550 | 0.3234 | 1.2700e-003 | 0.0818 | 5.3200e-003 | 0.0871 | 0.0219 | 5.2700e-003 | 0.0272 | 15.4683 | 236.0620 | 251.5303 | 0.8739 | 5.0900e-003 | 274.8948 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

3.0 Construction Detail

Construction Phase

Carpenters Training Center Morgan Hill AQ - Santa Clara County, Annual

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|-----------------------|-----------------------|------------|------------|---------------|----------|-------------------|
| 1 | Demolition | Demolition | 9/9/2019 | 9/13/2019 | 5 | 5 | |
| 2 | Site Preparation | Site Preparation | 9/16/2019 | 9/20/2019 | 5 | 5 | |
| 3 | Grading | Grading | 9/23/2019 | 10/18/2019 | 5 | 20 | |
| 4 | Trenching | Trenching | 9/23/2019 | 10/11/2019 | 5 | 15 | |
| 5 | Building Construction | Building Construction | 12/23/2019 | 1/17/2020 | 5 | 20 | |
| 6 | Paving | Paving | 3/1/2020 | 3/6/2020 | 5 | 5 | |
| 7 | Architectural Coating | Architectural Coating | 5/24/2020 | 6/19/2020 | 5 | 20 | |

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 82,500; Non-Residential Outdoor: 27,500; Striped Parking Area: 2,107 (Architectural Coating – sqft)

OffRoad Equipment

Carpenters Training Center Morgan Hill AQ - Santa Clara County, Annual

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 1 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 0 | 0.00 | 247 | 0.40 |
| Demolition | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Site Preparation | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 1 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 0 | 0.00 | 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 | 4.00 | 231 | 0.29 |
| Building Construction | Forklifts | 1 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 0 | 0.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 0 | 0.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 4.00 | 46 | 0.45 |
| Paving | Cement and Mortar Mixers | 0 | 0.00 | 9 | 0.56 |
| Paving | Pavers | 0 | 0.00 | 130 | 0.42 |
| Paving | Paving Equipment | 1 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 1 | 8.00 | 80 | 0.38 |
| Paving | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Architectural Coating | Aerial Lifts | 1 | 8.00 | 63 | 0.31 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

Trips and VMT

Carpenters Training Center Morgan Hill AQ - Santa Clara County, Annual

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|-----------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Demolition | 3 | 8.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 3 | 8.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 3 | 8.00 | 0.00 | 394.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Trenching | 1 | 3.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 3 | 38.00 | 15.00 | 170.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 3 | 8.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 2 | 8.00 | 0.00 | 96.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 2.3900e-003 | 0.0215 | 0.0232 | 4.0000e-005 | | 1.2900e-003 | 1.2900e-003 | | 1.2300e-003 | 1.2300e-003 | 0.0000 | 3.2009 | 3.2009 | 6.8000e-004 | 0.0000 | 3.2179 |
| Total | 2.3900e-003 | 0.0215 | 0.0232 | 4.0000e-005 | | 1.2900e-003 | 1.2900e-003 | | 1.2300e-003 | 1.2300e-003 | 0.0000 | 3.2009 | 3.2009 | 6.8000e-004 | 0.0000 | 3.2179 |

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3.2 Demolition - 2019

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 | 7.0000e-005 | 5.0000e-005 | 5.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1404 | 0.1404 | 0.0000 | 0.0000 | 0.1405 |
| Total | 7.0000e-005 | 5.0000e-005 | 5.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1404 | 0.1404 | 0.0000 | 0.0000 | 0.1405 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 2.3900e-003 | 0.0215 | 0.0232 | 4.0000e-005 | | 1.2900e-003 | 1.2900e-003 | | 1.2300e-003 | 1.2300e-003 | 0.0000 | 3.2009 | 3.2009 | 6.8000e-004 | 0.0000 | 3.2179 |
| Total | 2.3900e-003 | 0.0215 | 0.0232 | 4.0000e-005 | | 1.2900e-003 | 1.2900e-003 | | 1.2300e-003 | 1.2300e-003 | 0.0000 | 3.2009 | 3.2009 | 6.8000e-004 | 0.0000 | 3.2179 |

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3.2 Demolition - 2019

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 | 7.0000e-005 | 5.0000e-005 | 5.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1404 | 0.1404 | 0.0000 | 0.0000 | 0.1405 |
| Total | 7.0000e-005 | 5.0000e-005 | 5.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1404 | 0.1404 | 0.0000 | 0.0000 | 0.1405 |

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 | | | | | 0.0164 | 0.0000 | 0.0164 | 8.4200e-003 | 0.0000 | 8.4200e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.6400e-003 | 0.0525 | 0.0211 | 5.0000e-005 | | 2.3900e-003 | 2.3900e-003 | | 2.2000e-003 | 2.2000e-003 | 0.0000 | 4.1064 | 4.1064 | 1.3000e-003 | 0.0000 | 4.1389 |
| Total | 4.6400e-003 | 0.0525 | 0.0211 | 5.0000e-005 | 0.0164 | 2.3900e-003 | 0.0188 | 8.4200e-003 | 2.2000e-003 | 0.0106 | 0.0000 | 4.1064 | 4.1064 | 1.3000e-003 | 0.0000 | 4.1389 |

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3.3 Site Preparation - 2019

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 | 7.0000e-005 | 5.0000e-005 | 5.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1404 | 0.1404 | 0.0000 | 0.0000 | 0.1405 |
| Total | 7.0000e-005 | 5.0000e-005 | 5.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1404 | 0.1404 | 0.0000 | 0.0000 | 0.1405 |

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 | | | | | 0.0164 | 0.0000 | 0.0164 | 8.4200e-003 | 0.0000 | 8.4200e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.6400e-003 | 0.0525 | 0.0211 | 5.0000e-005 | | 2.3900e-003 | 2.3900e-003 | | 2.2000e-003 | 2.2000e-003 | 0.0000 | 4.1064 | 4.1064 | 1.3000e-003 | 0.0000 | 4.1388 |
| Total | 4.6400e-003 | 0.0525 | 0.0211 | 5.0000e-005 | 0.0164 | 2.3900e-003 | 0.0188 | 8.4200e-003 | 2.2000e-003 | 0.0106 | 0.0000 | 4.1064 | 4.1064 | 1.3000e-003 | 0.0000 | 4.1388 |

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3.3 Site Preparation - 2019

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 | 7.0000e-005 | 5.0000e-005 | 5.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1404 | 0.1404 | 0.0000 | 0.0000 | 0.1405 |
| Total | 7.0000e-005 | 5.0000e-005 | 5.6000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1404 | 0.1404 | 0.0000 | 0.0000 | 0.1405 |

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 | | | | | 5.4800e-003 | 0.0000 | 5.4800e-003 | 6.0000e-004 | 0.0000 | 6.0000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 9.8000e-003 | 0.1160 | 0.0740 | 1.5000e-004 | | 4.9700e-003 | 4.9700e-003 | | 4.5700e-003 | 4.5700e-003 | 0.0000 | 13.3927 | 13.3927 | 4.2400e-003 | 0.0000 | 13.4987 |
| Total | 9.8000e-003 | 0.1160 | 0.0740 | 1.5000e-004 | 5.4800e-003 | 4.9700e-003 | 0.0105 | 6.0000e-004 | 4.5700e-003 | 5.1700e-003 | 0.0000 | 13.3927 | 13.3927 | 4.2400e-003 | 0.0000 | 13.4987 |

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3.4 Grading - 2019

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.7900e-003 | 0.0613 | 0.0121 | 1.6000e-004 | 3.3400e-003 | 2.4000e-004 | 3.5700e-003 | 9.2000e-004 | 2.3000e-004 | 1.1400e-003 | 0.0000 | 15.1817 | 15.1817 | 7.1000e-004 | 0.0000 | 15.1995 |
| 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 | 2.9000e-004 | 2.2000e-004 | 2.2300e-003 | 1.0000e-005 | 6.3000e-004 | 0.0000 | 6.4000e-004 | 1.7000e-004 | 0.0000 | 1.7000e-004 | 0.0000 | 0.5617 | 0.5617 | 2.0000e-005 | 0.0000 | 0.5621 |
| Total | 2.0800e-003 | 0.0616 | 0.0144 | 1.7000e-004 | 3.9700e-003 | 2.4000e-004 | 4.2100e-003 | 1.0900e-003 | 2.3000e-004 | 1.3100e-003 | 0.0000 | 15.7434 | 15.7434 | 7.3000e-004 | 0.0000 | 15.7615 |

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 | | | | | 5.4800e-003 | 0.0000 | 5.4800e-003 | 6.0000e-004 | 0.0000 | 6.0000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 9.8000e-003 | 0.1160 | 0.0740 | 1.5000e-004 | | 4.9700e-003 | 4.9700e-003 | | 4.5700e-003 | 4.5700e-003 | 0.0000 | 13.3927 | 13.3927 | 4.2400e-003 | 0.0000 | 13.4986 |
| Total | 9.8000e-003 | 0.1160 | 0.0740 | 1.5000e-004 | 5.4800e-003 | 4.9700e-003 | 0.0105 | 6.0000e-004 | 4.5700e-003 | 5.1700e-003 | 0.0000 | 13.3927 | 13.3927 | 4.2400e-003 | 0.0000 | 13.4986 |

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3.4 Grading - 2019

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.7900e-003 | 0.0613 | 0.0121 | 1.6000e-004 | 3.3400e-003 | 2.4000e-004 | 3.5700e-003 | 9.2000e-004 | 2.3000e-004 | 1.1400e-003 | 0.0000 | 15.1817 | 15.1817 | 7.1000e-004 | 0.0000 | 15.1995 |
| 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 | 2.9000e-004 | 2.2000e-004 | 2.2300e-003 | 1.0000e-005 | 6.3000e-004 | 0.0000 | 6.4000e-004 | 1.7000e-004 | 0.0000 | 1.7000e-004 | 0.0000 | 0.5617 | 0.5617 | 2.0000e-005 | 0.0000 | 0.5621 |
| Total | 2.0800e-003 | 0.0616 | 0.0144 | 1.7000e-004 | 3.9700e-003 | 2.4000e-004 | 4.2100e-003 | 1.0900e-003 | 2.3000e-004 | 1.3100e-003 | 0.0000 | 15.7434 | 15.7434 | 7.3000e-004 | 0.0000 | 15.7615 |

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 | 1.7500e-003 | 0.0175 | 0.0173 | 2.0000e-005 | | 1.1700e-003 | 1.1700e-003 | | 1.0800e-003 | 1.0800e-003 | 0.0000 | 2.0925 | 2.0925 | 6.6000e-004 | 0.0000 | 2.1090 |
| Total | 1.7500e-003 | 0.0175 | 0.0173 | 2.0000e-005 | | 1.1700e-003 | 1.1700e-003 | | 1.0800e-003 | 1.0800e-003 | 0.0000 | 2.0925 | 2.0925 | 6.6000e-004 | 0.0000 | 2.1090 |

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3.5 Trenching - 2019

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 | 8.0000e-005 | 6.0000e-005 | 6.3000e-004 | 0.0000 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 5.0000e-005 | 0.0000 | 5.0000e-005 | 0.0000 | 0.1580 | 0.1580 | 0.0000 | 0.0000 | 0.1581 |
| Total | 8.0000e-005 | 6.0000e-005 | 6.3000e-004 | 0.0000 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 5.0000e-005 | 0.0000 | 5.0000e-005 | 0.0000 | 0.1580 | 0.1580 | 0.0000 | 0.0000 | 0.1581 |

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 | 1.7500e-003 | 0.0175 | 0.0173 | 2.0000e-005 | | 1.1700e-003 | 1.1700e-003 | | 1.0800e-003 | 1.0800e-003 | 0.0000 | 2.0925 | 2.0925 | 6.6000e-004 | 0.0000 | 2.1090 |
| Total | 1.7500e-003 | 0.0175 | 0.0173 | 2.0000e-005 | | 1.1700e-003 | 1.1700e-003 | | 1.0800e-003 | 1.0800e-003 | 0.0000 | 2.0925 | 2.0925 | 6.6000e-004 | 0.0000 | 2.1090 |

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3.5 Trenching - 2019

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 | 8.0000e-005 | 6.0000e-005 | 6.3000e-004 | 0.0000 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 5.0000e-005 | 0.0000 | 5.0000e-005 | 0.0000 | 0.1580 | 0.1580 | 0.0000 | 0.0000 | 0.1581 |
| Total | 8.0000e-005 | 6.0000e-005 | 6.3000e-004 | 0.0000 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 5.0000e-005 | 0.0000 | 5.0000e-005 | 0.0000 | 0.1580 | 0.1580 | 0.0000 | 0.0000 | 0.1581 |

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 | 2.1200e-003 | 0.0184 | 0.0114 | 2.0000e-005 | | 1.0100e-003 | 1.0100e-003 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 1.7167 | 1.7167 | 4.9000e-004 | 0.0000 | 1.7290 |
| Total | 2.1200e-003 | 0.0184 | 0.0114 | 2.0000e-005 | | 1.0100e-003 | 1.0100e-003 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 1.7167 | 1.7167 | 4.9000e-004 | 0.0000 | 1.7290 |

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3.6 Building Construction - 2019

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 | 2.7000e-004 | 9.2600e-003 | 1.8300e-003 | 2.0000e-005 | 1.2100e-003 | 4.0000e-005 | 1.2400e-003 | 3.1000e-004 | 3.0000e-005 | 3.4000e-004 | 0.0000 | 2.2927 | 2.2927 | 1.1000e-004 | 0.0000 | 2.2954 |
| Vendor | 2.6000e-004 | 6.6300e-003 | 1.7800e-003 | 1.0000e-005 | 3.5000e-004 | 5.0000e-005 | 3.9000e-004 | 1.0000e-004 | 5.0000e-005 | 1.5000e-004 | 0.0000 | 1.3810 | 1.3810 | 7.0000e-005 | 0.0000 | 1.3827 |
| Worker | 4.8000e-004 | 3.6000e-004 | 3.7200e-003 | 1.0000e-005 | 1.0500e-003 | 1.0000e-005 | 1.0600e-003 | 2.8000e-004 | 1.0000e-005 | 2.9000e-004 | 0.0000 | 0.9338 | 0.9338 | 3.0000e-005 | 0.0000 | 0.9344 |
| Total | 1.0100e-003 | 0.0163 | 7.3300e-003 | 4.0000e-005 | 2.6100e-003 | 1.0000e-004 | 2.6900e-003 | 6.9000e-004 | 9.0000e-005 | 7.8000e-004 | 0.0000 | 4.6075 | 4.6075 | 2.1000e-004 | 0.0000 | 4.6125 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 2.1200e-003 | 0.0184 | 0.0114 | 2.0000e-005 | | 1.0100e-003 | 1.0100e-003 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 1.7167 | 1.7167 | 4.9000e-004 | 0.0000 | 1.7290 |
| Total | 2.1200e-003 | 0.0184 | 0.0114 | 2.0000e-005 | | 1.0100e-003 | 1.0100e-003 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 1.7167 | 1.7167 | 4.9000e-004 | 0.0000 | 1.7290 |

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3.6 Building Construction - 2019

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 | 2.7000e-004 | 9.2600e-003 | 1.8300e-003 | 2.0000e-005 | 1.2100e-003 | 4.0000e-005 | 1.2400e-003 | 3.1000e-004 | 3.0000e-005 | 3.4000e-004 | 0.0000 | 2.2927 | 2.2927 | 1.1000e-004 | 0.0000 | 2.2954 |
| Vendor | 2.6000e-004 | 6.6300e-003 | 1.7800e-003 | 1.0000e-005 | 3.5000e-004 | 5.0000e-005 | 3.9000e-004 | 1.0000e-004 | 5.0000e-005 | 1.5000e-004 | 0.0000 | 1.3810 | 1.3810 | 7.0000e-005 | 0.0000 | 1.3827 |
| Worker | 4.8000e-004 | 3.6000e-004 | 3.7200e-003 | 1.0000e-005 | 1.0500e-003 | 1.0000e-005 | 1.0600e-003 | 2.8000e-004 | 1.0000e-005 | 2.9000e-004 | 0.0000 | 0.9338 | 0.9338 | 3.0000e-005 | 0.0000 | 0.9344 |
| Total | 1.0100e-003 | 0.0163 | 7.3300e-003 | 4.0000e-005 | 2.6100e-003 | 1.0000e-004 | 2.6900e-003 | 6.9000e-004 | 9.0000e-005 | 7.8000e-004 | 0.0000 | 4.6075 | 4.6075 | 2.1000e-004 | 0.0000 | 4.6125 |

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 | 3.5200e-003 | 0.0311 | 0.0203 | 4.0000e-005 | | 1.6300e-003 | 1.6300e-003 | | 1.5300e-003 | 1.5300e-003 | 0.0000 | 3.1321 | 3.1321 | 9.1000e-004 | 0.0000 | 3.1548 |
| Total | 3.5200e-003 | 0.0311 | 0.0203 | 4.0000e-005 | | 1.6300e-003 | 1.6300e-003 | | 1.5300e-003 | 1.5300e-003 | 0.0000 | 3.1321 | 3.1321 | 9.1000e-004 | 0.0000 | 3.1548 |

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3.6 Building Construction - 2020

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.6000e-004 | 0.0160 | 3.2800e-003 | 4.0000e-005 | 1.3100e-003 | 5.0000e-005 | 1.3700e-003 | 3.5000e-004 | 5.0000e-005 | 4.0000e-004 | 0.0000 | 4.2140 | 4.2140 | 1.9000e-004 | 0.0000 | 4.2188 |
| Vendor | 3.9000e-004 | 0.0111 | 2.9600e-003 | 3.0000e-005 | 6.4000e-004 | 5.0000e-005 | 7.0000e-004 | 1.9000e-004 | 5.0000e-005 | 2.4000e-004 | 0.0000 | 2.5491 | 2.5491 | 1.2000e-004 | 0.0000 | 2.5520 |
| Worker | 8.2000e-004 | 5.9000e-004 | 6.1800e-003 | 2.0000e-005 | 1.9600e-003 | 1.0000e-005 | 1.9700e-003 | 5.2000e-004 | 1.0000e-005 | 5.3000e-004 | 0.0000 | 1.6800 | 1.6800 | 4.0000e-005 | 0.0000 | 1.6810 |
| Total | 1.6700e-003 | 0.0277 | 0.0124 | 9.0000e-005 | 3.9100e-003 | 1.1000e-004 | 4.0400e-003 | 1.0600e-003 | 1.1000e-004 | 1.1700e-003 | 0.0000 | 8.4430 | 8.4430 | 3.5000e-004 | 0.0000 | 8.4518 |

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 | 3.5200e-003 | 0.0311 | 0.0203 | 4.0000e-005 | | 1.6300e-003 | 1.6300e-003 | | 1.5300e-003 | 1.5300e-003 | 0.0000 | 3.1321 | 3.1321 | 9.1000e-004 | 0.0000 | 3.1548 |
| Total | 3.5200e-003 | 0.0311 | 0.0203 | 4.0000e-005 | | 1.6300e-003 | 1.6300e-003 | | 1.5300e-003 | 1.5300e-003 | 0.0000 | 3.1321 | 3.1321 | 9.1000e-004 | 0.0000 | 3.1548 |

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3.6 Building Construction - 2020

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.6000e-004 | 0.0160 | 3.2800e-003 | 4.0000e-005 | 1.3100e-003 | 5.0000e-005 | 1.3700e-003 | 3.5000e-004 | 5.0000e-005 | 4.0000e-004 | 0.0000 | 4.2140 | 4.2140 | 1.9000e-004 | 0.0000 | 4.2188 |
| Vendor | 3.9000e-004 | 0.0111 | 2.9600e-003 | 3.0000e-005 | 6.4000e-004 | 5.0000e-005 | 7.0000e-004 | 1.9000e-004 | 5.0000e-005 | 2.4000e-004 | 0.0000 | 2.5491 | 2.5491 | 1.2000e-004 | 0.0000 | 2.5520 |
| Worker | 8.2000e-004 | 5.9000e-004 | 6.1800e-003 | 2.0000e-005 | 1.9600e-003 | 1.0000e-005 | 1.9700e-003 | 5.2000e-004 | 1.0000e-005 | 5.3000e-004 | 0.0000 | 1.6800 | 1.6800 | 4.0000e-005 | 0.0000 | 1.6810 |
| Total | 1.6700e-003 | 0.0277 | 0.0124 | 9.0000e-005 | 3.9100e-003 | 1.1000e-004 | 4.0400e-003 | 1.0600e-003 | 1.1000e-004 | 1.1700e-003 | 0.0000 | 8.4430 | 8.4430 | 3.5000e-004 | 0.0000 | 8.4518 |

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 | 1.5600e-003 | 0.0158 | 0.0168 | 2.0000e-005 | | 9.3000e-004 | 9.3000e-004 | | 8.6000e-004 | 8.6000e-004 | 0.0000 | 2.1531 | 2.1531 | 7.0000e-004 | 0.0000 | 2.1705 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 1.5600e-003 | 0.0158 | 0.0168 | 2.0000e-005 | | 9.3000e-004 | 9.3000e-004 | | 8.6000e-004 | 8.6000e-004 | 0.0000 | 2.1531 | 2.1531 | 7.0000e-004 | 0.0000 | 2.1705 |

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3.7 Paving - 2020

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 | 7.0000e-005 | 5.0000e-005 | 5.0000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1360 | 0.1360 | 0.0000 | 0.0000 | 0.1361 |
| Total | 7.0000e-005 | 5.0000e-005 | 5.0000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1360 | 0.1360 | 0.0000 | 0.0000 | 0.1361 |

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 | 1.5600e-003 | 0.0158 | 0.0168 | 2.0000e-005 | | 9.3000e-004 | 9.3000e-004 | | 8.6000e-004 | 8.6000e-004 | 0.0000 | 2.1531 | 2.1531 | 7.0000e-004 | 0.0000 | 2.1705 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 1.5600e-003 | 0.0158 | 0.0168 | 2.0000e-005 | | 9.3000e-004 | 9.3000e-004 | | 8.6000e-004 | 8.6000e-004 | 0.0000 | 2.1531 | 2.1531 | 7.0000e-004 | 0.0000 | 2.1705 |

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3.7 Paving - 2020

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 | 7.0000e-005 | 5.0000e-005 | 5.0000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1360 | 0.1360 | 0.0000 | 0.0000 | 0.1361 |
| Total | 7.0000e-005 | 5.0000e-005 | 5.0000e-004 | 0.0000 | 1.6000e-004 | 0.0000 | 1.6000e-004 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.1360 | 0.1360 | 0.0000 | 0.0000 | 0.1361 |

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 | 0.2941 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.8200e-003 | 0.0233 | 0.0293 | 5.0000e-005 | | 1.2500e-003 | 1.2500e-003 | | 1.2400e-003 | 1.2400e-003 | 0.0000 | 4.0285 | 4.0285 | 6.7000e-004 | 0.0000 | 4.0454 |
| Total | 0.2969 | 0.0233 | 0.0293 | 5.0000e-005 | | 1.2500e-003 | 1.2500e-003 | | 1.2400e-003 | 1.2400e-003 | 0.0000 | 4.0285 | 4.0285 | 6.7000e-004 | 0.0000 | 4.0454 |

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3.8 Architectural Coating - 2020

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.0000e-004 | 0.0139 | 2.8500e-003 | 4.0000e-005 | 8.1000e-004 | 5.0000e-005 | 8.6000e-004 | 2.2000e-004 | 4.0000e-005 | 2.7000e-004 | 0.0000 | 3.6610 | 3.6610 | 1.7000e-004 | 0.0000 | 3.6652 |
| 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 | 2.7000e-004 | 1.9000e-004 | 2.0000e-003 | 1.0000e-005 | 6.3000e-004 | 0.0000 | 6.4000e-004 | 1.7000e-004 | 0.0000 | 1.7000e-004 | 0.0000 | 0.5441 | 0.5441 | 1.0000e-005 | 0.0000 | 0.5445 |
| Total | 6.7000e-004 | 0.0141 | 4.8500e-003 | 5.0000e-005 | 1.4400e-003 | 5.0000e-005 | 1.5000e-003 | 3.9000e-004 | 4.0000e-005 | 4.4000e-004 | 0.0000 | 4.2051 | 4.2051 | 1.8000e-004 | 0.0000 | 4.2096 |

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 | 0.2941 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.8200e-003 | 0.0233 | 0.0293 | 5.0000e-005 | | 1.2500e-003 | 1.2500e-003 | | 1.2400e-003 | 1.2400e-003 | 0.0000 | 4.0285 | 4.0285 | 6.7000e-004 | 0.0000 | 4.0454 |
| Total | 0.2969 | 0.0233 | 0.0293 | 5.0000e-005 | | 1.2500e-003 | 1.2500e-003 | | 1.2400e-003 | 1.2400e-003 | 0.0000 | 4.0285 | 4.0285 | 6.7000e-004 | 0.0000 | 4.0454 |

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3.8 Architectural Coating - 2020

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.0000e-004 | 0.0139 | 2.8500e-003 | 4.0000e-005 | 8.1000e-004 | 5.0000e-005 | 8.6000e-004 | 2.2000e-004 | 4.0000e-005 | 2.7000e-004 | 0.0000 | 3.6610 | 3.6610 | 1.7000e-004 | 0.0000 | 3.6652 |
| 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 | 2.7000e-004 | 1.9000e-004 | 2.0000e-003 | 1.0000e-005 | 6.3000e-004 | 0.0000 | 6.4000e-004 | 1.7000e-004 | 0.0000 | 1.7000e-004 | 0.0000 | 0.5441 | 0.5441 | 1.0000e-005 | 0.0000 | 0.5445 |
| Total | 6.7000e-004 | 0.0141 | 4.8500e-003 | 5.0000e-005 | 1.4400e-003 | 5.0000e-005 | 1.5000e-003 | 3.9000e-004 | 4.0000e-005 | 4.4000e-004 | 0.0000 | 4.2051 | 4.2051 | 1.8000e-004 | 0.0000 | 4.2096 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|---------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0224 | 0.0955 | 0.2710 | 9.1000e-004 | 0.0818 | 7.8000e-004 | 0.0826 | 0.0219 | 7.3000e-004 | 0.0226 | 0.0000 | 83.1219 | 83.1219 | 2.8500e-003 | 0.0000 | 83.1931 |
| Unmitigated | 0.0224 | 0.0955 | 0.2710 | 9.1000e-004 | 0.0818 | 7.8000e-004 | 0.0826 | 0.0219 | 7.3000e-004 | 0.0226 | 0.0000 | 83.1219 | 83.1219 | 2.8500e-003 | 0.0000 | 83.1931 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|----------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Junior College (2Yr) | 111.10 | 45.65 | 4.95 | 219,888 | 219,888 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 111.10 | 45.65 | 4.95 | 219,888 | 219,888 |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|----------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Junior College (2Yr) | 9.50 | 7.30 | 7.30 | 6.40 | 88.60 | 5.00 | 92 | 7 | 1 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Junior College (2Yr) | 0.607897 | 0.037434 | 0.184004 | 0.107261 | 0.014919 | 0.004991 | 0.012447 | 0.020659 | 0.002115 | 0.001554 | 0.005334 | 0.000623 | 0.000761 |
| Parking Lot | 0.607897 | 0.037434 | 0.184004 | 0.107261 | 0.014919 | 0.004991 | 0.012447 | 0.020659 | 0.002115 | 0.001554 | 0.005334 | 0.000623 | 0.000761 |

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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 | 84.2385 | 84.2385 | 8.4200e-003 | 1.7400e-003 | 84.9685 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 84.2385 | 84.2385 | 8.4200e-003 | 1.7400e-003 | 84.9685 |
| NaturalGas Mitigated | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |
| NaturalGas Unmitigated | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |

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5.2 Energy by Land Use - NaturalGas

Unmitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|----------------------|----------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Junior College (2Yr) | 1.21495e+006 | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |

Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|----------------------|----------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Junior College (2Yr) | 1.21495e+006 | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |

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5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------|-----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kWh/yr | MT/yr | | | |
| Junior College (2Yr) | 628100 | 82.6214 | 8.2600e-003 | 1.7100e-003 | 83.3374 |
| Parking Lot | 12293.4 | 1.6171 | 1.6000e-004 | 3.0000e-005 | 1.6311 |
| Total | | 84.2385 | 8.4200e-003 | 1.7400e-003 | 84.9685 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------|-----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kWh/yr | MT/yr | | | |
| Junior College (2Yr) | 628100 | 82.6214 | 8.2600e-003 | 1.7100e-003 | 83.3374 |
| Parking Lot | 12293.4 | 1.6171 | 1.6000e-004 | 3.0000e-005 | 1.6311 |
| Total | | 84.2385 | 8.4200e-003 | 1.7400e-003 | 84.9685 |

6.0 Area Detail

6.1 Mitigation Measures Area

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| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|---------|-------------|-------------|--------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-------------|-------------|-------------|--------|-------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |
| Unmitigated | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-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 | 0.0294 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.2171 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.2000e-004 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |
| Total | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |

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6.2 Area by SubCategory

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 | 0.0294 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.2171 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.2000e-004 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |
| Total | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |

7.0 Water Detail

7.1 Mitigation Measures Water

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| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|-------------|-------------|--------|
| Category | MT/yr | | | |
| Mitigated | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |
| Unmitigated | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------|--------------------|---------------|--------------------|--------------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Junior College (2Yr) | 2.6977 / 4.21947 | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |

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7.2 Water by Land Use

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------|--------------------|---------------|--------------------|--------------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Junior College (2Yr) | 2.6977 / 4.21947 | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|---------|
| | MT/yr | | | |
| Mitigated | 14.5139 | 0.8577 | 0.0000 | 35.9575 |
| Unmitigated | 14.5139 | 0.8577 | 0.0000 | 35.9575 |

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8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------|----------------|----------------|---------------|---------------|----------------|
| Land Use | tons | MT/yr | | | |
| Junior College (2Yr) | 71.5 | 14.5139 | 0.8577 | 0.0000 | 35.9575 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 14.5139 | 0.8577 | 0.0000 | 35.9575 |

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------|----------------|----------------|---------------|---------------|----------------|
| Land Use | tons | MT/yr | | | |
| Junior College (2Yr) | 71.5 | 14.5139 | 0.8577 | 0.0000 | 35.9575 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 14.5139 | 0.8577 | 0.0000 | 35.9575 |

9.0 Operational Offroad

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

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

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

11.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------|--------|----------|-------------|--------------------|------------|
| Junior College (2Yr) | 55.00 | 1000sqft | 4.90 | 55,000.00 | 0 |
| Parking Lot | 196.00 | Space | 0.00 | 35,124.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|---------------------------------|--------------------------------|---------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 58 |
| Climate Zone | 3 | | | 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

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Project Characteristics - PG&E 2020 290 rate

Land Use - Carpenters Training Center Morgan Hill Land Uses

Construction Phase - Applicant construction schedule, use total work day

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Off-road Equipment - Applicant equipment usage and quantity

Trips and VMT - 170 one way trips for building construction, estimated 96 one way hauling trips for asphalt during paving, TAC trip length 1 mile

Demolition - No demolition of building

Grading - 3,150-cy of soil exported during grading

Vehicle Trips - 303 trips (based on AM + PM peak trip value *10%) 303 trips/150 students = 2.02 weekday, 0.83 saturday, 0.09 sunday

Energy Use -

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - BMPs, tier 3 mitigation for all equipment with DPF on portable equipment

| 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 | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |

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| | | | |
|-------------------------|----------------------------|-----------|-----------|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 5.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstructionPhase | NumDays | 18.00 | 20.00 |
| tblConstructionPhase | NumDays | 230.00 | 20.00 |
| tblConstructionPhase | NumDays | 20.00 | 5.00 |
| tblConstructionPhase | NumDays | 8.00 | 20.00 |
| tblConstructionPhase | NumDays | 18.00 | 5.00 |
| tblGrading | MaterialExported | 0.00 | 3,150.00 |
| tblLandUse | LandUseSquareFeet | 78,400.00 | 35,124.00 |

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| | | | |
|---------------------------|----------------------------|--------|------|
| tblLandUse | LotAcreage | 1.26 | 4.90 |
| tblLandUse | LotAcreage | 1.76 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 1.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 4.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 4.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |

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| | | | |
|-----------------|-------------------|-------|--------|
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 1.00 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 170.00 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 96.00 |
| 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 | VendorTripLength | 7.30 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblTripsAndVMT | WorkerTripLength | 10.80 | 1.00 |
| tblVehicleTrips | ST_TR | 11.23 | 0.83 |
| tblVehicleTrips | SU_TR | 1.21 | 0.09 |
| tblVehicleTrips | WD_TR | 27.49 | 2.02 |
| tblWater | AerobicPercent | 87.46 | 100.00 |
| tblWater | AerobicPercent | 87.46 | 100.00 |

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| | | | |
|---------|---------------------------------------|-------|------|
| tbWater | AnaerobicandFacultativeLagoonsPercent | 2.21 | 0.00 |
| tbWater | AnaerobicandFacultativeLagoonsPercent | 2.21 | 0.00 |
| tbWater | SepticTankPercent | 10.33 | 0.00 |
| tbWater | SepticTankPercent | 10.33 | 0.00 |

2.0 Emissions Summary

Carpenters Training Center Morgan Hill TAC - Santa Clara County, Annual

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|-----------|--|--|
| 1 | 9-9-2019 | 12-8-2019 | 0.2122 | 0.1337 |
| 2 | 12-9-2019 | 3-8-2020 | 0.0846 | 0.0602 |
| 3 | 3-9-2020 | 6-8-2020 | 0.1860 | 0.1848 |
| 4 | 6-9-2020 | 9-8-2020 | 0.1279 | 0.1270 |
| | | Highest | 0.2122 | 0.1848 |

2.2 Overall Operational

Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |
| Energy | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 149.0729 | 149.0729 | 9.6700e-003 | 2.9300e-003 | 150.1881 |
| Mobile | 0.0224 | 0.0955 | 0.2710 | 9.1000e-004 | 0.0818 | 7.8000e-004 | 0.0826 | 0.0219 | 7.3000e-004 | 0.0226 | 0.0000 | 83.1219 | 83.1219 | 2.8500e-003 | 0.0000 | 83.1931 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 14.5139 | 0.0000 | 14.5139 | 0.8577 | 0.0000 | 35.9575 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.9545 | 3.8628 | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |
| Total | 0.2756 | 0.1550 | 0.3234 | 1.2700e-003 | 0.0818 | 5.3200e-003 | 0.0871 | 0.0219 | 5.2700e-003 | 0.0272 | 15.4683 | 236.0620 | 251.5303 | 0.8739 | 5.0900e-003 | 274.8948 |

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2.2 Overall Operational

Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |
| Energy | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 149.0729 | 149.0729 | 9.6700e-003 | 2.9300e-003 | 150.1881 |
| Mobile | 0.0224 | 0.0955 | 0.2710 | 9.1000e-004 | 0.0818 | 7.8000e-004 | 0.0826 | 0.0219 | 7.3000e-004 | 0.0226 | 0.0000 | 83.1219 | 83.1219 | 2.8500e-003 | 0.0000 | 83.1931 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 14.5139 | 0.0000 | 14.5139 | 0.8577 | 0.0000 | 35.9575 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.9545 | 3.8628 | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |
| Total | 0.2756 | 0.1550 | 0.3234 | 1.2700e-003 | 0.0818 | 5.3200e-003 | 0.0871 | 0.0219 | 5.2700e-003 | 0.0272 | 15.4683 | 236.0620 | 251.5303 | 0.8739 | 5.0900e-003 | 274.8948 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

3.0 Construction Detail

Construction Phase

Carpenters Training Center Morgan Hill TAC - Santa Clara County, Annual

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|-----------------------|-----------------------|------------|------------|---------------|----------|-------------------|
| 1 | Demolition | Demolition | 9/9/2019 | 9/13/2019 | 5 | 5 | |
| 2 | Site Preparation | Site Preparation | 9/16/2019 | 9/20/2019 | 5 | 5 | |
| 3 | Grading | Grading | 9/23/2019 | 10/18/2019 | 5 | 20 | |
| 4 | Trenching | Trenching | 9/23/2019 | 10/11/2019 | 5 | 15 | |
| 5 | Building Construction | Building Construction | 12/23/2019 | 1/17/2020 | 5 | 20 | |
| 6 | Paving | Paving | 3/1/2020 | 3/6/2020 | 5 | 5 | |
| 7 | Architectural Coating | Architectural Coating | 5/24/2020 | 6/19/2020 | 5 | 20 | |

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 82,500; Non-Residential Outdoor: 27,500; Striped Parking Area: 2,107 (Architectural Coating – sqft)

OffRoad Equipment

Carpenters Training Center Morgan Hill TAC - Santa Clara County, Annual

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 1 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 0 | 0.00 | 247 | 0.40 |
| Demolition | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Site Preparation | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 1 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 0 | 0.00 | 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 | 4.00 | 231 | 0.29 |
| Building Construction | Forklifts | 1 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 0 | 0.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 0 | 0.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 4.00 | 46 | 0.45 |
| Paving | Cement and Mortar Mixers | 0 | 0.00 | 9 | 0.56 |
| Paving | Pavers | 0 | 0.00 | 130 | 0.42 |
| Paving | Paving Equipment | 1 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 1 | 8.00 | 80 | 0.38 |
| Paving | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Architectural Coating | Aerial Lifts | 1 | 8.00 | 63 | 0.31 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

Trips and VMT

Carpenters Training Center Morgan Hill TAC - Santa Clara County, Annual

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|-----------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Demolition | 3 | 8.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 3 | 8.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 3 | 8.00 | 0.00 | 394.00 | 1.00 | 1.00 | 1.00 | LD_Mix | HDT_Mix | HHDT |
| Trenching | 1 | 3.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 3 | 38.00 | 15.00 | 170.00 | 1.00 | 1.00 | 1.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 3 | 8.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 2 | 8.00 | 0.00 | 96.00 | 1.00 | 1.00 | 1.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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3.2 Demolition - 2019

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 2.3900e-003 | 0.0215 | 0.0232 | 4.0000e-005 | | 1.2900e-003 | 1.2900e-003 | | 1.2300e-003 | 1.2300e-003 | 0.0000 | 3.2009 | 3.2009 | 6.8000e-004 | 0.0000 | 3.2179 |
| Total | 2.3900e-003 | 0.0215 | 0.0232 | 4.0000e-005 | | 1.2900e-003 | 1.2900e-003 | | 1.2300e-003 | 1.2300e-003 | 0.0000 | 3.2009 | 3.2009 | 6.8000e-004 | 0.0000 | 3.2179 |

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 | 2.0000e-005 | 1.0000e-005 | 1.5000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0168 | 0.0168 | 0.0000 | 0.0000 | 0.0168 |
| Total | 2.0000e-005 | 1.0000e-005 | 1.5000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0168 | 0.0168 | 0.0000 | 0.0000 | 0.0168 |

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3.2 Demolition - 2019

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 | 8.2000e-004 | 0.0176 | 0.0253 | 4.0000e-005 | | 6.8000e-004 | 6.8000e-004 | | 6.8000e-004 | 6.8000e-004 | 0.0000 | 3.2009 | 3.2009 | 6.8000e-004 | 0.0000 | 3.2179 |
| Total | 8.2000e-004 | 0.0176 | 0.0253 | 4.0000e-005 | | 6.8000e-004 | 6.8000e-004 | | 6.8000e-004 | 6.8000e-004 | 0.0000 | 3.2009 | 3.2009 | 6.8000e-004 | 0.0000 | 3.2179 |

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 | 2.0000e-005 | 1.0000e-005 | 1.5000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0168 | 0.0168 | 0.0000 | 0.0000 | 0.0168 |
| Total | 2.0000e-005 | 1.0000e-005 | 1.5000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0168 | 0.0168 | 0.0000 | 0.0000 | 0.0168 |

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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 | | | | | 0.0164 | 0.0000 | 0.0164 | 8.4200e-003 | 0.0000 | 8.4200e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.6400e-003 | 0.0525 | 0.0211 | 5.0000e-005 | | 2.3900e-003 | 2.3900e-003 | | 2.2000e-003 | 2.2000e-003 | 0.0000 | 4.1064 | 4.1064 | 1.3000e-003 | 0.0000 | 4.1389 |
| Total | 4.6400e-003 | 0.0525 | 0.0211 | 5.0000e-005 | 0.0164 | 2.3900e-003 | 0.0188 | 8.4200e-003 | 2.2000e-003 | 0.0106 | 0.0000 | 4.1064 | 4.1064 | 1.3000e-003 | 0.0000 | 4.1389 |

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 | 2.0000e-005 | 1.0000e-005 | 1.5000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0168 | 0.0168 | 0.0000 | 0.0000 | 0.0168 |
| Total | 2.0000e-005 | 1.0000e-005 | 1.5000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0168 | 0.0168 | 0.0000 | 0.0000 | 0.0168 |

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3.3 Site Preparation - 2019

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 | | | | | 7.3700e-003 | 0.0000 | 7.3700e-003 | 1.8900e-003 | 0.0000 | 1.8900e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.1200e-003 | 0.0223 | 0.0260 | 5.0000e-005 | | 9.8000e-004 | 9.8000e-004 | | 9.8000e-004 | 9.8000e-004 | 0.0000 | 4.1064 | 4.1064 | 1.3000e-003 | 0.0000 | 4.1388 |
| Total | 1.1200e-003 | 0.0223 | 0.0260 | 5.0000e-005 | 7.3700e-003 | 9.8000e-004 | 8.3500e-003 | 1.8900e-003 | 9.8000e-004 | 2.8700e-003 | 0.0000 | 4.1064 | 4.1064 | 1.3000e-003 | 0.0000 | 4.1388 |

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 | 2.0000e-005 | 1.0000e-005 | 1.5000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0168 | 0.0168 | 0.0000 | 0.0000 | 0.0168 |
| Total | 2.0000e-005 | 1.0000e-005 | 1.5000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0168 | 0.0168 | 0.0000 | 0.0000 | 0.0168 |

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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 | | | | | 5.4800e-003 | 0.0000 | 5.4800e-003 | 6.0000e-004 | 0.0000 | 6.0000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 9.8000e-003 | 0.1160 | 0.0740 | 1.5000e-004 | | 4.9700e-003 | 4.9700e-003 | | 4.5700e-003 | 4.5700e-003 | 0.0000 | 13.3927 | 13.3927 | 4.2400e-003 | 0.0000 | 13.4987 |
| Total | 9.8000e-003 | 0.1160 | 0.0740 | 1.5000e-004 | 5.4800e-003 | 4.9700e-003 | 0.0105 | 6.0000e-004 | 4.5700e-003 | 5.1700e-003 | 0.0000 | 13.3927 | 13.3927 | 4.2400e-003 | 0.0000 | 13.4987 |

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.8000e-004 | 0.0211 | 3.5200e-003 | 3.0000e-005 | 1.7000e-004 | 3.0000e-005 | 2.0000e-004 | 5.0000e-005 | 3.0000e-005 | 7.0000e-005 | 0.0000 | 2.5522 | 2.5522 | 3.0000e-004 | 0.0000 | 2.5596 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0000e-004 | 5.0000e-005 | 5.9000e-004 | 0.0000 | 6.0000e-005 | 0.0000 | 6.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0671 | 0.0671 | 0.0000 | 0.0000 | 0.0672 |
| Total | 5.8000e-004 | 0.0212 | 4.1100e-003 | 3.0000e-005 | 2.3000e-004 | 3.0000e-005 | 2.6000e-004 | 7.0000e-005 | 3.0000e-005 | 9.0000e-005 | 0.0000 | 2.6193 | 2.6193 | 3.0000e-004 | 0.0000 | 2.6268 |

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3.4 Grading - 2019

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 | | | | | 2.4700e-003 | 0.0000 | 2.4700e-003 | 1.3000e-004 | 0.0000 | 1.3000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.6500e-003 | 0.0733 | 0.0978 | 1.5000e-004 | | 3.5900e-003 | 3.5900e-003 | | 3.5900e-003 | 3.5900e-003 | 0.0000 | 13.3927 | 13.3927 | 4.2400e-003 | 0.0000 | 13.4986 |
| Total | 3.6500e-003 | 0.0733 | 0.0978 | 1.5000e-004 | 2.4700e-003 | 3.5900e-003 | 6.0600e-003 | 1.3000e-004 | 3.5900e-003 | 3.7200e-003 | 0.0000 | 13.3927 | 13.3927 | 4.2400e-003 | 0.0000 | 13.4986 |

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.8000e-004 | 0.0211 | 3.5200e-003 | 3.0000e-005 | 1.7000e-004 | 3.0000e-005 | 2.0000e-004 | 5.0000e-005 | 3.0000e-005 | 7.0000e-005 | 0.0000 | 2.5522 | 2.5522 | 3.0000e-004 | 0.0000 | 2.5596 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0000e-004 | 5.0000e-005 | 5.9000e-004 | 0.0000 | 6.0000e-005 | 0.0000 | 6.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0671 | 0.0671 | 0.0000 | 0.0000 | 0.0672 |
| Total | 5.8000e-004 | 0.0212 | 4.1100e-003 | 3.0000e-005 | 2.3000e-004 | 3.0000e-005 | 2.6000e-004 | 7.0000e-005 | 3.0000e-005 | 9.0000e-005 | 0.0000 | 2.6193 | 2.6193 | 3.0000e-004 | 0.0000 | 2.6268 |

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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 | 1.7500e-003 | 0.0175 | 0.0173 | 2.0000e-005 | | 1.1700e-003 | 1.1700e-003 | | 1.0800e-003 | 1.0800e-003 | 0.0000 | 2.0925 | 2.0925 | 6.6000e-004 | 0.0000 | 2.1090 |
| Total | 1.7500e-003 | 0.0175 | 0.0173 | 2.0000e-005 | | 1.1700e-003 | 1.1700e-003 | | 1.0800e-003 | 1.0800e-003 | 0.0000 | 2.0925 | 2.0925 | 6.6000e-004 | 0.0000 | 2.1090 |

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|--------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.0000e-005 | 1.0000e-005 | 1.7000e-004 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0189 | 0.0189 | 0.0000 | 0.0000 | 0.0189 |
| Total | 3.0000e-005 | 1.0000e-005 | 1.7000e-004 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0189 | 0.0189 | 0.0000 | 0.0000 | 0.0189 |

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3.5 Trenching - 2019

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 | 5.7000e-004 | 0.0130 | 0.0176 | 2.0000e-005 | | 9.1000e-004 | 9.1000e-004 | | 9.1000e-004 | 9.1000e-004 | 0.0000 | 2.0925 | 2.0925 | 6.6000e-004 | 0.0000 | 2.1090 |
| Total | 5.7000e-004 | 0.0130 | 0.0176 | 2.0000e-005 | | 9.1000e-004 | 9.1000e-004 | | 9.1000e-004 | 9.1000e-004 | 0.0000 | 2.0925 | 2.0925 | 6.6000e-004 | 0.0000 | 2.1090 |

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|--------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.0000e-005 | 1.0000e-005 | 1.7000e-004 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0189 | 0.0189 | 0.0000 | 0.0000 | 0.0189 |
| Total | 3.0000e-005 | 1.0000e-005 | 1.7000e-004 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0189 | 0.0189 | 0.0000 | 0.0000 | 0.0189 |

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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 | 2.1200e-003 | 0.0184 | 0.0114 | 2.0000e-005 | | 1.0100e-003 | 1.0100e-003 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 1.7167 | 1.7167 | 4.9000e-004 | 0.0000 | 1.7290 |
| Total | 2.1200e-003 | 0.0184 | 0.0114 | 2.0000e-005 | | 1.0100e-003 | 1.0100e-003 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 1.7167 | 1.7167 | 4.9000e-004 | 0.0000 | 1.7290 |

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 | 3.1900e-003 | 5.3000e-004 | 0.0000 | 6.0000e-005 | 0.0000 | 6.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.3854 | 0.3854 | 5.0000e-005 | 0.0000 | 0.3865 |
| Vendor | 1.1000e-004 | 3.7000e-003 | 1.0600e-003 | 0.0000 | 5.0000e-005 | 1.0000e-005 | 6.0000e-005 | 1.0000e-005 | 1.0000e-005 | 2.0000e-005 | 0.0000 | 0.4210 | 0.4210 | 5.0000e-005 | 0.0000 | 0.4222 |
| Worker | 1.6000e-004 | 8.0000e-005 | 9.8000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.0000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.1116 | 0.1116 | 1.0000e-005 | 0.0000 | 0.1117 |
| Total | 3.4000e-004 | 6.9700e-003 | 2.5700e-003 | 0.0000 | 2.1000e-004 | 1.0000e-005 | 2.2000e-004 | 6.0000e-005 | 1.0000e-005 | 7.0000e-005 | 0.0000 | 0.9180 | 0.9180 | 1.1000e-004 | 0.0000 | 0.9204 |

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3.6 Building Construction - 2019

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 | 5.7000e-004 | 0.0108 | 0.0121 | 2.0000e-005 | | 4.2000e-004 | 4.2000e-004 | | 4.2000e-004 | 4.2000e-004 | 0.0000 | 1.7167 | 1.7167 | 4.9000e-004 | 0.0000 | 1.7290 |
| Total | 5.7000e-004 | 0.0108 | 0.0121 | 2.0000e-005 | | 4.2000e-004 | 4.2000e-004 | | 4.2000e-004 | 4.2000e-004 | 0.0000 | 1.7167 | 1.7167 | 4.9000e-004 | 0.0000 | 1.7290 |

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 | 3.1900e-003 | 5.3000e-004 | 0.0000 | 6.0000e-005 | 0.0000 | 6.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.3854 | 0.3854 | 5.0000e-005 | 0.0000 | 0.3865 |
| Vendor | 1.1000e-004 | 3.7000e-003 | 1.0600e-003 | 0.0000 | 5.0000e-005 | 1.0000e-005 | 6.0000e-005 | 1.0000e-005 | 1.0000e-005 | 2.0000e-005 | 0.0000 | 0.4210 | 0.4210 | 5.0000e-005 | 0.0000 | 0.4222 |
| Worker | 1.6000e-004 | 8.0000e-005 | 9.8000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.0000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.1116 | 0.1116 | 1.0000e-005 | 0.0000 | 0.1117 |
| Total | 3.4000e-004 | 6.9700e-003 | 2.5700e-003 | 0.0000 | 2.1000e-004 | 1.0000e-005 | 2.2000e-004 | 6.0000e-005 | 1.0000e-005 | 7.0000e-005 | 0.0000 | 0.9180 | 0.9180 | 1.1000e-004 | 0.0000 | 0.9204 |

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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 | 3.5200e-003 | 0.0311 | 0.0203 | 4.0000e-005 | | 1.6300e-003 | 1.6300e-003 | | 1.5300e-003 | 1.5300e-003 | 0.0000 | 3.1321 | 3.1321 | 9.1000e-004 | 0.0000 | 3.1548 |
| Total | 3.5200e-003 | 0.0311 | 0.0203 | 4.0000e-005 | | 1.6300e-003 | 1.6300e-003 | | 1.5300e-003 | 1.5300e-003 | 0.0000 | 3.1321 | 3.1321 | 9.1000e-004 | 0.0000 | 3.1548 |

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.2000e-004 | 5.7000e-003 | 9.3000e-004 | 1.0000e-005 | 7.0000e-005 | 1.0000e-005 | 7.0000e-005 | 2.0000e-005 | 1.0000e-005 | 2.0000e-005 | 0.0000 | 0.7176 | 0.7176 | 8.0000e-005 | 0.0000 | 0.7195 |
| Vendor | 1.8000e-004 | 6.5200e-003 | 1.8100e-003 | 1.0000e-005 | 9.0000e-005 | 1.0000e-005 | 1.0000e-004 | 3.0000e-005 | 1.0000e-005 | 4.0000e-005 | 0.0000 | 0.7827 | 0.7827 | 8.0000e-005 | 0.0000 | 0.7846 |
| Worker | 2.7000e-004 | 1.3000e-004 | 1.6200e-003 | 0.0000 | 1.8000e-004 | 0.0000 | 1.9000e-004 | 5.0000e-005 | 0.0000 | 5.0000e-005 | 0.0000 | 0.2009 | 0.2009 | 1.0000e-005 | 0.0000 | 0.2011 |
| Total | 5.7000e-004 | 0.0124 | 4.3600e-003 | 2.0000e-005 | 3.4000e-004 | 2.0000e-005 | 3.6000e-004 | 1.0000e-004 | 2.0000e-005 | 1.1000e-004 | 0.0000 | 1.7012 | 1.7012 | 1.7000e-004 | 0.0000 | 1.7052 |

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3.6 Building Construction - 2020

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 | 1.0500e-003 | 0.0200 | 0.0224 | 4.0000e-005 | | 7.8000e-004 | 7.8000e-004 | | 7.8000e-004 | 7.8000e-004 | 0.0000 | 3.1321 | 3.1321 | 9.1000e-004 | 0.0000 | 3.1548 |
| Total | 1.0500e-003 | 0.0200 | 0.0224 | 4.0000e-005 | | 7.8000e-004 | 7.8000e-004 | | 7.8000e-004 | 7.8000e-004 | 0.0000 | 3.1321 | 3.1321 | 9.1000e-004 | 0.0000 | 3.1548 |

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.2000e-004 | 5.7000e-003 | 9.3000e-004 | 1.0000e-005 | 7.0000e-005 | 1.0000e-005 | 7.0000e-005 | 2.0000e-005 | 1.0000e-005 | 2.0000e-005 | 0.0000 | 0.7176 | 0.7176 | 8.0000e-005 | 0.0000 | 0.7195 |
| Vendor | 1.8000e-004 | 6.5200e-003 | 1.8100e-003 | 1.0000e-005 | 9.0000e-005 | 1.0000e-005 | 1.0000e-004 | 3.0000e-005 | 1.0000e-005 | 4.0000e-005 | 0.0000 | 0.7827 | 0.7827 | 8.0000e-005 | 0.0000 | 0.7846 |
| Worker | 2.7000e-004 | 1.3000e-004 | 1.6200e-003 | 0.0000 | 1.8000e-004 | 0.0000 | 1.9000e-004 | 5.0000e-005 | 0.0000 | 5.0000e-005 | 0.0000 | 0.2009 | 0.2009 | 1.0000e-005 | 0.0000 | 0.2011 |
| Total | 5.7000e-004 | 0.0124 | 4.3600e-003 | 2.0000e-005 | 3.4000e-004 | 2.0000e-005 | 3.6000e-004 | 1.0000e-004 | 2.0000e-005 | 1.1000e-004 | 0.0000 | 1.7012 | 1.7012 | 1.7000e-004 | 0.0000 | 1.7052 |

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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 | 1.5600e-003 | 0.0158 | 0.0168 | 2.0000e-005 | | 9.3000e-004 | 9.3000e-004 | | 8.6000e-004 | 8.6000e-004 | 0.0000 | 2.1531 | 2.1531 | 7.0000e-004 | 0.0000 | 2.1705 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 1.5600e-003 | 0.0158 | 0.0168 | 2.0000e-005 | | 9.3000e-004 | 9.3000e-004 | | 8.6000e-004 | 8.6000e-004 | 0.0000 | 2.1531 | 2.1531 | 7.0000e-004 | 0.0000 | 2.1705 |

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|--------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.0000e-005 | 1.0000e-005 | 1.3000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0163 | 0.0163 | 0.0000 | 0.0000 | 0.0163 |
| Total | 2.0000e-005 | 1.0000e-005 | 1.3000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0163 | 0.0163 | 0.0000 | 0.0000 | 0.0163 |

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3.7 Paving - 2020

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 | 6.0000e-004 | 0.0129 | 0.0186 | 2.0000e-005 | | 8.0000e-004 | 8.0000e-004 | | 8.0000e-004 | 8.0000e-004 | 0.0000 | 2.1531 | 2.1531 | 7.0000e-004 | 0.0000 | 2.1705 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 6.0000e-004 | 0.0129 | 0.0186 | 2.0000e-005 | | 8.0000e-004 | 8.0000e-004 | | 8.0000e-004 | 8.0000e-004 | 0.0000 | 2.1531 | 2.1531 | 7.0000e-004 | 0.0000 | 2.1705 |

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|--------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.0000e-005 | 1.0000e-005 | 1.3000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0163 | 0.0163 | 0.0000 | 0.0000 | 0.0163 |
| Total | 2.0000e-005 | 1.0000e-005 | 1.3000e-004 | 0.0000 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0163 | 0.0163 | 0.0000 | 0.0000 | 0.0163 |

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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 | 0.2941 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.8200e-003 | 0.0233 | 0.0293 | 5.0000e-005 | | 1.2500e-003 | 1.2500e-003 | | 1.2400e-003 | 1.2400e-003 | 0.0000 | 4.0285 | 4.0285 | 6.7000e-004 | 0.0000 | 4.0454 |
| Total | 0.2969 | 0.0233 | 0.0293 | 5.0000e-005 | | 1.2500e-003 | 1.2500e-003 | | 1.2400e-003 | 1.2400e-003 | 0.0000 | 4.0285 | 4.0285 | 6.7000e-004 | 0.0000 | 4.0454 |

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.0000e-004 | 4.9500e-003 | 8.1000e-004 | 1.0000e-005 | 4.0000e-005 | 0.0000 | 5.0000e-005 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.6234 | 0.6234 | 7.0000e-005 | 0.0000 | 0.6251 |
| 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 | 9.0000e-005 | 4.0000e-005 | 5.2000e-004 | 0.0000 | 6.0000e-005 | 0.0000 | 6.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0651 | 0.0651 | 0.0000 | 0.0000 | 0.0651 |
| Total | 1.9000e-004 | 4.9900e-003 | 1.3300e-003 | 1.0000e-005 | 1.0000e-004 | 0.0000 | 1.1000e-004 | 3.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.6885 | 0.6885 | 7.0000e-005 | 0.0000 | 0.6902 |

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3.8 Architectural Coating - 2020

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 | 0.2941 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.0100e-003 | 0.0230 | 0.0311 | 5.0000e-005 | | 8.0000e-004 | 8.0000e-004 | | 8.0000e-004 | 8.0000e-004 | 0.0000 | 4.0285 | 4.0285 | 6.7000e-004 | 0.0000 | 4.0454 |
| Total | 0.2951 | 0.0230 | 0.0311 | 5.0000e-005 | | 8.0000e-004 | 8.0000e-004 | | 8.0000e-004 | 8.0000e-004 | 0.0000 | 4.0285 | 4.0285 | 6.7000e-004 | 0.0000 | 4.0454 |

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.0000e-004 | 4.9500e-003 | 8.1000e-004 | 1.0000e-005 | 4.0000e-005 | 0.0000 | 5.0000e-005 | 1.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.6234 | 0.6234 | 7.0000e-005 | 0.0000 | 0.6251 |
| 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 | 9.0000e-005 | 4.0000e-005 | 5.2000e-004 | 0.0000 | 6.0000e-005 | 0.0000 | 6.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0651 | 0.0651 | 0.0000 | 0.0000 | 0.0651 |
| Total | 1.9000e-004 | 4.9900e-003 | 1.3300e-003 | 1.0000e-005 | 1.0000e-004 | 0.0000 | 1.1000e-004 | 3.0000e-005 | 0.0000 | 4.0000e-005 | 0.0000 | 0.6885 | 0.6885 | 7.0000e-005 | 0.0000 | 0.6902 |

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|---------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0224 | 0.0955 | 0.2710 | 9.1000e-004 | 0.0818 | 7.8000e-004 | 0.0826 | 0.0219 | 7.3000e-004 | 0.0226 | 0.0000 | 83.1219 | 83.1219 | 2.8500e-003 | 0.0000 | 83.1931 |
| Unmitigated | 0.0224 | 0.0955 | 0.2710 | 9.1000e-004 | 0.0818 | 7.8000e-004 | 0.0826 | 0.0219 | 7.3000e-004 | 0.0226 | 0.0000 | 83.1219 | 83.1219 | 2.8500e-003 | 0.0000 | 83.1931 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|----------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Junior College (2Yr) | 111.10 | 45.65 | 4.95 | 219,888 | 219,888 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 111.10 | 45.65 | 4.95 | 219,888 | 219,888 |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|----------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Junior College (2Yr) | 9.50 | 7.30 | 7.30 | 6.40 | 88.60 | 5.00 | 92 | 7 | 1 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

4.4 Fleet Mix

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| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Junior College (2Yr) | 0.607897 | 0.037434 | 0.184004 | 0.107261 | 0.014919 | 0.004991 | 0.012447 | 0.020659 | 0.002115 | 0.001554 | 0.005334 | 0.000623 | 0.000761 |
| Parking Lot | 0.607897 | 0.037434 | 0.184004 | 0.107261 | 0.014919 | 0.004991 | 0.012447 | 0.020659 | 0.002115 | 0.001554 | 0.005334 | 0.000623 | 0.000761 |

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-------------|---------|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 84.2385 | 84.2385 | 8.4200e-003 | 1.7400e-003 | 84.9685 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 84.2385 | 84.2385 | 8.4200e-003 | 1.7400e-003 | 84.9685 |
| NaturalGas Mitigated | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |
| NaturalGas Unmitigated | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |

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5.2 Energy by Land Use - NaturalGas

Unmitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|----------------------|----------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Junior College (2Yr) | 1.21495e+006 | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |

Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|----------------------|----------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Junior College (2Yr) | 1.21495e+006 | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 6.5500e-003 | 0.0596 | 0.0500 | 3.6000e-004 | | 4.5300e-003 | 4.5300e-003 | | 4.5300e-003 | 4.5300e-003 | 0.0000 | 64.8344 | 64.8344 | 1.2400e-003 | 1.1900e-003 | 65.2196 |

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5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------|-----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kWh/yr | MT/yr | | | |
| Junior College (2Yr) | 628100 | 82.6214 | 8.2600e-003 | 1.7100e-003 | 83.3374 |
| Parking Lot | 12293.4 | 1.6171 | 1.6000e-004 | 3.0000e-005 | 1.6311 |
| Total | | 84.2385 | 8.4200e-003 | 1.7400e-003 | 84.9685 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------|-----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kWh/yr | MT/yr | | | |
| Junior College (2Yr) | 628100 | 82.6214 | 8.2600e-003 | 1.7100e-003 | 83.3374 |
| Parking Lot | 12293.4 | 1.6171 | 1.6000e-004 | 3.0000e-005 | 1.6311 |
| Total | | 84.2385 | 8.4200e-003 | 1.7400e-003 | 84.9685 |

6.0 Area Detail

6.1 Mitigation Measures Area

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| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|---------|-------------|-------------|--------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-------------|-------------|-------------|--------|-------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |
| Unmitigated | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-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 | 0.0294 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.2171 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.2000e-004 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |
| Total | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |

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6.2 Area by SubCategory

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 | 0.0294 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.2171 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.2000e-004 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |
| Total | 0.2467 | 2.0000e-005 | 2.3200e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 4.4900e-003 | 4.4900e-003 | 1.0000e-005 | 0.0000 | 4.7800e-003 |

7.0 Water Detail

7.1 Mitigation Measures Water

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| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|-------------|-------------|--------|
| Category | MT/yr | | | |
| Mitigated | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |
| Unmitigated | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------|--------------------|---------------|--------------------|--------------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Junior College (2Yr) | 2.6977 / 4.21947 | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |

Carpenters Training Center Morgan Hill TAC - Santa Clara County, Annual

7.2 Water by Land Use

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------|--------------------|---------------|--------------------|--------------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Junior College (2Yr) | 2.6977 / 4.21947 | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 4.8172 | 3.6700e-003 | 2.1600e-003 | 5.5514 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|---------|
| | MT/yr | | | |
| Mitigated | 14.5139 | 0.8577 | 0.0000 | 35.9575 |
| Unmitigated | 14.5139 | 0.8577 | 0.0000 | 35.9575 |

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8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------|----------------|----------------|---------------|---------------|----------------|
| Land Use | tons | MT/yr | | | |
| Junior College (2Yr) | 71.5 | 14.5139 | 0.8577 | 0.0000 | 35.9575 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 14.5139 | 0.8577 | 0.0000 | 35.9575 |

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------|----------------|----------------|---------------|---------------|----------------|
| Land Use | tons | MT/yr | | | |
| Junior College (2Yr) | 71.5 | 14.5139 | 0.8577 | 0.0000 | 35.9575 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 14.5139 | 0.8577 | 0.0000 | 35.9575 |

9.0 Operational Offroad

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

Carpenters Training Center Morgan Hill TAC - Santa Clara County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

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

11.0 Vegetation

Attachment 3: Construction Health Risk Assessment Madrone Carpenters Training Center, Morgan Hill, CA

DPM Emissions and Modeling Emission Rates

| Construction Year | Activity | DPM (ton/year) | Area Source | DPM Emissions | | | Modeled Area (m ²) | DPM Emission Rate (g/s/m ²) |
|----------------------|--------------|-------------------|----------------|---------------|---------|----------|--------------------------------------|--|
| | | | | (lb/yr) | (lb/hr) | (g/s) | | |
| 2019-2020 | Construction | 0.0147 | CON_DPM | 29.5 | 0.00897 | 1.13E-03 | 19,303 | 5.86E-08 |

Construction Hours
 hr/day = 9 (7:30am - 4:30pm)
 days/yr = 365
 hours/year = 3285

PM2.5 Fugitive Dust Emissions for Modeling

| Construction Year | Activity | Area Source | Area (ton/year) | PM2.5 Emissions | | | Modeled Area (m ²) | PM2.5 Emission Rate (g/s/m ²) |
|----------------------|--------------|----------------|--------------------|-----------------|---------|----------|--------------------------------------|--|
| | | | | (lb/yr) | (lb/hr) | (g/s) | | |
| 2019-2020 | Construction | CON_FUG | 0.00927 | 18.5 | 0.00564 | 7.11E-04 | 19,303 | 3.68E-08 |

Construction Hours
 hr/day = 9 (7:30am - 4:30pm)
 days/yr = 365
 hours/year = 3285

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

| Construction Year | Activity | DPM (ton/year) | Area Source | DPM Emissions | | | Modeled Area (m ²) | DPM Emission Rate (g/s/m ²) |
|----------------------|--------------|-------------------|----------------|---------------|---------|----------|--------------------------------------|--|
| | | | | (lb/yr) | (lb/hr) | (g/s) | | |
| 2019-2020 | Construction | 0.00903 | CON_DPM | 18.1 | 0.00550 | 6.93E-04 | 19,303 | 3.59E-08 |

Construction Hours
 hr/day = 9 (7:30am - 4:30pm)
 days/yr = 365
 hours/year = 3285

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

| Construction Year | Activity | Area Source | Area (ton/year) | PM2.5 Emissions | | | Modeled Area (m ²) | PM2.5 Emission Rate (g/s/m ²) |
|----------------------|--------------|----------------|--------------------|-----------------|---------|----------|--------------------------------------|--|
| | | | | (lb/yr) | (lb/hr) | (g/s) | | |
| 2019-2020 | Construction | CON_FUG | 0.00228 | 4.6 | 0.00139 | 1.75E-04 | 19,303 | 9.06E-09 |

Construction Hours
 hr/day = 9 (7:30am - 4:30pm)
 days/yr = 365
 hours/year = 3285

Madrone Carpenters Training Center, Morgan Hill, CA - Construction Health Impact Summary

Maximum Impacts at 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/Child | Adult | | |
| | 2019-2020 | 0.0783 | 0.1167 | 13.9 | 0.2 | 0.016 |

Maximum Impacts at 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/Child | Adult | | |
| | 2019-2020 | 0.0480 | 0.0287 | 8.5 | 0.1 | 0.010 |

Madrone Carpenters Training Center, Morgan Hill, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

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

Where: CPF = Cancer potency factor (mg/kg-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) | Maximum | |
|------------------------------------|---------------------------|------------|-------------------------------------|--------|------------------------|--|------------------------------|--------|------------------------|---------------------------------|----------------|-------------|
| | | | DPM Conc (ug/m3) | | Age Sensitivity Factor | | Modeled | | Age Sensitivity Factor | | Fugitive PM2.5 | Total PM2.5 |
| | | | Year | Annual | | | Year | Annual | | | | |
| | | | | | Year | | | | Annual | | Year | Annual |
| 0 | 0.25 | -0.25 - 0* | 2019-2020 | 0.0783 | 10 | 1.06 | 2019-2020 | 0.0783 | - | - | - | |
| 1 | 1 | 0 - 1 | 2019-2020 | 0.0783 | 10 | 12.86 | 2019-2020 | 0.0783 | 1 | 0.22 | 0.1167 | |
| 2 | 1 | 1 - 2 | | | 10 | 0.00 | | | 1 | 0.00 | | |
| 3 | 1 | 2 - 3 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 4 | 1 | 3 - 4 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 5 | 1 | 4 - 5 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 6 | 1 | 5 - 6 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 7 | 1 | 6 - 7 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 8 | 1 | 7 - 8 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 9 | 1 | 8 - 9 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 10 | 1 | 9 - 10 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 11 | 1 | 10 - 11 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 12 | 1 | 11 - 12 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 13 | 1 | 12 - 13 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 14 | 1 | 13 - 14 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 15 | 1 | 14 - 15 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 16 | 1 | 15 - 16 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 17 | 1 | 16-17 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 18 | 1 | 17-18 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 19 | 1 | 18-19 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 20 | 1 | 19-20 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 21 | 1 | 20-21 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 22 | 1 | 21-22 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 23 | 1 | 22-23 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 24 | 1 | 23-24 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 25 | 1 | 24-25 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 26 | 1 | 25-26 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 27 | 1 | 26-27 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 28 | 1 | 27-28 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 29 | 1 | 28-29 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 30 | 1 | 29-30 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| Total Increased Cancer Risk | | | | | | 13.9 | | | | 0.22 | | |

* Third trimester of pregnancy

**Madrone Carpenters Training Center, Morgan Hill, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height**

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

Where: CPF = Cancer potency factor (mg/kg-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

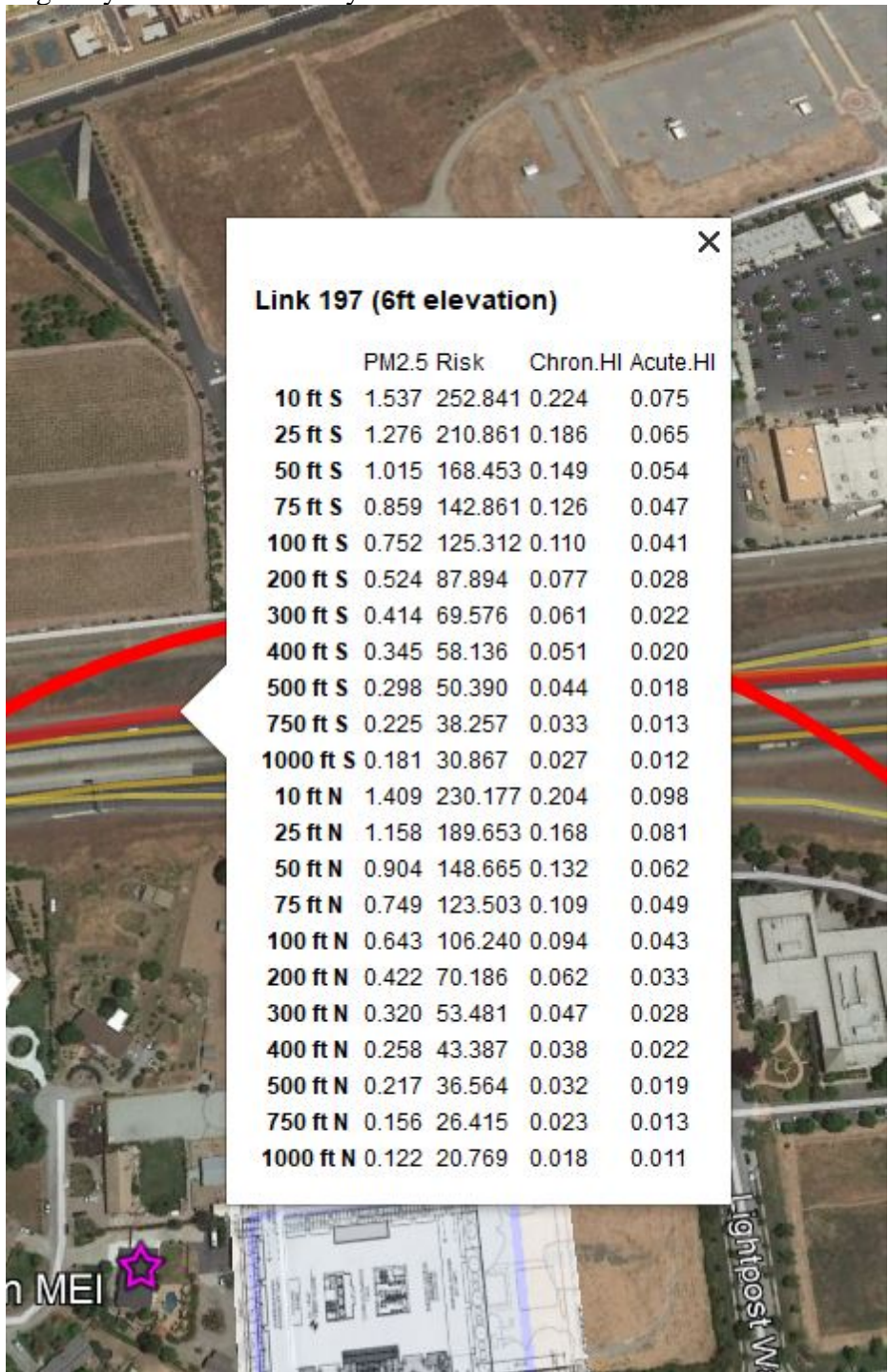
Construction Cancer Risk by Year - Maximum Impact Receptor Location

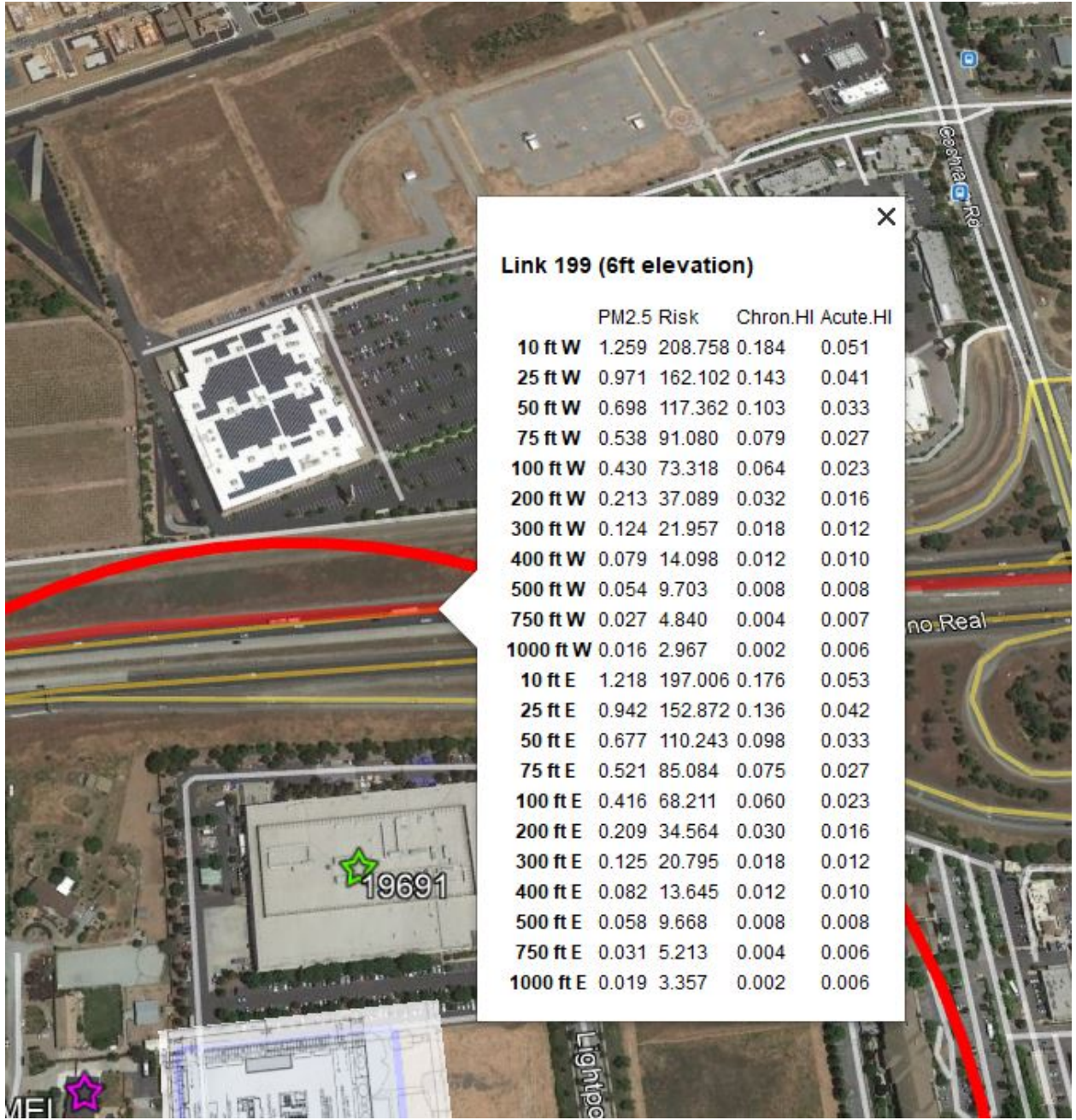
| Exposure Year | Exposure Duration (years) | Age | Infant/Child - Exposure Information | | Age Sensitivity Factor | Infant/Child Cancer Risk (per million) | Adult - Exposure Information | | Age Sensitivity Factor | Adult Cancer Risk (per million) | Maximum | |
|------------------------------------|---------------------------|------------|-------------------------------------|--------|------------------------|--|------------------------------|--------|------------------------|---------------------------------|----------------|-------------|
| | | | DPM Conc (ug/m3) | | | | Modeled | | | | Fugitive PM2.5 | Total PM2.5 |
| | | | Year | Annual | | | Year | Annual | | | | |
| 0 | 0.25 | -0.25 - 0* | 2019-2020 | 0.0480 | 10 | 0.65 | 2019-2020 | 0.0480 | - | - | | |
| 1 | 1 | 0 - 1 | 2019-2020 | 0.0480 | 10 | 7.88 | 2019-2020 | 0.0480 | 1 | 0.14 | 0.0287 | 0.0767 |
| 2 | 1 | 1 - 2 | | | 10 | 0.00 | | | 1 | 0.00 | | |
| 3 | 1 | 2 - 3 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 4 | 1 | 3 - 4 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 5 | 1 | 4 - 5 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 6 | 1 | 5 - 6 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 7 | 1 | 6 - 7 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 8 | 1 | 7 - 8 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 9 | 1 | 8 - 9 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 10 | 1 | 9 - 10 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 11 | 1 | 10 - 11 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 12 | 1 | 11 - 12 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 13 | 1 | 12 - 13 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 14 | 1 | 13 - 14 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 15 | 1 | 14 - 15 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 16 | 1 | 15 - 16 | | | 3 | 0.00 | | | 1 | 0.00 | | |
| 17 | 1 | 16-17 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 18 | 1 | 17-18 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 19 | 1 | 18-19 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 20 | 1 | 19-20 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 21 | 1 | 20-21 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 22 | 1 | 21-22 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 23 | 1 | 22-23 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 24 | 1 | 23-24 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 25 | 1 | 24-25 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 26 | 1 | 25-26 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 27 | 1 | 26-27 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 28 | 1 | 27-28 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 29 | 1 | 28-29 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| 30 | 1 | 29-30 | | | 1 | 0.00 | | | 1 | 0.00 | | |
| Total Increased Cancer Risk | | | | | | 8.53 | | | | 0.14 | | |

* Third trimester of pregnancy

Attachment 4: Cumulative Source Risk Screening Calculations

Highway 101 Risk Summary





Link 199 (6ft elevation)

| | PM2.5 Risk | Chron.HI | Acute.HI | |
|------------------|------------|----------|----------|-------|
| 10 ft W | 1.259 | 208.758 | 0.184 | 0.051 |
| 25 ft W | 0.971 | 162.102 | 0.143 | 0.041 |
| 50 ft W | 0.698 | 117.362 | 0.103 | 0.033 |
| 75 ft W | 0.538 | 91.080 | 0.079 | 0.027 |
| 100 ft W | 0.430 | 73.318 | 0.064 | 0.023 |
| 200 ft W | 0.213 | 37.089 | 0.032 | 0.016 |
| 300 ft W | 0.124 | 21.957 | 0.018 | 0.012 |
| 400 ft W | 0.079 | 14.098 | 0.012 | 0.010 |
| 500 ft W | 0.054 | 9.703 | 0.008 | 0.008 |
| 750 ft W | 0.027 | 4.840 | 0.004 | 0.007 |
| 1000 ft W | 0.016 | 2.967 | 0.002 | 0.006 |
| 10 ft E | 1.218 | 197.006 | 0.176 | 0.053 |
| 25 ft E | 0.942 | 152.872 | 0.136 | 0.042 |
| 50 ft E | 0.677 | 110.243 | 0.098 | 0.033 |
| 75 ft E | 0.521 | 85.084 | 0.075 | 0.027 |
| 100 ft E | 0.416 | 68.211 | 0.060 | 0.023 |
| 200 ft E | 0.209 | 34.564 | 0.030 | 0.016 |
| 300 ft E | 0.125 | 20.795 | 0.018 | 0.012 |
| 400 ft E | 0.082 | 13.645 | 0.012 | 0.010 |
| 500 ft E | 0.058 | 9.668 | 0.008 | 0.008 |
| 750 ft E | 0.031 | 5.213 | 0.004 | 0.006 |
| 1000 ft E | 0.019 | 3.357 | 0.002 | 0.006 |



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 | 3/15/2019 |
| Contact Name | Casey Divine |
| Affiliation | Illingworth & Rodkin, Inc. |
| Phone | 707-794-0400 x103 |
| Email | cdivine@illingworthrodkin.com |
| Project Name | Madrone Carpenters Training |
| Address | 18640 Madrone Parkway |
| City | Morgan Hill |
| County | Santa Clara |
| Type (residential, commercial, mixed use, industrial, etc.) | Training warehouse |
| Project Size (# of units or building square feet) | 150 students, 55,000sf |
| Comments: | |

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

1. Complete all the contact and project information requested in **Table A**. Incomplete forms will not be processed. Please include a project site map.
2. Download and install the free program Google Earth, <http://www.google.com/earth/download/ge/>, and then download the county specific Google Earth stationary source application files from the District's website, <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>. The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.
3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.
4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.
5. List the stationary source information in **Table B** blue section only.
6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRS) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRS values are presented, these values have already been modeled and cannot be adjusted further.
7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

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

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

Table B: Google Earth data

| Distance from Receptor (feet) or MEI ¹ | Facility Name | Address | Plant No. | Cancer Risk ² | Hazard Risk ² | PM _{2.5} ² | Source No. ³ | Type of Source ⁴ | Fuel Code ⁵ | Status/Comments |
|---|--------------------------------|-----------------------|-----------|--------------------------|--------------------------|--------------------------------|-------------------------|-----------------------------|------------------------|---|
| TBD | Flextronics International, USA | 925 Lightpost Way | 19691 | — | 0.00 | 0 | 1 | Wipe Cleaning | | New Plant No. 23703 NXEDGE MH, LLC, Emissions File Attached |
| TBD | Comcast-Morgan Hill | 18665 Madrone Parkway | 15543 | 1.112 | 0.0044 | 0.0013 | | | | Demolished |

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 (HRS) was completed for the source, the application number will be listed here.
7. The date that the HRS was completed.
8. Engineer who completed the HRS. For District purposes only.
9. All HRS completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRS "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
 - a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
 - b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic
 - c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
 - d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period.
 - 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

Plant #23703 Emissions File

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
CRITERIA POLLUTANTS - ABATED
MOST RECENT P/O APPROVED (2019)

Printed: MAR 18, 2019

NxEdge MH, LLC (P# 23703)

| S# | SOURCE NAME | SOURCE CODE | PM | EMISSIONS IN LBS/DAY | | | CO |
|----------|---------------|-------------|----|----------------------|-----|-----|----|
| | | | | ORG | NOx | S02 | |
| MATERIAL | THROUGHPUT | DATE | | | | | |
| ----- | | | | | | | |
| 1 | Wipe Cleaning | | | | | | |
| | | SF01A157 | .0 | 9.6 | .0 | .0 | .0 |
| | | SF01B455 | .0 | .0 | .0 | .0 | .0 |