# APPENDIX C
# DRAFT TECHNICAL MEMORANDUM: AIR QUALITY AND GREENHOUSE GAS IMPACT ANALYSIS

# Memo

1230 Columbia Street, Suite 440
San Diego, CA 92101
619.219-8000

**Date:** February 14, 2020
**To:** Brian Mooney, RICK Engineering
**From:** Alyssa Way, Poonam Boparai, and Andrew Martin
**Subject:** City of Murrieta General Plan Update
Revised Draft Technical Memorandum: Air Quality and Greenhouse Gas Impact Analysis

## ORGANIZATION OF THIS MEMORANDUM

This memorandum consists of four main sections:

- Section 1: Introduction
- Section 2: Project Description
- Section 3: Air Quality Analysis
- Section 4: Greenhouse Gas (GHG) Analysis

# 1 INTRODUCTION

This technical memorandum identifies and analyzes the potential air quality and GHG environmental impacts associated with the City of Murrieta proposed General Plan Update (GPU) and Climate Action Plan Update (CAP Update) (project). The information and analysis in this document are organized in accordance with the checklist in Appendix G of the California Environmental Quality Act (CEQA) Guidelines and current State and local guidance. Information from the City of Murrieta's 2011 General Plan Environmental Impact Report (EIR) are incorporated into this memorandum by reference.

This memorandum includes a discussion of existing air quality conditions and an analysis of potential short-term and long-term air quality impacts that could result from buildout of the GPU. This memorandum also includes State, federal, and local regulations that have been adopted or updated since the 2011 General Plan Environmental Impact Report (EIR) was certified. The method of analysis for short-term construction, long-term regional (operational), local mobile-source, and toxic air emissions is consistent with the recommendations of the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), and South Coast Air Quality Management District (SCAQMD). Additionally, this memorandum includes a discussion of existing GHG conditions and a GHG impact analysis from implementation of the project. The method of analysis for GHG emissions is consistent with recommendations of CARB.

# 2 PROJECT DESCRIPTION

The City of Murrieta is located in southeastern Riverside County and is comprised of 26,852 acres (41.96 square miles) of which 21,511 acres (33.61 square miles) is located within the City limits and 5,341 acres (8.34 square miles) is located within the City's Sphere of Influence. In 2009, the City of Murrieta initiated a comprehensive update of the General Plan which was adopted on July 19, 2011 and included a Climate

Action Plan. In 2018, the City issued a request for proposals (RFP) to prepare a GPU, a CAP Update and the preparation of a Supplemental Environmental Impact Report (SEIR). The main goals of the GPU include:

- Additions, deletions, or modifications to the 2011 General Plan goals, policies, exhibits and implementation to address changes in State law enacted since the adoption of the 2011 General Plan.
- Update of General Plan development projections to the year 2035.
- Update of the Land Use Element with a new land use designation (Innovation) and a revised mix and location of land use designations in six key areas as shown on General Plan Land Use Policy Map (Exhibit 2-2).
- Elimination of focus areas and incorporation of focus area policies/goals into other sections of the GPU, as appropriate.
- Prepare a CAP Update identifying actions the City will take to achieve its fair share of GHG reductions by 2030 and 2035, consistent with State laws, policy, goals, and the latest climate change science.

With these intended goals the GPU proposes an addition 1,572 dwelling units and reduce 2,405,601 square feet of non-residential land uses from those proposed in the 2011 General Plan.

# 3 AIR QUALITY

## 3.1 REGULATORY SETTING

The following State, federal, and local regulations were not provided or have been updated since certification of the 2011 General Plan EIR.

### 3.1.1 Federal

EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

#### Criteria Air Pollutants

The CAA required EPA to establish the NAAQS. As shown in Table 1, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), particulate matter with an aerodynamic diameter of 10 microns or less ($PM_{10}$), particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$), and lead. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also requires each state to prepare a State Implementation Plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. Individual SIPs are modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

**Table 1 National and California Ambient Air Quality Standards**

| Pollutant | Averaging Time | California (CAAQS)[a,b] | National (NAAQS)[c] | |
|---|---|---|---|---|
| | | | Primary[b,d] | Secondary[b,e] |
| Ozone | 1-hour | 0.09 ppm (180 µg/m$^3$) | –[e] | Same as primary standard |
| | 8-hour | 0.070 ppm (137 µg/m$^3$) | 0.070 ppm (147 µg/m$^3$) | |
| Carbon monoxide (CO) | 1-hour | 20 ppm (23 mg/m$^3$) | 35 ppm (40 mg/m$^3$) | Same as primary standard |
| | 8-hour | 9 ppm[f] (10 mg/m$^3$) | 9 ppm (10 mg/m$^3$) | |
| Nitrogen dioxide ($NO_2$) | Annual arithmetic mean | 0.030 ppm (57 µg/m$^3$) | 53 ppb (100 µg/m$^3$) | Same as primary standard |
| | 1-hour | 0.18 ppm (339 µg/m$^3$) | 100 ppb (188 µg/m$^3$) | – |
| Sulfur dioxide ($SO_2$) | 24-hour | 0.04 ppm (105 µg/m$^3$) | – | – |
| | 3-hour | – | – | 0.5 ppm (1300 µg/m$^3$) |
| | 1-hour | 0.25 ppm (655 µg/m$^3$) | 75 ppb (196 µg/m$^3$) | – |
| Respirable particulate matter ($PM_{10}$) | Annual arithmetic mean | 20 µg/m$^3$ | – | Same as primary standard |
| | 24-hour | 50 µg/m$^3$ | 150 µg/m$^3$ | |
| Fine particulate matter ($PM_{2.5}$) | Annual arithmetic mean | 12 µg/m$^3$ | 12.0 µg/m$^3$ | 15.0 µg/m$^3$ |
| | 24-hour | – | 35 µg/m$^3$ | Same as primary standard |
| Lead[f] | Calendar quarter | – | 1.5 µg/m$^3$ | Same as primary standard |
| | 30-Day average | 1.5 µg/m$^3$ | – | – |
| | Rolling 3-Month Average | – | 0.15 µg/m$^3$ | Same as primary standard |
| Hydrogen sulfide | 1-hour | 0.03 ppm (42 µg/m$^3$) | No national standards | |
| Sulfates | 24-hour | 25 µg/m$^3$ | | |
| Vinyl chloride[f] | 24-hour | 0.01 ppm (26 µg/m$^3$) | | |
| Visibility-reducing particulate matter | 8-hour | Extinction of 0.23 per km | | |

Notes: µg/m$^3$ = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million (by volume).

[a] California standards for ozone, carbon monoxide, $SO_2$ (1- and 24-hour), $NO_2$, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[c] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The $PM_{10}$ 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m$^3$ is equal to or less than one. The $PM_{2.5}$ 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

[d] National primary standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[e] National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. This allows for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: EPA 2016 and CARB 2016a

### Toxic Air Contaminants/Hazardous Air Pollutants

Toxic Air Contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs) are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants, for which acceptable levels of exposure can be determined and for which ambient standards have been established (Table 1). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA and CARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum achievable control technology or best available control technology (BACT) for toxics to limit emissions.

## 3.1.2 State

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Hot Spots Act) (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, PM exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate BACT for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

CARB has adopted diesel PM control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 in

comparison to year 2000 (CARB 2000). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

### 3.1.3 Local

#### South Coast Air Quality Management District

SCAQMD is the primary agency responsible for planning to meet NAAQS and CAAQS in the South Coast Air Basin (SCAB). SCAQMD periodically updates the Air Quality Management Plan (AQMP) which is submitted to be included in the State SIP (SCAQMD 2017). The SIP is a compilation of plans and regulations that govern how the region and State will comply with the CAA requirements to attain and maintain the national ambient air quality standards (NAAQS) for ozone and $PM_{2.5}$.

**Criteria Air Pollutants**

SCAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria pollutants and TACs, and also make recommendations for conducting air quality analyses. After SCAQMD guidelines have been consulted and the air quality impacts of a project have been assessed, the lead agency's analysis undergoes a review by SCAQMD who submits comments and suggestions to the lead agency for incorporation into the environmental document.

All projects under the GPU would be subject to adopted SCAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of land uses anticipated under the GPU may include but are not limited to the following:

- **Regulation II, Rule 201**: Permit to Construct. A person shall not build, erect, install, alter, or replace any equipment permit unit, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants without first obtaining written authorization for such construction from the Executive Officer. A permit to construct shall remain in effect until the permit to operate the equipment for which the application was filed as granted or denied, or the application is canceled.

- **Regulation II, Rule 203**: Permit to Operate. A person shall not operate or use any equipment permit unit, the use of which may cause the issuance of air contaminants, or the use of which may reduce or control the issuance of air contaminants, without first obtaining a written permit to operate from the Executive Officer.

- **Regulation IV, Rule 402**: Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.

- **Regulation IV, Rule 403**: Fugitive Dust. The developer or contractor is required to implement Best Available Control Measures for all sources, and all forms of visible PM are prohibited from crossing any property line.

- **Regulation XI, Rule 1113**: Architectural Coatings. The manufacturer, distributor, and end user of architectural and industrial maintenance coatings to reduce volatile organic compounds (VOC) emissions

from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

- **Regulation XII, Rule 1186**: $PM_{10}$ Emissions from Paved and Unpaved Roads, and Livestock Operations. The purpose of this rule is to reduce the amount of PM entrained in the ambient air as a result of vehicular travel on paved and unpaved public roads.

- **Regulation XIII, Rule 1301**: New Source Review, General. The purpose of this rule is to set forth pre-construction review requirements for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the NAAQS, and that future economic growth within the SCAQMD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors.

- **Regulation XIV, Rule 1401**: New Source Review of Toxic Air Contaminants. The rule specifies limits for maximum individual cancer risk, cancer burden, and noncancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants.

- **Regulation XIV, Rule 1403**: Asbestos Emissions from Demolition/Renovation Activities. The owner or operator of any demolition or renovation activity is required to have an asbestos study performed prior to demolition and to provide notification to SCAQMD prior to commencing demolition activities.

#### Toxic Air Contaminants

At the local level, air districts may adopt and enforce CARB control measures for TACs. Under SCAQMD Rule 201 ("Permit to Construct"), Rule 203 ("Permit to Operate"), Rule 1301 ("New Source Review, General"), Rule 1401 ("New Source Review of Toxic Air Contaminants"), all sources that possess the potential to emit TACs are required to obtain permits from SCAQMD. Permits may be granted to operations the emit TACs if they are constructed and operated in accordance with applicable regulations, including New Source Review standards and air toxics control measures. SCAQMD limits emissions and public exposure to TACs through a number of programs. SCAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants.

#### Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and SCAQMD. SCAQMD's Rule 402 (Nuisance) regulates odorous emissions.

## 3.2 ENVIRONMENTAL SETTING

The project site is located in the SCAB. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. Existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources. However, regional air quality concentration data which has been updated since the 2011 General Plan EIR is discussed below.

### 3.2.1 Criteria Air Pollutants

Concentrations of criteria air pollutants are used to indicate the quality of the ambient air. Ozone, $PM_{10}$, and $PM_{2.5}$ are the criteria air pollutants of primary concern in this analysis due to their nonattainment status with respect to the applicable NAAQS and/or CAAQS in the SCAB. Brief descriptions of these key criteria air pollutants in the SCAB and their health effects are provided below. Emission source types and health effects are summarized in Table 2. The attainment status of each criteria air pollutant with respect to the NAAQS and the CAAQS in the SCAB is provided in Table 3.

**Table 2 Sources and Health Effects of Criteria Air Pollutants**

| Pollutant | Sources | Acute[1] Health Effects | Chronic[2] Health Effects |
|---|---|---|---|
| Ozone | Secondary pollutant resulting from reaction of ROG and $NO_X$ in presence of sunlight. ROG emissions result from incomplete combustion and evaporation of chemical solvents and fuels; $NO_X$ results from the combustion of fuels | increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation | permeability of respiratory epithelia, possibility of permanent lung impairment |
| Carbon monoxide (CO) | Incomplete combustion of fuels; motor vehicle exhaust | headache, dizziness, fatigue, nausea, vomiting, death | permanent heart and brain damage |
| Nitrogen dioxide ($NO_2$) | combustion devices; e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines | coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, death | chronic bronchitis, decreased lung function |
| Sulfur dioxide ($SO_2$) | coal and oil combustion, steel mills, refineries, and pulp and paper mills | Irritation of upper respiratory tract, increased asthma symptoms | Insufficient evidence linking $SO_2$ exposure to chronic health impacts |
| Respirable particulate matter ($PM_{10}$), Fine particulate matter ($PM_{2.5}$) | fugitive dust, soot, smoke, mobile and stationary sources, construction, fires and natural windblown dust, and formation in the atmosphere by condensation and/or transformation of $SO_2$ and ROG | breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death | alterations to the immune system, carcinogenesis |
| Lead | metal processing | reproductive/ developmental effects (fetuses and children) | numerous effects including neurological, endocrine, and cardiovascular effects |

Notes: $NO_X$ = oxides of nitrogen; ROG = reactive organic gases.

[1] "Acute" refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations.

[2] "Chronic" refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.

Sources: EPA 2016

**Table 2 Attainment Status Designations for South Coast Air Basin**

| Pollutant | National Ambient Air Quality Standard | California Ambient Air Quality Standard |
|---|---|---|
| Ozone | Nonattainment (1-hour) Classification=Extreme | Nonattainment (1-hour) |
| | Nonattainment (8-hour)[1] Classification=Extreme | Nonattainment (8-hour) |
| | Nonattainment (8-hour)[2] Classification=Extreme | |
| Respirable particulate matter ($PM_{10}$) | Attainment (24-hour) Classification = Maintenance | Nonattainment (24-hour) |
| | | Nonattainment (Annual) |
| Fine particulate matter ($PM_{2.5}$) | Nonattainment (24-hour) Classification = Serious | (No State Standard for 24-Hour) |
| | Nonattainment (Annual)[3] | Nonattainment (Annual) |
| | Nonattainment (Annual)[4] Classification = Serious | |
| Carbon monoxide (CO) | Attainment (1-hour) Classification=Maintenance | Attainment (1-hour) |
| | Attainment (8-hour) Classification=Maintenance | Attainment (8-hour) |
| Nitrogen dioxide ($NO_2$) | Unclassified/Attainment (1-hour) | Attainment (1-hour) |
| | Attainment (Annual) Classification=Maintenance | Attainment (Annual) |
| Sulfur dioxide ($SO_2$) | (Designation Pending) (1-Hour) | Unclassifiable/Attainment (1-hour) |
| | | Unclassifiable/Attainment (24-hour) |
| Lead (Particulate) | Nonattainment (3-month rolling avg.) Classification=Partial | Attainment (30-day average) |
| Hydrogen Sulfide | No Federal Standard | Attainment (1-hour) |
| Sulfates | | Unclassifiable (24-hour) |

Notes:
[1] 1997 Standard.
[2] 2008 Standard.
[3] 1997 Standard.
[4] 2012 Standard.
Source: SCAQMD 2016

## 3.2.2 Monitoring Station Data and Attainment Designations

Criteria air pollutant concentrations are measured at several monitoring stations in the SCAB. The Lake Elsinore, Perris, and Riverside-Rubidoux's average air quality data best represents the project area with recent data for ozone, $PM_{10}$, and $PM_{2.5}$. Table 4 summarizes the air quality data from the most recent three years (2016–2018).

Both CARB and EPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants (attainment designations are summarized in Table 3 above).

**Table 4 Summary of Annual Data on Ambient Air Quality (2016-2018)**

| | 2016 | 2017 | 2018 |
|---|---|---|---|
| **Ozone** | | | |
| Maximum concentration (1-hr/8-hr avg, ppm) | 0.124/0.093 | 0.121/0.098 | 0.116/0.095 |
| Number of days state standard exceeded (1-hr/8-hr) | 15/* | 23/* | 16/* |
| Number of days national standard exceeded (1-hr/8-hr) | 0/44 | 0/54 | 0/30 |

**Table 4 Summary of Annual Data on Ambient Air Quality (2016-2018)**

| | 2016 | 2017 | 2018 |
|---|---|---|---|
| **Fine Particulate Matter ($PM_{2.5}$)** | | | |
| Maximum concentration (24-hour µg/m³) | 51.5 | 50.3 | 66.3 |
| Number of days national standard exceeded (24-hour measured) | 5 | 7 | 3 |
| **Respirable Particulate Matter ($PM_{10}$)** | | | |
| Maximum concentration (µg/m³) | 76.0 | 75.4 | 64.4 |
| Number of days state standard exceeded | 5 | 11 | 2 |
| Number of days national standard exceeded | 0 | 0 | 0 |

Notes: µg/m³ = micrograms per cubic meter; ppm = parts per million; * = Data not available; Ozone ($O_3$) measurements from Lake Elsinore-W Flint Street Monitoring Station. Fine particulate matter ($PM_{2.5}$) from the Riverside-Rubidoux Monitoring Station. Respirable particulate matter ($PM_{10}$) measurements form Perris Monitoring Station.

Source: CARB 2019

## TOXIC AIR CONTAMINANTS

According to the *California Almanac of Emissions and Air Quality* (CARB 2013), the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's $PM_{10}$ database, ambient $PM_{10}$ monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. Overall, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased since 1990 (CARB 2013).

## ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity. Odor sources of concern can include wastewater treatment plants, sanitary landfills, composting facilities, recycling

facilities, petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, and food packaging plants.

## EXISTING EMISSIONS SOURCES

The 2011 General Plan EIR summarized emissions of criteria air pollutants and ozone precursors within the City for various source categories in 2008. Table 5, *2011 General Plan Summary of 2035 Estimated Emissions Inventory for the City of Murrieta*, summarizes the emissions for area, mobile, and indirect source categories. According to the emissions inventory, mobile sources account for the greatest contribution to the estimate annual average emissions of air pollutants.

**Table 5 2011 General Plan Summary of 2035 Estimated Emissions Inventory for the City of Murrieta**

| Source Type | Estimated Annual Average Emissions (Tons/Year) | | | | | |
|---|---|---|---|---|---|---|
| | ROG | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| Area Sources | | | | | | |
| Natural Gas Combustion | 14.23 | 188.52 | 109.40 | 0.00 | 0.35 | 0.35 |
| Landscaping Equipment | 48.10 | 3.02 | 267.22 | 0.01 | 0.71 | 0.70 |
| Consumer Products | 416.47 | - | - | - | - | - |
| Architectural Coatings | 78.67 | - | - | - | - | - |
| Subtotal (Area Sources) | 557.47 | 191.54 | 376.62 | 0.01 | 1.06 | 1.05 |
| Indirect Sources | | | | | | |
| Energy Consumption | 4.47 | 514.00 | 0.09 | 53.70 | 17.90 | - |
| Water Conveyance | 0.11 | 12.60 | 2.20 | 1.32 | 0.44 | - |
| Subtotal (Indirect Sources) | 4.58 | 526.60 | 2.29 | 55.02 | 18.34 | 0.00 |
| Mobile Sources (by land use category) | | | | | | |
| Single Family Housing | 425.40 | 594.36 | 5,090.88 | 5.76 | 992.57 | 193.26 |
| Multifamily Housing | 115.60 | 156.97 | 1,344.52 | 1.52 | 262.14 | 51.04 |
| High School [civic/institutional] | 18.14 | 26.37 | 217.64 | 0.25 | 43.98 | 8.55 |
| City Park | 8.81 | 8.80 | 72.34 | 0.08 | 14.66 | 2.85 |
| Strip Mall | 918.75 | 1,400.62 | 11,486.63 | 13.38 | 2,331.08 | 453.11 |
| Professional Office | 246.53 | 354.02 | 2,972.14 | 3.43 | 593.68 | 115.48 |
| Office Park [business park] | 180.87 | 560.13 | 2,200.81 | 2.53 | 437.33 | 85.09 |
| General Light Industrial | 15.17 | 21.00 | 177.83 | 0.20 | 35.31 | 6.87 |
| Subtotal (Mobile Sources) | 1,929.27 | 3,122.27 | 23,562.79 | 27.15 | 4,710.75 | 916.25 |
| TOTAL | 2,491.32 | 3,840.41 | 23,941.70 | 82.18 | 4,730.15 | 917.30 |

Notes: Tons/year = tons per year; ROG = reactive organic gases; $NO_X$ = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur dioxide; $PM_{10}$ = respirable particulate matter; $PM_{2.5}$ = fine particulate matter

Source: City of Murrieta 2011

## SENSITIVE RECEPTORS

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience

adverse effects from unhealthful concentrations of air pollutants. Sensitive receptors mentioned in the 2011 General Plan EIR are consistent with GPU.

## 3.3 IMPACTS AND MITIGATION MEAURES

### 3.3.1 Methodology

Regional and local criteria air pollutant emissions and associated impacts, as well as impacts from TACs, CO concentrations, and odors were assessed in accordance with SCAQMD-recommended methodologies. Attachment A provides modeling and emissions calculations according to SCAQMD guidelines. Potential impacts from construction were assessed qualitatively as the specific duration, frequency, and intensity of construction activities that could occur under the GPU are unknown at this time. Operations of the GPU land use changes were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program, as recommended by SCAQMD. Plan-specific information, where available, and default values according to land use type and location in CalEEMod were used to model the net change of operational emissions. Mobile-source emissions were also modeled in CalEEMod using the net vehicle miles traveled (VMT) as provided in the VMT analysis provided in the *Vehicle Miles Travel (VMT) Analysis* by VRPA Technologies, Inc in June 2019. Emissions associated with consumption of energy (electricity and natural gas), the use of consumer products, and landscape maintenance activities were estimated using the applicable modules in CalEEMod. Operational emissions from all sources were estimated for full buildout of the GPU which is anticipated to occur by 2035.

TACs and mobile source CO impacts were assessed qualitatively, using the screening criteria set forth by SCAQMD and CARB and results from the VMT Analysis by VRPA Technologies, Inc.

The assessment of odor-related impacts is based on the types of odor sources associated with the land uses that would be developed under the project and their location relative to existing off-site sensitive receptors.

### 3.3.2 Thresholds of Significance

The Initial Study Environmental Checklist, Appendix G of the CEQA Guidelines, was used as the significance criteria in the 2011 General Plan EIR. Since the 2011 General Plan EIR was certified, Appendix G has been updated. A project would have a significant effect on the environment if it would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable State or federal ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.?
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Appendix G of the CEQA Guidelines states that the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make these determinations. SCAQMD's mass daily significance thresholds for both construction and operation of the project are provided in the 2011 General Plan EIR (Table 5.5-5, page 5.5-14) and have not changed for the

purpose of this analysis. Thus, the air quality impact analysis for the GPU relies on SCAQMD's significance criteria.

### 3.3.3 Project Impacts

#### Impact AQ -1 Construction emissions of criteria pollutants and precursors

The level of significance in the 2011 General Plan EIR for short-term construction-related impacts was potentially significant. Because the 2011 General Plan EIR was at a program level, project specific construction activities and data were unable to be determined. The 2011 General Plan EIR concluded that because individual projects have the potential to result in emissions of criteria air pollutants and precursors from activities, the construction of the proposed land uses under the 2011 General Plan could contribute to nonattainment designations.

The 2011 General Plan includes the following goals and policies that would help reduce individual project construction emissions to achieve clean air standards. Air Quality Element Goal AQ-3 addresses the reduction of emissions during construction activities. Policies AQ-3.1 through AQ-3.3 would require construction activities to adhere to SCAQMD regulations, ensure best management practices are implemented, and require construction equipment to comply with CARB vehicle standards. Additionally, Policy AQ-3.4 requires projects to prepare and implement Construction Management Plans, which shall include dust control measures, vehicle emission standards, among other emission-reducing control measures. These policies would require construction related emissions for individual projects to be reduced to a level below daily emissions standards established by the SCAQMD. Goal AQ-7 would also reduce fugitive dust emissions throughout the City. Policies AQ-7.2 through AQ-7.4 would minimize fugitive dust from construction through collaborative efforts and would consider the suspension of all grading operations at project sites when the source represents a public nuisance or potential safety hazard.

The GPU would allow for development of an additional 1,572 residential units, beyond those considered in the 2011 General Plan. Construction of these 1,572 new residential units under the proposed GPU would result in a net increase in emissions beyond those analyzed for the 2011 General Plan. Construction-related activities associated with the implementation of the proposed residential units would generate emissions of ROG, $NO_X$, $SO_X$, CO, $PM_{10}$, and $PM_{2.5}$ from site preparation; use of off-road construction equipment; material handling; on-road vehicle trips; architectural coating; paving; and other construction-related activities.

Because of the program-level nature of the GPU, specific information about individual land use developments, and the duration, frequency, and intensity of construction, and potential overlap between construction activities is not available at this time. Therefore, construction-related emissions due to the implementation of the GPU cannot be accurately quantified, and such an analysis would be considered speculative. In addition, the GPU would reduce 2,405,601 square feet of non-residential development in the City. From time of adoption of the GPU to buildout year 2035, construction projects would occur throughout the City and would be dependent upon factors such as the nature and quantity of projects initiated by developers and approvals by the City, thus the timing, rate, and level of future construction emissions emitted cannot be precisely anticipated under the general provisions of the GPU.

As stated in the 2011 General Plan EIR Section 5.5.4, all goals and policies related to reducing criteria air pollutants and precursors would be required to be addressed in all construction projects within the City (page 5.5-16). However, even with implementation of the 2011 General Plan goals and policies, the GPU construction projects could have the potential to exceed SCAQMD construction thresholds. Ambient air quality standards are established to be protective of public health and if exceeded could expose receptors to adverse health impacts. Because implementation of the project has the potential to exceed SCAQMD's construction thresholds, the GPU could exacerbate or interfere with the region's ability to attain the health-

based standards. Impact AQ-1 would be potentially significant for the proposed GPU, consistent with the potentially significant impact identified in the 2011 General Plan EIR. Compared to the construction-related air quality impacts that would occur in the 2011 General Plan, the GPU would not result in a new significant impact or a substantial increase in the severity of the previously identified significant impact.

## Mitigation Measures

The following mitigation measures were recommended by SCAQMD in their comment letter on the *Notice of Preparation of a Draft Supplemental Environmental Impact Report for the Proposed Murrieta General Plan Update and Draft Supplemental Environmental Impact Report* on March 12, 2019. The City shall require implementation of the following mitigation measures in addition to the goals and policies from the 2011 General Plan.

- *Require the use of Tier 4 emissions standards or better for off-road diesel-powered construction equipment of 50 horsepower or greater. To ensure that Tier 4 construction equipment or better will be used during the Proposed Project's construction, SCAQMD staff recommends that the Lead Agency include this requirement in applicable bid documents, purchase orders, and contracts. Successful contractor(s) must demonstrate the ability to supply the compliant construction equipment for use prior to any ground disturbing and construction activities. A copy of each unit's certified tier specification or model year specification and California Air Resources Board (CARB) or SCAQMD operating permit (if applicable) shall be available upon request at the time of mobilization of each applicable unit of equipment. Additionally, the Lead Agency should require periodic reporting and provision of written construction documents by construction contractor(s) to ensure compliance and conduct regular inspections to the maximum extent feasible to ensure compliance.*

- *Require zero-emissions or near-zero emission on-road haul trucks such as heavy-duty trucks with natural gas engines that meet the CARB's adopted optional NOx emissions standard at 0.02 grams per brake horsepower-hour (g/bhp-hr), if and when feasible. At a minimum, require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year trucks (e.g., material delivery trucks and soil import/export) that meet CARB's 2010 engine emissions standards at 0.01 g/bhp-hr of particulate matter (PM) and 0.20 g/bhp-hr of NOx emissions or newer, cleaner trucks3. The Lead Agency should include this requirement in applicable bid documents, purchase orders, and contracts. Operators shall maintain records of all trucks associated with project construction to document that each truck used meets these emission standards, and make the records available for inspection. The Lead Agency should conduct regular inspections to the maximum extent feasible to ensure compliance.*

- *Suspend all on-site construction activities when wind speeds (as instantaneous gusts) exceed 25 miles per hour.*

- *All trucks hauling dirt, sand, soil or other loose materials are to be covered, or should maintain at least two feet of freeboard in accordance with California Vehicle Code Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).*

- *Enter into applicable bid documents, purchase orders, and contracts to notify all construction vendors, contractors, and/or haul truck operators that vehicle and construction equipment idling time will be limited to no longer than five minutes, consistent with the CARB's policy4. For any idling that is expected to take longer than five minutes, the engine should be shut off. Notify construction vendors, contractors, and/or haul truck operators of these idling requirements at the time that the purchase order is issued and again when vehicles enter the Proposed Project site. To further ensure that drivers*

*understand the vehicle idling requirement, post signs at the Proposed Project site, where appropriate, stating that idling longer than five minutes is not permitted.*

- *Have truck routes clearly marked with trailblazer signs, so that trucks will not enter residential areas.*

- *Limit the daily number of trucks allowed at the Proposed Project to levels analyzed in the CEQA document. If higher daily truck volumes are anticipated to visit the site, the Lead Agency should commit to re-evaluating the Proposed Project through the CEQA process prior to allowing this land use or higher activity level.*

### Impact AQ -2 Direct operational emissions of criteria pollutants

The 2011 General Plan EIR concluded that long-term operational emissions for the 2011 General Plan would cause a potentially significant air quality impact. It was determined that with the exception of some projects under the 2011 General Plan, others may potentially exceed SCAQMD's project specific significance thresholds. The overall magnitude of all operational emissions at build out of the 2011 General Plan would contribute to nonattainment designations in the SCAB.

The 2011 General Plan provides goals and policies that help reduce emissions from stationary sources that would be applicable to the land use changes under the GPU, in addition those discussed below. Goal AQ-1 of the proposed General Plan Air Quality Element would improve air quality within the City through participation in regional and local efforts. Policies AQ-1.1 through AQ1.5 would achieve this goal by updating City regulations, working with State, federal, and local agencies (including Southern California Association of Governments [SCAG]), reviewing and updating City regulations and requirements based on new technology, helping implement SB 375, and providing public education on clean products. Additionally, Goal AQ-2 addresses land use and air quality relationships. Specifically, Policies AQ-2.1 through AQ-2.5 consider the location of sensitive receptors near pollution sources and freeways, and considering these impacts when making siting decisions, and consult the CARB handbook for siting sensitive uses at safe distances from polluters. Goal AQ-6 aims to minimize stationary source pollution. Policies AQ-6.1 through AQ-6.4 would ensure that industrial and commercial uses adhere to SCAQMD rules and regulations, encourage the use of new technology, and promote smart land use planning to ensure sensitive receptors are not subject to harmful emissions. Policies AQ-6.5 through AQ-6.7 would also ensure indoor air quality is improved for residential uses near high levels of pollution and would employ strategies to mitigate air quality impacts.

In addition, the 2011 General Plan provides goals and policies that address reducing emissions from mobile sources. Goal AQ-4 and Policies AQ-4.1 through AQ-4.4 would reduce vehicle miles traveled (VMT) and associated mobile source emissions through job creation and the improvement of the jobs/housing balance within the City, as well as the encouragement of a mix of housing types located near job opportunities. Goal AQ-5 aims to improve air quality through an efficient circulation system, reduced traffic congestion, and reduced VMT. Policy AQ-5.1 encourages employers to implement transportation demand management (TDM) measures (i.e., transit subsidies, bicycle facilities, telecommuting, etc.). Policies CIR-5.9 through CIR-5.12, and CIR-6.1 through CIR-6.12 of the proposed General Plan 2035 Circulation Element promote mass transit, high-speed rail, and nonmotorized transit facilities. Policies AQ-5.4 through AQ-5.7 encourage the reduction of air emissions through the use of low emission technology, trip reduction plans, and reduced emission equipment and vehicles. Circulation and Land Use Element Policies CIR-1.4, LU-8.1 (Land Use Element), and LU-8.2 would improve signal coordination at major intersections, encourage mixed-use development, and promote non-motorized transportation options (i.e., bicycle and pedestrian).

The GPU provides revised goals and policies that are applicable to reducing operations-related emissions. Land Use policies LU-7.9 through 7.10 provides residents with access to other land uses. Policies LU-17.3 through 17.6 encourage mixed-use development that provide various sources to the community. Circulation policy CIR-6.15 encourage adoption of VMT measurement for CEQA evaluations.

Operation of the proposed 1,572 residential units would result in the generation of long-term operational emissions of ROG, $NO_X$, $PM_{10}$, $PM_{2.5}$, $SO_X$ and CO. The non-residential development excluded from the 2011 General Plan would avoid the generation of long-term operational emissions. The addition of residential units would serve to increase emissions beyond those analyzed in the 2011 General Plan EIR, while the reduction in allowable non-residential development would reduce emissions from the same analysis. In addition to the land use changes, citywide VMT was assessed to determine the change in VMT from the two General Plans. The net 2035 citywide VMT under the 2011 General Plan compared to the GPU, provided by VRPA Technologies, Inc., was estimated to be a decrease of 93,028 miles. This decrease in VMT is due to the proposed increase in residential units to be oriented toward employment areas, reducing the VMT to and from residences and places of employment.

Additional sources of operational emissions evaluated for this study include the use of electricity and natural gas; landscape maintenance equipment such as mowers and leaf blowers; application of architectural coatings as part of regular maintenance; and the use of various consumer produce such as cleaning chemicals that would also generate emissions of ROG. Because building energy efficiency is unknown for build out year 2035, energy emissions were modeled conservatively based on 2019 Title 24 standards. Table 6 summarizes the net change in maximum daily operations-related emissions of criteria air pollutants and precursors from the land uses proposed under the GPU.

**Table 6 Net emissions of General Plan Update**

| Source Type | Estimated Maximum Daily Emissions (lb/day) | | | | | |
|---|---|---|---|---|---|---|
| | ROG | $NO_x$ | CO | $SO_X$ | $PM_{10}$ | $PM_{2.5}$ |
| General Plan Update: Net Residential Unit Increase | | | | | | |
| Area | 38 | 1 | 129 | <1 | 1 | 1 |
| Energy | <1 | 4 | 2 | <1 | <1 | <1 |
| Subtotal | 38 | 6 | 131 | <1 | 1 | 1 |
| General Plan Update: Net Non-Residential Land Use Decrease | | | | | | |
| Area | -54 | - <1 | - <1 | - <1 | - <1 | - <1 |
| Energy | -2 | -18 | -15 | – <1 | -1 | -1 |
| Subtotal | -56 | -18 | -15 | - <1 | -1 | -1 |
| General Plan Update: Net Mobile Decrease | | | | | | |
| Subtotal | -10 | -77 | -120 | -1 | -71 | -19 |
| General Plan Update Net TOTAL | **-27** | **-89** | **-4** | **-1** | **-71** | **-19** |
| SCAQMD Thresholds of Significance | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | No | No |

Notes: lb/day = pounds per day; ROG = reactive organic gases; $NO_X$ = oxides of nitrogen; CO = carbon monoxide; $SO_X$ = sulfur dioxide; $PM_{10}$ = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.

Table 6 shows that the GPU would decrease overall citywide emissions relative to overall development under the 2011 General Plan. However, the reduction in emissions would not reduce overall operations emissions to below SCAQMD's significance threshold. Furthermore, the land uses proposed under the GPU with the increase in residential units, decrease in nonresidential square footage, and decrease in VMT would contribute to nonattainment designations.

If the project exceeds SCAQMD's thresholds and contributes to nonattainment designations, it would exacerbate or interfere with the region's ability to attain the health-based standards. Thus, the exposure of

criteria air pollutants that may exceed the NAAQS and CAAQS would exacerbate health impacts. Full buildout of the GPU's land uses would cause emissions to exceed SCAQMD's recommended thresholds, violating air quality standards and would contribute substantially to an existing or projected air quality violation. Because the ambient air quality standards are established to be protective of public health, adverse health impacts to receptors are anticipated due to the project's emissions being above SCAQMD's thresholds. As individual developments anticipated under the GPU are evaluated, potential impacts to nonattainment levels and health risk may be found to not be significant. For this program level analysis, Impact AQ-2 would be potentially significant for the proposed GPU, consistent with the potentially significant impact identified in the 2011 General Plan EIR. Compared to the operations-related air quality impacts that would occur in the 2011 General Plan, the GPU would not result in a new significant impact or a substantial increase in the severity of the previously identified significant impact

## Mitigation Measures

The following mitigation measures were recommended by SCAQMD in their comment letter on the *Notice of Preparation of a Draft Supplemental Environmental Impact Report for the Proposed Murrieta General Plan Update and Draft Supplemental Environmental Impact Report* on March 12, 2019. The City shall require implementation of the following mitigation measures in addition to the goals and policies from the 2011 General Plan and those under the GPU.

- *Provide electric vehicle (EV) Charging Stations (see the discussion below regarding EV charging stations).*

- *Should the Proposed Project generate significant regional emissions, the Lead Agency should require mitigation that requires accelerated phase-in for non-diesel powered trucks. For example, natural gas trucks, including Class 8 HHD trucks, are commercially available today. Natural gas trucks can provide a substantial reduction in health risks, and may be more financially feasible today due to reduced fuel costs compared to diesel. In the Draft SEIR, the Lead Agency should require a phase-in schedule for these cleaner operating trucks to reduce any significant adverse air quality impacts. SCAQMD staff is available to discuss the availability of current and upcoming truck technologies and incentive programs with the Lead Agency.*

- *Trucks that can operate at least partially on electricity have the ability to substantially reduce the significant NOx impacts from this project. Further, trucks that run at least partially on electricity are projected to become available during the life of the project as discussed in the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016-2040 RTP/SCS)[5]. It is important to make this electrical infrastructure available when the project is built so that it is ready when this technology becomes commercially available. The cost of installing electrical charging equipment onsite is significantly cheaper if completed when the project is built compared to retrofitting an existing building. Therefore, SCAQMD staff recommends the Lead Agency require the Proposed Project and other plan areas that allow truck parking to be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug-in. Similar to the City of Los Angeles requirements for all new projects, SCAQMD staff recommends that the Lead Agency require at least 5% of all vehicle parking spaces (including for trucks) include EV charging stations[6]. Further, electrical hookups should be provided at the onsite truck stop for truckers to plug in any onboard auxiliary equipment. At a minimum, electrical panels should be appropriately sized to allow for future expanded use.*
- *Design warehouses or distribution centers such that entrances and exits are such that trucks are not traversing past neighbors or other sensitive receptors.*

- *Design warehouses or distribution centers such that any check-in point for trucks is well inside the site to ensure that there are no trucks queuing outside of the facility.*
- *Design warehouses or distribution centers to ensure that truck traffic within the site is located away from the property line(s) closest to its residential or sensitive receptor neighbors.*
- *Restrict overnight parking in residential areas.*
- *Establish overnight parking within warehouses or distribution centers where trucks can rest overnight.*
- *Establish area(s) within warehouses or distribution centers for repair needs.*
- *Develop, adopt and enforce truck routes to and from warehouses or distribution centers that avoid sensitive receptors, where feasible.*
- *Create a buffer zone of at least 300 meters (roughly 1,000 feet), which can be office space, employee parking, greenbelt, etc. between warehouses or distribution centers and sensitive receptors.*
- *Maximize use of solar energy including solar panels; installing the maximum possible number of solar energy arrays on the building roofs and/or on the Proposed Project site to generate solar energy for the facility.*
- *Maximize the planting of trees in landscaping and parking lots.*
- *Use light colored paving and roofing materials (e.g., "cool" roofs and cool pavements).*
- *Utilize only Energy Star heating, cooling, and lighting devices, and appliances.*
- *Require use of electric or alternatively fueled sweepers with HEPA filters.*
- *Use of water-based or low VOC cleaning products.*

### Impact AQ -3 Expose sensitive receptors to substantial pollutant concentrations

The 2011 General Plan EIR concludes that cumulative exposure to substantial pollutant concentrations is a less than significant impact and the 2011 General Plan includes goals and policies addressing pollutants and sensitive receptor exposure. The exposure of sensitive receptors to TAC emissions from project-generated construction and operational sources is discussed separately below. Diesel PM is the focus of this analysis because it is the TAC of primary concern when evaluating health risk. Although other TACs exist (e.g., benzene, 1,3-butadiene, hexavalent chromium, formaldehyde, methylene chloride), they are primarily associated with industrial operations.

#### Construction

Construction-related activities associated with the project would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment use for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. For construction activity, diesel PM is the primary TAC of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations.

Diesel PM was identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of diesel PM outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003). With regards to exposure of diesel PM, the dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher level of health risk for any exposed receptor. According the California Office of Environmental Health and Assessment's (OEHHA's) 2015 Guidance, exposure of sensitive receptors to TAC emissions should be based on a 30-year exposure period for estimating cancer risk at the maximum exposed individual resident (MEIR), with 9- and 70-year exposure periods at the MEIR as supplemental information. Furthermore, 70-year exposure period is required for estimating cancer burden or providing an estimate of population-wide risk (OEHHA 2015:8-1).

The use of off-road heavy-duty diesel equipment would be limited to the individual construction project under the GPU. Because construction details for individual project under the GPU are unknown, this analysis is unable to determine the dose of exposure to any one sensitive receptor. Construction projects are required to comply with the goals and policies under the 2011 General Plan, GPU, and SCAQMD standards and therefore no new or worse impacts would result from construction projects.

**Operations**

The operational TAC analysis evaluates new sources associated with the GPU build out (e.g., increased vehicular traffic, stationary or commercial land uses) and the placement of new sensitive receptors in close proximity to existing TAC sources. The analysis is based on available guidance from CARB and SCAQMD shown below in Table 7.

**Table 7 California Air Resources Board Recommendations on Siting New Sensitive Land Uses Such as Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities**

| Source Category | Advisory Recommendations |
|---|---|
| Freeways and High-Traffic Roads | ◢ Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day |
| Distribution Centers | ◢ Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with TRUs operating per day, or where TRU unit operations exceed 300 hours per week).<br>◢ Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points |
| Rail Yards | ◢ Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard.<br>◢ Within one mile of a rail yard, consider possible siting limitations and mitigation approaches |
| Ports | ◢ Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks. |
| Refineries | ◢ Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation. |
| Chrome Platers | ◢ Avoid siting new sensitive land uses within 1,000 feet of a chrome plater |
| Dry Cleaners Using Perchloroethylene | ◢ Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district.<br>◢ Do not site new sensitive land uses in the same building with perc dry cleaning operations. |
| Gasoline Dispensing Facilities | ◢ Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities. |

Notes: CARB = California Air Resources Board; TRU = transport refrigeration unit; vehicles/day = vehicles per day

Source: CARB 2005

Operation of new land uses could generate new sources of TACs from commercial land uses (e.g., gasoline dispensing facilities and dry cleaners). Land uses that have the potential to generate stationary source emissions would be required to obtain a permit from SCAQMD. If the facility has the potential to generate health risks above established risk levels, facilities are required to distribute public notifications to both residential, non-residential, and parents of children attending school within the area of impact and develop and implement a risk reduction plan.

In addition, the GPU would result in a decrease in 93,028 vehicle trips distributed over the City roadways and intersections. In accordance with CARB's Air Quality and Land Use Handbook, high volume roads and freeways are the primary sources of TACs within urban areas. Freeways or urban roads experiencing 100,000 or more vehicles/day could expose sensitive receptors to adverse health risks. It is likely under this project that freeways and roads within the project area would not exceed 100,000 vehicles/day. Because the GPU would result in a substantial decrease in trips to the City's roadway network, a substantial decrease in health risk levels associated with vehicular traffic, exposing existing and future planned land uses to

decreased TAC levels. There would be no additional or worse impacts than those determined in the 2011 General Plan.

**Conclusion**

Implementation of the goals and policies included in the 2011 General Plan, SCAQMD's permit requirements for stationary sources, and the reduction in future citywide VMT relative to the 2011 General Plan would reduce the health risk to sensitive receptors. Impact AQ-3 would be less than significant for the proposed GPU, consistent with the less than significant impact identified in the 2011 General Plan EIR. The GPU would not result in a new significant impact or a substantial increase in the severity of the previously identified significant impact.

### Impact AQ-4 Create objectionable odors

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the affected receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generate citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose a substantial number of people to objectionable odors would be deemed to have a significant impact.

Odors evaluated in the 2011 General Plan were determined to have a less than significant impact due to the land uses proposed not being significant odor generators. Goals and policies provided in the 2011 General Plan would help reduce exposure of odors to sensitive receptors through land use decisions under the GPU. Policies AQ-2.1 through AQ-2.5 address siting sensitive receptors away from emission sources. Policy AQ-6.1 encourage the use of advanced technology to reduce criteria pollutants from sources.

Though construction project details under the GPU are unknown, odors from the use of heavy-duty diesel equipment, and the laying of asphalt during project-related construction activities would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance.

The proposed land uses under the GPU are not considered significant odor generators that would adversely affect sensitive receptors during operations; all land uses would contain uses that are common in the surrounding areas. Operation of new development would be subject to goals and policies in the General Plan and shall be subject to SCAQMD Rule 402. In addition, future citywide VMT under the GPU would decrease relative to future citywide VMT under the 2011 General Plan, which would not increase and could reduce odors associated with on-road vehicles. Therefore, implementation of the GPU would not result in exposure of a substantial number of people to objectionable odors. Impact AQ-4 would be less than significant for the proposed GPU, consistent with the less than significant impact identified in the 2011 General Plan EIR. The GPU would not result in a new significant impact or a substantial increase in the severity of the previously identified significant impact.

### Impact AQ-5 Mobile-source CO concentrations

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, vehicle speed, and traffic delay. A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under stable meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels adversely affecting nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. CO is a pollutant of localized concern and, therefore, analyzed at the local level.

Construction activities are rarely a cause of localized CO impacts because they do not typically result in substantial traffic increases at any one location.

As discussed in the SCAQMD AQMP and seen in Table 3, the SCAB is in attainment for both 1-hour and 8-hour CO concentrations under CAAQS and NAAQS. As the AQMP notes, the SCAB gained attainment status for CO concentrations in 2007 and has remained in attainment status for this pollutant since that time. In 2015, SCAQMD measured CO concentrations at 25 locations in the SCAB as well as two locations that measured near-road CO concentrations. Maximum CO concentrations in Los Angeles County were 3.3 ppm for the 8-hour averaging time in 2015. This concentration is well below the NAAQS 1-hour and 8-hour standards (i.e.,35 ppm and 9 ppm, respectively; SCAQMD 2017). As part of the AQMP, SCAQMD also modeled future pollutant emissions within the SCAB based on population growth rates, current air quality regulations and other key factors for the year 2031. Modeling results found that although on-road mobile emissions continue to be a major contributor of CO and $NO_X$ emissions, current rules and regulations on mobile source emissions will result in a decrease in CO concentrations within the SCAB by 2031 and will not impact the attainment status for CO (SCAQMD 2017:3-19).

The 2011 General Plan determined that there would be a less than significant impact to increase mobile-source CO concentrations with its adoption. It was concluded that at full build out, no intersection in the City would experience an average daily traffic (ADT) volume that would exceed 100,000 vehicles per day under CARBS's guidance. In addition, the 2011 goal and polices CIR-1.2, CIR-1.4, CIR-1.6, and CIR-1.8 would ensure intersections would optimize traffic flow through the City and reduce traffic queuing.

The *City of Murrieta Focused General Plan Update Traffic Impact Analysis* report by Iteris, Inc. analyzed key intersections and roadways under conditions of the GPU. Table 12 in the report determined that no intersection capacity or roadway would exceed 100,000 vehicle per day. Impact AQ-5 would be less than significant for the proposed GPU, consistent with the less than significant impact identified in the 2011 General Plan EIR. The GPU would not result in a new significant impact or a substantial increase in the severity of the previously identified significant impact.

### Impact AQ-6 Conflict with or obstruct applicable air quality plan

The 2011 General Plan EIR identified a less than significant impact regarding its consistency with other regional plans due to its goals and policies falling under the same objectives as other plans. The two criteria required by SCAQMD for evaluation of plan consistency analyzed in the 2011 General Plan are relevant to this study. The first criterion requires projects to forecast emissions contributing to air quality violations and attainment. As mentioned in the 2011 General Plan, all future development is required to comply with SCAQMD regulations and permitting requirements. In addition, all developments would be subject to the goals and policies in the 2011 General Plan to help reduce air quality impacts. Because project-level construction details are not provided for this plan-level analysis, construction emissions are not able to be analyzed at the level of detail needed to determine whether they would contribute to an air quality violation. Operational emissions were determined to be less than significant and would not contribute to an air quality violation or deter attainment. As previously stated, individual project construction and operational project under the GPU would be required to comply with its goals and policies and SCAQMD regulations.

Under the second criterion, SCAQMD considers a project to be consistent with existing air quality plans and other relevant documents if the project's land use changes and growth rates remain consistent with those in the existing plan. Projects that do not increase dwelling unit density, vehicle trips, or VMT above the projected rates included in relevant air quality plans are not considered to exceed this threshold (SCAQMD 1993). The most relevant and applicable air quality plans for the SCAB are SCAQMD's 2016 AQMP and SCAG's 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Regional air quality emissions projections used in the SIP and the AQMP are based on the growth projections included in the RTP/SCS. Therefore, projects that are consistent with these growth projections would also be consistent with regional air quality emissions projections and attainment status regarding CAAQS and NAAQS.

The GPU includes changes to the land uses upon which the AQMP and 2016 RTP/SCS were based on and therefore would result in an inconsistency between the plans. Although these plans are inconsistent, the focus of the GPU is to create a job to housing balance that would create jobs and reduce VMT within the City which is consistent with the goals of the RTP/SCS plan. Like the 2011 General Plan, the GPU includes several updated goals and policies within the Circulation, Land Use, Air Quality, Conservation, and Safety Elements pertaining to regional mobility, reduced vehicle trips, energy efficiency, smart land use patterns, and emergency management, which are consistent with SCAG's RTP goals and Compass Growth Visioning Regional Growth Principles. Furthermore, as described in Impact AQ-2 operational emissions would be lower under the GPU relative to the 2011 General Plan and would reduce the contribution towards an air quality violation or attainment. Additionally, all future development is required to comply with the goals and policies that would reduce air quality impacts. Impact AQ-6 would be less than significant for the proposed GPU, consistent with the less than significant impact identified in the 2011 General Plan EIR. The GPU would not result in a new significant impact or a substantial increase in the severity of the previously identified significant impact.

### Cumulative Impacts

Construction-related emissions from future development under the GPU, similar to those discussed in the 2011 General Plan EIR, may be "cumulatively considerable" as they have the potential to be combined with the physical impacts of other past, present, or other probable future projects in the SCAB. If multiple large construction projects occur simultaneously in close proximity, it is possible that impacts associated with air quality violations could result from development of the project.

As described under Impact AQ-2, the proposed development under the GPU would reduce future operational emissions of criteria pollutants relative to the future emissions under the 2011 General Plan. However, the overall magnitude of operational emissions at full build out of the GPU would contribute to the adverse air quality conditions in the SCAB. Because operations emissions could contribute to nonattainment designations and adverse health impacts to sensitive receptors, the land uses under the GPU would be cumulatively considerable.

Exposure of TAC to sensitive receptors would be cumulative in nature if the project, in combination with other development, would expose sensitive receptors to a substantial concentration of TACs that would significant increase cancer risk, or acute or chronic health risks. As discussed under Impact AQ-3, although individual construction project details are unknown, the 2011 General Plan, GPU, and SCAQMD standards would avoid sensitive receptor exposure to TACs. In addition, the GPU land uses would result in a decrease in mobile source emissions and traffic concentrations would not exceed TAC thresholds. Therefore, no additional cumulative impacts would occur.

Impacts would be cumulative in nature if the project, in combination with cumulative development, would violate or contribute substantially to localized concentrations of CO that exceed the CAAQS or NAAQS for CO. Impact AQ-5 concludes that long-term operational mobile-source emissions of CO does not have the potential to violate or contribute substantially to local concentrations of CO.

As discussed in the 2011 General Plan EIR, cumulative development would not result in potentially significant impacts in terms of objectionable odors affecting a substantial number of receptors due to the type of land uses proposed.

Construction and operations of the land uses proposed under the GPU are required to comply with the goals and policies in the 2011 General Plan, GPU, and SCAQMD standards for reducing impacts from criterial air pollutants and overall cumulative impacts. The cumulative impacts of the GPU would be consistent with the cumulative impact conclusions identified in the 2011 General Plan EIR. The GPU would not result in a new significant impact or a substantial increase in the severity of a previously identified significant cumulative impact.

# 4 GREENHOUSE GASES

## 4.1 REGULATORY SETTING

### 4.1.1 Federal

In October 2012, EPA and the National Highway Traffic Safety Administration, on behalf of the U.S. Department of Transportation, issued final rules to further reduce GHG emissions and improve corporate average fuel economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond (77 Federal Register [FR] 62624). These rules would increase fuel economy to the equivalent of 54.5 miles per gallon, limiting vehicle emissions to 163 grams of $CO_2$ per mile for the fleet of cars and light-duty trucks by model year 2025 (77 FR 62630). However, on April 2, 2018, the EPA administrator announced a final determination that the current standards are not appropriate and should be revised. It is not yet known what revisions will be adopted or when they will be implemented (EPA 2018).

In 2015, EPA unveiled the Clean Power Plan. The purpose of the plan was to reduce carbon dioxide ($CO_2$) emissions from electrical power generation by 32 percent relative to 2005 levels within 25 years. EPA is proposing to repeal the Clean Power Plan because of a change to the legal interpretation of Section 111(d) of the federal Clean Air Act, on which the Clean Power Plan was based. The comment period on the proposed repeal closed April 26, 2018.

In June 2019, the EPA, under authority of the Clean Air Act section 111(d), issued the Affordable Clean Energy (ACE) rule which provides guidance to states on establishing emissions performance standards for coal-fired electric generating units (EGUs). Under this rule, states are required to submit plans to the EPA which demonstrate the use of specifically listed retrofit technologies and operating practices to achieve carbon dioxide reduction though heat rate improvement (HRI). HRI is a measurement of power plant efficiency that EPA determined as part of this rulemaking to be the best system of emissions reduction for carbon dioxide generated from coal fired EGUs (EPA 2019).

### 4.1.2 State

#### Statewide GHG Emission Targets and the Climate Change Scoping Plan

*California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan), prepared by CARB, outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and "substantially advance toward our 2050 climate goals" (CARB 2017:1, 3, 5, 20, 25–26). It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste). CARB and other State agencies also released the 2030 Draft Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal of Executive Order B-55-18. The Plan furthers the State's goals through improving the carbon sequestration potential of the State's natural and working lands through improved soil health and forest management strategies.

The State has also passed more detailed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below.

#### Cap-and-Trade Program

CARB administers the State's cap-and-trade program, which covers GHG emission sources that emit more than 25,000 metric tons of $CO_2$ equivalent per year ($MTCO_2e$/year), such as refineries, power plants, and

industrial facilities. This market-based approach to reducing GHG emissions provides economic incentives for achieving GHG emission reductions.

### Transportation-Related Standards and Regulations

As part of its Advanced Clean Cars program, CARB established more stringent GHG emission standards and fuel efficiency standards for fossil fuel–powered on-road vehicles. In addition, the program's zero-emission vehicle regulation requires battery, fuel cell, and plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025 (CARB 2016b:15). By 2025, when the rules will be fully implemented, GHG emissions from the statewide fleet of new cars and light-duty trucks will be reduced by 34 percent and cars will emit 75 percent less smog-forming pollution than the statewide fleet in 2016 (CARB 2016c:1).

Executive Order B-48-18, signed into law in January 2018, requires all State entities to work with the private sector to have at least 5 million zero-emission vehicles on the road by 2030, as well as 200 hydrogen fueling stations and 250,000 electric vehicle–charging stations installed by 2025. It specifies that 10,000 of these charging stations must be direct-current fast chargers.

### Legislation Associated with Electricity Generation

The State has passed legislation requiring the increasing use of renewables to produce electricity for consumers. California utilities are required to generate 33 percent of their electricity from renewables by 2020 (SB X1-2 of 2011); 52 percent by 2027 (SB 100 of 2018); 60 percent by 2030 (also SB 100 of 2018); and 100 percent by 2045 (also SB 100 of 2018).

### Building Energy Efficiency Standards (Title 24, Part 6)

The current California Energy Code (2016) is scheduled to be replaced by the 2019 standards on January 1, 2020. The 2019 California Energy Code will require builders to use more energy-efficient building technologies for compliance with increased restrictions on allowable energy use. Additionally, new residential units will be required to include solar panels, sized to offset the estimated electrical requirements of each unit (CCR, Title 24, Part 6, Section 150.1[c]14). CEC estimates that the combination of required energy-efficiency features and mandatory solar panels in the 2019 California Energy Code will result in new residential buildings that use 53 percent less energy than those designed to meet the 2016 California Energy Code. CEC also estimates that the 2019 California Energy Code will result in new commercial buildings that use 30 percent less energy than those designed to meet the 2016 standards, primarily through the transition to high-efficiency lighting (CEC 2018).

## 4.2 ENVIRONMENTAL SETTING

## 4.2.1 Greenhouse Gas Emissions and Climate Change

### PHYSICAL SCIENTIFIC BASIS OF GREENHOUSE GAS AND CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected toward space. The absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are $CO_2$, methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-generated emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropomorphic increase in GHG concentrations and other anthropomorphic forcing (IPCC 2014:5). This warming is observable considering the 20 hottest years ever recorded occurred within the past thirty years (McKibben 2018).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately one day), GHGs have long atmospheric lifetimes (one year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the lifetime of any GHG molecule depends on multiple variables and cannot be determined with perfect certainty, it is understood that more $CO_2$ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused $CO_2$ emissions, approximately 55 percent are estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused $CO_2$ emissions remain stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs in the atmosphere responsible for climate change is not precisely known, but it is enormous. No single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or microclimates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

## GREENHOUSE GAS EMISSION SOURCES AND SINKS

As discussed previously, GHG emissions are attributable in large part to human activities. $CO_2$ is the main byproduct of fossil fuel combustion. Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices, organic material decomposition in landfills, and the burning of forest fires (Black et al. 2017). Nitrous oxide emissions are largely attributable to agricultural practices and soil management. $CO_2$ sinks, or reservoirs, include vegetation and the ocean, which absorb $CO_2$ through sequestration and dissolution ($CO_2$ dissolving into the water); respectively, these are the two of the most common processes for removing $CO_2$ from the atmosphere.

The total GHG inventory for California in 2016 was 429 million metric tons of $CO_2$ equivalents ($MMTCO_2e$) (California Air Resources Board [CARB] 2018a). This is less than the 2020 target of 431 $MMTCO_2e$ equal to the inventory for 1990 (CARB 2018b:1). Table 8 summarizes the statewide GHG inventory for California.

**Table 8 Statewide GHG Emissions by Economic Sector**

| Sector | Percent |
|---|---|
| Transportation | 41 |
| Industrial | 23 |
| Electricity generation (in state) | 10 |
| Electricity generation (imports) | 6 |
| Agriculture | 8 |
| Residential | 7 |
| Commercial | 5 |
| Not specified | <1 |

Source: CARB 2018a

## EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

According to the Intergovernmental Panel on Climate Change (IPCC), which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature will increase by 1.5 degrees Celsius (°C) (2.7 degrees Fahrenheit [°F]) by 2040. This 1.5 warming represents a global average indicating that portions of the earth will experience more dramatic warming than others. Oceans, which supports high specific heat, will experience less dramatic warming as compared to continents, particularly in inland regions.

According to *California's Fourth Climate Change Assessment*, if global GHGs are reduced at a moderate rate, California will experience average daily high temperatures that are warmer than the historic average by 2.5 °F from 2006 to 2039, by 4.4 °F from 2040 to 2069, and by 5.6 °F from 2070 to 2100; and if GHG emissions continue at current rates then California will experience average daily high temperatures that are warmer than the historic average by 2.7 °F from 2006 to 2039, by 5.8 °F from 2040 to 2069, and by 8.8 °F from 2070 to 2100 (Governor's Office of Planning and Research [OPR] 2019:23). The potential effects of this warming in California are well documented.

Since its previous climate change assessment in 2012, California has experienced several of the most extreme natural events in its recorded history: a severe drought from 2012-2016, an almost non-existent Sierra Nevada winter snowpack in 2014-2015, increasingly large and severe wildfires, and back-to-back years of the warmest average temperatures (OPR 2019:56). According to CNRA's *Safeguarding California Plan: 2018 Update*, California experienced the driest 4-year statewide precipitation on record from 2012 through 2015; the warmest years on average in 2014, 2015, and 2016; and the smallest and second smallest Sierra snowpack on record in 2015 and 2014 (CNRA 2018:55). In contrast, the northern Sierra Nevada experienced its wettest year on record during the 2016—2017 water year (CNRA 2018:64). The changes in precipitation exacerbate wildfires throughout California through a cycle of high vegetative growth coupled with dry, hot periods which lowers the moisture content of fuel loads. As a result, the frequency, size, and devastation of forest fires increases. In November 2018, the Camp Fire completely destroyed the town of Paradise in Butte County and caused 85 fatalities, becoming the State's deadliest fire in recorded history. Moreover, changes in the intensity of precipitation events following wildfires can also result in devastating landslides. In January 2018 following the Thomas Fire, 0.5 inches of rain fell over just 5 minutes in Santa Barbara causing destructive mudslides formed from the debris and loose soil left behind by the fire. These mudslides resulted in 21 deaths.

As temperatures increase, the amount of precipitation falling as rain rather than snow also increases, which could lead to increased flooding because water that would normally be held in the snowpack of the Sierra Nevada and Cascade Range until spring would flow into the Central Valley during winter rainstorm events. This scenario would place more pressure on California's levee/flood control system (CNRA 2018:190–192).

Temperature increases and changes to historical precipitation patterns will likely affect ecologically productivity. Existing habitats may migrate from climatic changes where possible, and those that lack the ability to retreat will be severely threatened. Altered climatic conditions dramatically endangers the survival of arthropods which could have cascading effects throughout ecosystems (Lister and Garcia 2018). Conversely, a warming climate may support the populations of other insects such as ticks and mosquitos, which transmit diseases harmful to human health such as the Zika virus, West Nile virus, and Lyme disease (European Commission Joint Research Centre 2018).

Changes in temperature, precipitation patterns, extreme weather events, wildfires, and sea-level rise have the potential to threaten transportation and energy infrastructure, crop production, forests and rangelands, and public health (CNRA 2018:64, 116–117, 127; OPR 2019:63). The effects of climate change will also have an indirect adverse impact on the economy as more severe natural disasters cause expensive, physical damage to communities and the State. Additionally, adjusting to the physical changes associated with climate change can produce mental health impacts such as depression and anxiety.

Cal-Adapt is a climate change scenario planning tool developed by the California Energy Commission (CEC) that downscales global climate model data to local and regional resolution under two emissions scenarios. The Representative Concentration Pathway (RCP) 8.5 scenario represents a business-as-usual future emissions scenario, and the RCP 4.5 scenario represents a future with reduced GHG emissions. According to Cal-Adapt, annual average maximum temperatures in the project area are projected to rise by 5.9°F to 10.9°F by 2099, with the low and high ends of the range reflecting the lower and higher emissions increase scenarios (CEC 2019). Annual average minimum temperatures are expected to rise within a similar range.

The project area experienced an annual average high temperature of 73.3°F between 1961 and 1990. Under the RCP 4.5 scenario, the county's annual average high temperature is projected to increase by 5.2°F to 78.5°F by 2050 and increase an additional 0.7°F to 79.2°F by 2099 (CEC 2019). Under the RCP 8.5 scenario, the county's annual average high temperature is projected to increase by 5.6°F to 78.9°F by 2050 and increase an additional 5.0°F to 83.9°F by 2099 (CEC 2019). The project area experienced an average precipitation of 24.2 inches per year between 1961 and 1990. Under the RCP 4.5 scenario, the county is projected to experience an increase of 9.2 inches to 33.4 inches per year by 2050 and decrease to 25.6 inches per year by 2099 (CEC 2019). Under the RCP 8.5 scenario, the project area is projected to experience an increase of 14.5 inches to 28.7 inches per year by 2050 and decrease to 28.7 inches per year by 2099 (CEC 2019).

## 4.3 IMPACTS AND MITIGATION MEASURES

### 4.3.1 Methodology

The City of Murrieta's GPU and CAP Update are consistent with State legislation and guidance and would achieve GHG reduction targets consistent with the reduction goals set forth by Assembly Bill (AB) 32, Senate Bill (SB) 32, Executive Order (EO) B-30-15, and EO S-3-05. The emissions inventory and targets developed in the CAP Update are based on the following State reduction targets and goals: 1990 levels by 2020 (AB 32); 40 percent below 1990 levels by 2030 (SB 32); and 80 percent below 1990 levels by 2050 (EO S-3-05).

The necessary data are not available to estimate the City's 1990 emission level. Therefore, a baseline year of 2016 has been designated because it is the year with the most available data. Proportional targets for the baseline inventory were developed to express the level of GHG emissions reductions that would be needed locally between 2016 and future target years to demonstrate consistency with statewide targets. Thus, in order to stay consistent with the State's targets and to account for the City's 2016 inventory, the City's percent-based GHG reduction targets are matched with the state-level reduction targets relative to a 2016 baseline. According to the inventories available from CARB, statewide emissions from all sectors were approximately 431 million $MTCO_2e$ ($MMTCO_2e$) in 1990 and 429 $MMTCO_2e$ in 2016 (CARB 2018). Thus, 2016 Statewide emissions were 2 $MMTCO_2e$ (0.37 percent) less than the 1990 level and the State's 2020 GHG target. Consequently, no further reductions from 2016 emissions levels are needed to reach the 2020 target of returning emissions to 1990 levels. To be consistent with the GPU's 2035 build out year, a target was established based on interpolation of the 2030 and 2050 targets. The City's GHG reduction targets are as follows:

- 2020 target: no reductions required;
- 2030 target: 40 percent below 2016 levels; and
- 2035 target: 50 percent below 2016 levels.

A potentially significant impact would result if the City's future emissions under implementation of the GPU and CAP Update would achieve the City's reduction targets for 2030 and 2035.

### 4.3.2 CAP Update GHG Reduction Measures

The CAP Update provides a list of local GHG reduction measures that would be implemented to further reduce GHG emissions from State and federal legislation actions to meet the City's 2030 and 2035 reduction targets. None of the proposed measures indicate where specific improvements would be constructed, their size, or specific characteristics. Consistent with the requirements of the CEQA Guidelines Section 15168, this memo provides a program-level discussion of the potential general impacts of implementing these measures, rather than project-level or site-specific physical impacts of such actions. Table 9 shows the GHG reductions attributable to the measures in the CAP Update and how anticipated reductions will help the City close the gap in emissions to meet its 2030 and 2035 targets. It also shows the City's progress in achieving its fair-share of emissions reductions toward the State's 2050 goal.

**Table 9 City of Murrieta CAP Update GHG Reduction Measures**

| Measure # | Sector | Measure Title | Description | GHG Reductions (MT $CO_2e$) | | |
|---|---|---|---|---|---|---|
| | | | | 2030 | 2035 | 2050 |
| BE-1 | Building Energy | Community Renewable Energy | The City shall create or join a Community Choice Aggregation (CCA) program or create a partnership with SoCal Edison's off-site renewable energy programs (i.e., Green Rate Program), which allows building renters and owners to opt into cleaner electricity sources. | 28,306 | 22,210 | 0 |
| BE-2 | Building Energy | Municipal Renewable Energy | Develop renewable energy generation systems on City-owned property for use in municipal operations. | 26 | 39 | 0 |
| BE-3 | Building Energy | Zero Net Energy Standard | Adopt a Zero Net Energy standards for development by 2025 and implement it through the following phased approach:<br>◢ Begin phase-in of standards in 2025 by applying, where feasible, to residential, commercial, and industrial projects<br>◢ Full phase-in of standards for residential and commercial uses by 2030, requiring all new residential and commercial projects to comply<br>◢ Full phase-in of standards for industrial uses by 2035, requiring all new industrial uses to comply | 24,659 | 50,094 | 113,303 |
| BE-4 | Building Energy | Energy Efficiency and Electrification Program | Work with WRCOG's Western Riverside Energy Partnership to develop and implement a comprehensive electrification and energy efficiency retrofit program focused on the reduction of natural gas use in existing residential and commercial land uses. The program would include the goal of reducing natural gas in existing residential and nonresidential land uses 20% by 2030.<br>- The program would include but not limited to strategies focused on reductions from:<br>• Pool-related energy use (e.g., pool cover rebate program)<br>• Electrification retrofits for natural gas appliances in existing residential and commercial land uses (i.e., hot water heaters, cooktops, heating systems) | 33,664 | 50,800 | 79,757 |
| LU-1 | Land Use | Jobs-Housing Balance Strategy | Encourage flexibility in land use regulations to respond to requirements of new and emerging business and industry types to help create sustainable jobs-housing balance. | 10,373 | 10,418 | 12,261 |
| LU-2 | Land Use | Tree Planting Program | Develop a tree planting program to plant trees throughout the City to increase carbon sequestration. | 6,301 | 12,956 | 19,612 |

| | | | | | | |
|---|---|---|---|---|---|---|
| LU-3 | Land Use | Open Space Conservation | Work with the Western Riverside Regional Conservation Authority (RCA) and the Center for Natural Lands Management to implement land use conservation programs for the City. The program would include a minimum acreage of land preserved through conservation easements and, therefore, would not be permitted for future development. | 16,095 | 18,240 | 20,385 |
| T-1 | Transportation | EV Programs | Increase electric vehicles and alternative fuel vehicles to 21.5% of the City's vehicle mix by 2030 and 23% by 2035 by incentivizing EV purchases and promoting EV ownership for residents and businesses. | 86,188 | 87,335 | 120,574 |
| T-2 | Transportation | EV Programs | Adopt an electric vehicle (EV) charging station ordinance that requires the following for new development:<br>- Installation of one EV charger per single-family housing unit; and<br>- Six percent of total parking spaces require EV charger infrastructure installation for new multi-family projects<br>- Three percent of total parking spaces require EV charger installation for new nonresidential projects | See T-1 | See T-1 | See T-1 |
| T-3 | Transportation | TOD Affordable Housing Program | Prioritize mixed-use and transit-oriented affordable housing projects to achieve the City's affordable housing targets in the SCAG Regional Housing Needs Assessment. | 5,036 | 5,572 | 7,670 |
| T-4 | Transportation | Murrieta Bike Network | Increase the City's bike and pedestrian infrastructure, including implementing the Downtown Murrieta Bike Network, developing comprehensive bike parking standards, and increasing the total percentage of City streets that include bike lanes throughout the City. | 367 | 120 | 0 |
| T-5 | Transportation | Traffic Signalization | Improve traffic flow and reduce traffic congestion by implementing a comprehensive traffic signalization synchronization and update. | 1,213 | 1,265 | 1,500 |
| T-6 | Transportation | Traffic Calming Program | Implement a traffic calming measure program to increase the percentage of City streets and intersections with calming traffic measures. | 890 | 929 | 3,306 |
| T-7 | Transportation | Transportation Demand Management Program | Implement a Citywide TDM Program to reduce communitywide VMT<br>1. Update Development Code to require employers with 50 or more employees to implement commute trip reduction programs. Commute Trip Reduction Programs voluntary for employees include:<br>- Alternative modes of commuting incentive program (e.g., walking, biking, etc.);<br>- Ride-sharing and preferential parking;<br>- Discounted transit fee program; or<br>- Telecommuting or alternative work schedules<br>2. Implement a comprehensive ridesharing program targeted at residents working in neighboring cities and long-distance commuters (i.e., San Diego, Los Angeles).<br>3. Monitor progress annually on TDM program to measure progress towards achieving a nine percent reduction in VMT by 2030 and an 11 percent reduction by 2035. | 8,954 | 11,416 | 18,373 |
| T-8 | Transportation | Transit Network | Work with RTA and WRCOG to expand the transit network in the City and increase service frequency with a priority on expanding services to neighboring cities where Murrieta residents work. | 10,391 | 21,555 | 25,145 |
| T-9 | Transportation | GHG Reduction Program | Develop and implement a no-net-increase in GHG emissions threshold for new development projects in the City and develop a GHG Fee Program to offset remaining GHG emissions from new development that cannot be | 41,357 | 76,481 | 108,756 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | achieved through project design features or other CAP measures. As part of implementation of this measure, the City shall:<br>- Adopt a set of strategies to reduce GHG emissions from new development through project-specific mitigation measures (See Implementation Descriptions below for suggestion of potential strategies.)<br>- Develop a process in which the remainder of emissions that cannot be reduced through project-specific measures shall be quantified and offset through a combination of a local emissions offset program to be set up by the City and other offset registry programs (See Implementation Descriptions below for a description of the local emissions offset program.) | | | |
| SW-1 | Solid Waste | Zero Emissions Vehicle Program | Encourage recycling or the re-use of materials to reduce the amount of solid waste generated within the City with the goal of achieving a 90% waste diversion rate by 2035. | 4,583 | 7,215 | 11,120 |
| SW-2 | Solid Waste | Construction Waste Diversion | Require all construction projects to exceed CALGreen construction waste diversion requirements by 15 percent. | 998 | 827 | 686 |
| WW-1 | Water | Landscaping and Water Conservation Program | Reduce outdoor water use by 10% at residential, commercial, and public properties by installing efficient irrigation systems and plants with lower watering needs. | 55 | 44 | 0 |
| WW-2 | Water | Rainwater Catchment Program | Encourage property owners to recycle water with rainwater catchment and greywater systems in existing and new developments. | 5 | 4 | 0 |
| TOTAL | | | | 279,463 | 377,521 | 542,447 |

Notes: $MTCO_2e$ = metric tons of carbon dioxide equivalent.
Source: Ascent Environmental 2019.

## 4.3.3 Thresholds of Significance

The issue of climate change is inherently a cumulative issue, as the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Thus, the project's impact to climate change is addressed only as a cumulative impact.

CEQA Guidelines Section 15064 and relevant portions of Appendix G recommend that a lead agency consider a project's consistency with relevant, adopted plans, and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions. In Appendix G of the State CEQA Guidelines, two checklist questions are provided to help assess if a project would result in a potentially significant impact on climate change. These questions ask whether the project would:

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or
- conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

In California, some counties, cities, and air districts have developed guidance and thresholds of significance for determining significance of GHG emissions that occur within their jurisdiction. The City of Murrieta is the CEQA Lead Agency for the project and is, therefore, responsible for determining whether an impact would be considered significant. This analysis relies on the project's consistency with State GHG reduction targets to assess the significance of its GHG emissions impacts.

## 4.3.4 Project Impacts

### Impact GHG-1 Project-Generated GHG Emissions

The GPU is a policy-level document that does not include any site-specific designs or proposals or grant any entitlements for development; however, construction and operation of GHG emission reduction measures provided in the CAP Update to offset emissions have the potential to directly or indirectly emit GHG emissions. GHG emissions would result from the operation of construction equipment, construction worker vehicle trips, and truck hauling trips. During the operational phase, some measures may require additional staffing, resulting in increased vehicle trips and associated GHG emissions. The following section describes the GHG emissions that could result from the implementation of the CAP Update.

#### Transportation Measures

GHG reduction measures that could result in the construction of new EV charging stations; enhanced transit network, and pedestrian and bicycle improvements (T-1 – T-9) would result in GHG emissions from construction equipment and vehicle trips. Construction activities may include grading, land clearing, construction of new structures, and paving. Operational emissions associated with these improvements would be minimal and generated by occasional use of maintenance equipment. Furthermore, these measures would encourage a shift towards alternative modes of transportation, reduce single-occupancy vehicle trips, resulting in an overall reduction in citywide GHG emissions.

#### Building Energy Measures

GHG reduction measures that could result in construction of renewable energy systems or efficiency improvements (BE-1 – BE-4) would result in minor GHG emissions from construction equipment and vehicle trips. Maintenance activities would be minimal and could consist of occasional inspections. Operational associated GHG emissions would be minimal from the occasional use of maintenance equipment or vehicles. Thus, these measures would not be expected to result in substantial GHG emissions. Furthermore, any temporary GHG emissions would be offset by the by the overall net benefit of GHG emission reductions during the operation of the small-scale renewable energy systems and through energy conservation.

#### Waste Diversion and Water Use Reduction Measures

GHG reduction measures for water use reductions would result in nominal construction emissions from vehicle trips for the installation of irrigation and rainwater catchment systems (WW-1 – WW-2). Operational emissions would not occur from waste diversion measures or water use reductions as haul trips would be reduced and water use efficiency and recycling will be increased.

#### Land Use Measures

GHG reduction measures related to land use, such as Measure LU-2, would result in the installation of City trees. This measure would result in minor GHG emissions from equipment and vehicle trips. Tree installation would not require heavy equipment but could result in a small amount of GHG emissions due to distribution of trees and watering at the beginning of the establishment period. Any emissions associated with this improvement would be minimal and temporary and would not generate substantial GHG emissions. The preservation of open space would preserve the carbon sequestration benefits of open space and habitat, thereby contributing to lower emissions. Improving jobs-housing balance would reduce the rate of vehicle miles traveled by increasing use of transit, walking, biking, and alternatives to driving alone, and decreasing the distance of drive-alone trips, which in turn would contribute to overall GHG reductions.

**Summary**

Implementation of the CAP Update would reduce emissions generated from implementation the GPU by increasing use of electric and other zero emission vehicles, reducing VMT, increasing renewable electricity use and energy efficiency, reducing waste and water use, and increasing carbon sequestration. The emissions generated from the measure's construction and operations activities is nominal compared to the long-term GHG emission reduction benefits. As described in detail in the CAP Update, the City would achieve its GHG reduction targets for 2030 and 2035. Impact GHG-1 would be less than significant for the proposed project, consistent with the less than significant impact identified in the 2011 General Plan EIR. The project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

### Impact GHG-2 Plan Conflict

The project would have a significant impact if it would conflict with established statewide GHG emission reduction targets established by AB 32, SB 32, EO S-3-05, and CARB's 2017 Scoping Plan.

The CAP Update primarily focuses on reducing emissions by 2030 and 2035, and also establishes a 2050 goal, which is important to guide long-term planning. The 2030 target aligns with the State's target codified in SB 32 and the 2035 target aligns with the horizon year of the GPU. To estimate the City's emissions for target years 2030, 2035, and 2050, emissions were evaluated based on whether they would change over time with and without legislative action to reduce emissions. The business-as-usual (BAU) emissions scenario is one in which no action is taken by local, State or federal agencies to reduce GHG emissions. The second scenario, a legislative-adjusted business-as-usual (ABAU), is one in which BAU conditions are adjusted to reflect policy or regulatory actions enacted by State or federal agencies, but without considering any local actions to reduce GHG emissions. The legislative actions applied to the BAU include renewable energy standards, building energy efficiency, waste and water use reductions, and State and federal vehicle efficiency standards. A complete list of legislative reductions applied to the BAU scenario are provided in Chapter 2 of the CAP Update.

Table 10 summarizes the forecasted GHG emissions under both a BAU and ABAU scenario. As indicated in Table 10, after implementation of State, federal, and CAP Update GHG reductions actions, to the CAP Update would meet the 2030 and 2035 targets while making progress towards the 2050 target. Therefore, the project's emissions are consistent with statewide goals and CARB's 2017 Scoping Plan.

**Table 10 City of Murrieta Emissions Forecasts (MT $CO_2e$)**

| | 2016 | 2020 | 2030 | 2035[a] | 2050 |
|---|---|---|---|---|---|
| BAU Forecast | 890,575 | 953,569 | 1,122,275 | 1,213,537 | 1,560,442 |
| Percent Change from 2016 | | 7% | 26% | 36% | 75% |
| ABAU Forecast | N/A | 878,357 | 815,174 | 820,787 | 875,589 |
| Percent Change from 2016 | | -1% | -8% | -8% | -2% |
| State Reduction Target (percent change from 2016) | | -2%[b] | 40% | 50% | 80% |
| Target Emissions | | N/A | 536,836 | 447,363 | 178,945 |
| Reductions Needed from ABAU Forecast | | 5,594 | 278,338 | 373,424 | 696,644 |
| Total Reductions from Measures | | N/A | 279,463 | 377,521 | 542,447 |

Notes: ABAU = legislative-adjusted business-as-usual, BAU = business-as-usual, $CO_2e$ = carbon dioxide equivalents, N/A = Not Available, MT = metric tons

a. Interpolated between 2030 and 2050.

b. Based on the State's GHG inventory in 1990 and 2016. (CARB 2018a).

Achieving a 2050 goal in a local government CAP is considerably challenging due to the extended time horizon, uncertainty about the future and the City's limited jurisdiction over various sources of emissions. Furthermore, the California Air Resources Board's (CARB) 2017 Climate Change Scoping Plan (2017 Scoping Plan), which lays out the framework for achieving the 2030 target established by SB 32, does not demonstrate a feasible pathway for the State to achieve its 2050 goal at this time. It is technically possible to calculate the scale of emissions reductions at a local level to achieve a 2050 goal, but it is not feasible or meaningful to analyze how a local government can substantially achieve a 2050 target based on local actions alone and therefore, it is difficult to establish defensible reduction assumptions beyond a 15-year time frame. This is primarily because of uncertainty around future technological advances and future changes in State and federal law and a local government's relatively limited jurisdiction over numerous emissions sources and activities that affect emissions.

In the coming decades, new innovations and technologies could become available that will enable further GHG reductions beyond 2035 on the path to achieving the long-term 2050 goal. New or more reliable methods may also become available to quantify measures that are currently unquantifiable. Future laws or regulations may further reduce emissions in sectors currently outside of the jurisdiction of the City (e.g., new vehicle emissions standards that would apply to new or replacement vehicles decades into the future), or emissions in sectors currently addressed primarily by local measures. As climate change science and policy continues to change, the City will be able to reevaluate how these and other factors are affecting progress toward meeting the long-term 2050 GHG emissions reduction goal in future CAP updates.

The following section compares the CAP Update GHG reduction measures to existing plans, policies, and regulations adopted for the purpose of reducing GHG emissions.

#### Transportation Measures

GHG reduction measures that could result in new EV charging stations, an enhanced transit network, and pedestrian and bicycle improvements would be consistent with the City's overall goals to reduce GHG emissions which are also consistent with statewide targets. These measures would also support transportation and land use strategies outlined in the GPU.

#### Building Energy Measures

GHG reduction measures that could result in renewable energy systems or efficiency improvements (BE-1 – BE-4) would be consistent with the City's overall goal to reduce GHG emissions which is also consistent with statewide targets. These measures would also support SB X1-2, SB 100, and the California Energy Code.

#### Waste Diversion and Water Use Reduction Measures

GHG reduction measures that could result in waste diversion and water use reductions would be consistent with the City's overall goal to reduce GHG emissions which is also consistent with statewide targets and the California Energy Code.

#### Land Use Measures

GHG Reduction Measure LU-2 and LU-3 would increase carbon sequestration with the increase of vegetation within the city. This would be consistent with the City's overall goal to reduce GHG emissions which is also consistent with statewide targets. These measures would also support the GPU.

**Summary**

Implementation of the proposed project would achieve the City's GHG reduction targets for 2030 and 2035, which are in alignment with the State's reduction targets and goals as expressed in the 2017 Scoping Plan; implementation of the proposed project would make substantial progress toward achievement by 2050 of reductions in line with the State's goals. The GHG reduction measures of the CAP Update would not conflict with any State plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Impact GHG-2 would be less than significant for the project, consistent with the less than significant impact identified in the 2011 General Plan EIR. The project would not result in a new significant impact or a substantial increase in the severity of the previously identified significant impact.

### Cumulative Impacts

The discussion of GHG emissions associated with the project for Impact GHG-1 and GHG-2 are inherently a cumulative impact analysis. GHG emissions from one project cannot, on their own, result in changes in climatic conditions; therefore, the emissions from one project must be considered in the context of their contribution to cumulative global emissions. The analysis of Impact GHG-1 concluded that the level of construction- and operation-related GHG emissions associated with implementation of the project would be less than significant. Impact GHG-2 concluded that the project would not conflict with the State's ability to meet its GHG targets with the implementation of the CAP Update and GHG emission reduction measures identified in Table 9 and, therefore, would be less than significant. The proposed project's impacts would not represent a cumulatively considerable contribution to climate change. The project would have a less than significant cumulative impact, consistent with the impact conclusion identified in the 2011 General Plan EIR. The project would not result in a new significant cumulative impact or a substantial increase in the severity of the previously identified significant cumulative impact.

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# Attachment A

Air Quality Modeling

# CalEEMod Input Calculations Output

## Land Use

| | 2011 GP | | 2035 GP Update | | Difference (2011-2035) | |
|---|---|---|---|---|---|---|
| | DU | SF | DU | SF | DU | SF |
| **Large Lot Residential** | 939 | | 908 | - | -31 | - |
| **Single Family Residential** | 30,338 | | 30,146 | - | -192 | - |
| **Multi-Family Residential** | 12,318 | | 14,115 | - | 1,797 | - |
| **Innovation** | - | | - | 7,259,396 | - | 7,259,396 |
| **Commercial** | 4 | 17,655,112 | 4 | 17,831,861 | 0 | 176,749 |
| **Office and Research Park** | 20 | 15,921,136 | 20 | 6,079,482 | 0 | -9,841,654 |
| **Business Park** | - | 9,999,285 | - | 9,999,285 | - | 0 |
| **Industrial** | - | 2,585,303 | - | 2,585,303 | - | 0 |
| **Civic Insitutional** | - | 1,391,585 | - | 1,391,494 | - | -91 |
| **Parks and Open Space** | - | 16,508 | - | 16,508 | - | 0 |
| **Mixed Use** | 731 | 1,195,844 | 731 | 1,195,844 | 0 | 0 |
| **Roads** | - | - | - | - | - | - |
| **TOTAL** | **44,350** | **48,764,773** | **45,924** | **46,359,173** | **1,574** | **-2,405,600** |
| **1000 SF** | | | | | | -2,406 |

REFERENCE

**Table 2-1**
**2011 General Plan 2035 Land Use Summary[1]**

| Land Use Designation | Acres | Density Standard (du/ac) | Intensity Standard (FAR) | 2035 Estimated Buildout | |
|---|---|---|---|---|---|
| | | | | DU | SF |
| Large Lot Residential | 3,030.62 | 0.4 - 1.0 | | 939 | |
| Single-Family Residential | 6,255.31 | 1.1 - 10.0 | | 30,338 | |
| Multiple-Family Residential | 661.56 | 10.1 – 30.0 | | 12,318 | |
| Commercial | 1,266.58 | | 0.25 – 0.75 | 4 | 17,655,112 |
| Office and Research Park | 1,353.70 | | 0.6 -2.5 | 20 | 15,921,136 |
| Business Park | 717.35 | | 0.4 – 0.6 | | 9,999,285 |
| Industrial | 185.47 | | 0.4 – 0.5 | | 2,585,303 |
| Civic and Institutional | 1,064.88 | | 0.5 – 1.0 | | 1,391,585 |
| Parks and Open Space | 3,474.46 | | | | 16,508 |
| Mixed Use | 59.68 | 30 | 1 | 731 | 1,195,844 |
| Roads | 3,441.07 | | | | |
| **TOTAL CITY ONLY** | **21,510.68** | | | **44,351** | **48,764,774** |
| Sphere of Influence | 5,340.95 | | | | |
| **TOTAL WITH SPHERE OF INFLUENCE** | **26,851.63** | | | | |

Notes:
1. This table summarizes the projected buildout of the 2011 General Plan based on existing 2018 land use designations by acre.
2. du/ac = dwelling units per acre
3. FAR = Floor Area Ratio

**Table 2.2**
**Proposed General Plan 2035 Land Use Summary**

| Land Use Designation | Acres | Density Standard (du/ac) | Intensity Standard (FAR) | 2035 Estimated Buildout | |
|---|---|---|---|---|---|
| | | | | DU | SF |
| Large Lot Residential | 2,927.44 | 0.4 - 1.0 | | 908 | |
| Single-Family Residential | 6,215.73 | 1.1 - 10.0 | | 30,146 | |
| Multiple-Family Residential | 758.03 | 10.1 – 30.0 | | 14,115 | |
| Innovation | 520.79 | | 0.6 - 2.5 | | 7,259,396 |
| Commercial | 1,279.26 | | 0.25 – 0.75 | 4 | 17,831,861 |
| Office and Research Park | 516.91 | | 0.6 -2.5 | 20 | 6,079,482 |
| Business Park | 717.35 | | 0.4 – 0.6 | | 9,999,285 |
| Industrial | 185.47 | | 0.4 – 0.5 | | 2,585,303 |
| Civic and Institutional | 1,064.81 | | 0.5 – 1.0 | | 1,391,494 |
| Parks and Open Space | 3,824.14 | | | | 16,508 |
| Mixed Use | 59.68 | 30 | 1 | 731 | 1,195,844 |
| Roads | 3,441.07 | | | | |
| **TOTAL CITY ONLY** | **21,510.68** | | | **45,923** | **46,359,173** |
| Sphere of Influence | 5,340.95 | | | | |
| **TOTAL WITH SPHERE OF INFLUENCE** | **26,851.63** | | | | |

Notes:
This table summarizes the proposed draft General Plan buildout. Buildout calculations described in this table are estimates.

## VMT

**Interpolation**

| | 2016 | 2035 | 2040 |
|---|---|---|---|
| Daily VMT | 4,132,700 | 5,444,776 | 5,854,532 |

2016-2040 Compound Annual Growth Rate
0.01461769

Source: VRPA Vehicle Miles Traveled (VMT) Analysis

**Exhibit 1**
Total Daily Citywide VMT

| | Adopted | Proposed | Net 2035 |
|---|---|---|---|
| Daily VMT | 5,588,834 | 5,495,806 | -93,028 |

Source: VRPA Vehicle Miles Traveled (VMT) Analysis

**Forcasting Calculation**
Annual VMT

| Adopted | Proposed | Net 2035 |
|---|---|---|
| 1,939,325,398 | 1,907,044,682 | -32,280,716 |

REFERENCE

**Exhibit 1**
**Total Daily Citywide Vehicle Miles Traveled (VMT)**

| Analysis Year | Scenario | | |
|---|---|---|---|
| | Existing (Adopted) General Plan | Proposed General Plan Update | Net Change |
| 2016 (Base) | 4,136,700 | 4,132,649 | -4,051 |
| 2020 (Interpolated) | 4,442,413 | 4,419,630 | -22,783 |
| 2030 (Interpolated) | 5,206,697 | 5,137,080 | -69,617 |
| 2035 (Interpolated) | 5,588,834 | 5,495,806 | -93,028 |
| 2040 (Interpolated) | 5,970,980 | 5,854,532 | -116,448 |

Note: VMT totals calculated using origin-destination method

## CalEEMod Default VMT Calculator (UNMITIGATED SCENARIO)

This calcultor was created based on the default trip inputs for the unmitigated CalEEMod run. The calculator calculateds the annual VMT from the proposed project using the same methodology from CalEEMod, described in Appendix A, for the UNMITIGATED SCENARIO. This calculator can be used to adjust land use trip rates for the MITIGATED PROJECT scenario which is based on the traffic study conducted for the project

### Trip Type

**CalEEMod defaults based on land uses inputted**

| Land Use | Miles | | | Trip % | | | Trip Purpose | | |
|---|---|---|---|---|---|---|---|---|---|
| | H-w or C-W | H-S or C-C | H-O or C-O | H-w or C-W | H-S or C-C | H-O or C-O | Primary | Diverted | Pass-by |
| Government Office Building | 14.70 | 5.90 | 8.70 | 40.2% | 19.2% | 40.6% | 86.0% | 11.0% | 3.0% |

### Total Trips

***Total Trips = (TripRate weekday x 5 +Trip Sat + Trip Sun)***

**Average Daily Trips Based on CalEEMod Trip Gen Defaults per land use unit. Total trips Calculated**

| Land Use | Average Daily Trip Rate | | | |
|---|---|---|---|---|
| | weekday | Saturday | Sunday | Total Trips (weekly) |
| Government Office Building | 6.65 | 6.39 | 5.86 | **45.5** |
| | **18.9** | | | |
| | **35%** | **34%** | **31%** | **100%** |

### Trip Length Calc

***AVG Trip Length = Link % primary x trip length primary+link % divertedx0.25x length trip primary+link % passbyx0.1***

**Trip length calculated for each trip type based on trip purpose % and length defaults from CalEEMod**

Land Use

| **Government Office Building** | link % primary | trip length primary | link % diverted | Constant (0.25) | trip length primary | link % passby | constant | Trip Length |
|---|---|---|---|---|---|---|---|---|
| H-W or c-w | 86.0% | 14.70 | 11.0% | 0.25 | 14.7 | 3.0% | 0.1 | 13.0 |
| h-s or c-c | 86.0% | 5.90 | 11.0% | 0.25 | 5.9 | 3.0% | 0.1 | 5.2 |
| h-o or c-o | 86.0% | 8.70 | 11.0% | 0.25 | 8.7 | 3.0% | 0.1 | 7.7 |

### VMT Calc Per Land Use Type (Weekly)

VMT = #Trips x AVG Trip Length per land use and trip type

Trip number for each trip type are derived by multiplying the total trips for each land use calculated above in the Total Trip Calcs by the trip % shown in the Trip Type table for each land use

| **Government Office Building** | **# trips** | **trip length** | **Weekly VMT** | **Annual VMT** |
|---|---|---|---|---|
| H-W or c-w | 18 | 13.0 | 239 | |
| h-s or c-c | 9 | 5.2 | 46 | |
| h-o or c-o | 18 | 7.7 | 143 | |
| Total VMT | | | 427 | 22,211.49 |

### Annual VMT Calc

the calculated weekly VMT for each land use is summed. This value is multiplied by 50 weeks/year to equal the annual VMT number calculated by CalEEMod

| | | | | |
|---|---|---|---|---|
| Summed Weekly VMT from Each Land Use | 427.14 | | | |
| Weeks per Year CalEEMod Uses for Annual VMT | 52.00 | | 52.0000 | 52.14285714 |
| Calculated Annual VMT | **22,211** | 22,211 | | |

## CalEEMod Existing VMT Calculator (MITIGATED SCENARIO)

This calcultor was created based on the default trip inputs for the unmitigated CalEEMod run. The calculator calculateds the annual VMT from the proposed project using the same methodology from CalEEMod, described in Appendix A, for the MITIGATED SCENARIO. This calculator can be used to adjust land use trip rates for the MITIGATED PROJECT scenario which is based on the traffic study conducted for the project

**Daily VMT Provided by VRPA** **5,588,834**

**Annual VMT** **1,939,325,398**

### Trip Type

**CalEEMod defaults based on land uses inputted**

| Land Use | Miles | | | Trip % | | | Trip Purpose | | |
|---|---|---|---|---|---|---|---|---|---|
| | H-w or C-W | H-S or C-C | H-O or C-O | H-w or C-W | H-S or C-C | H-O or C-O | Primary | Diverted | Pass-by |
| Residential | 14.70 | 5.90 | 8.70 | 40.2% | 19.2% | 40.6% | 86.0% | 11.0% | 3.0% |

### Total Trips

***Total Trips = (TripRate weekday x 5 +Trip Sat + Trip Sun)***

**Average Daily Trips Based on CalEEMod Trip Gen Defaults per land use unit. Total trips Calculated**

| Land Use | Average Daily Trip Rate | | | |
|---|---|---|---|---|
| | weekday | Saturday | Sunday | Total Trips (weekly) |
| Residential | 1,650,193 | 0 | 0 | **8250967.05** |

| Land Use | Average Daily Trip Rate Proportioned | | | |
|---|---|---|---|---|
| | weekday | Saturday | Sunday | Total Trips (weekly) |
| Residential | 580,623.61 | 557,922.53 | 511,647.27 | **3972687.839** |

| Land Use | Average Daily Trip Rate per DU | | | |
|---|---|---|---|---|
| | weekday | Saturday | Sunday | Total Trips (weekly) |
| Residential | 369.35 | 354.91 | 325.48 | **2527.155114** |

### Trip Length Calc

***AVG Trip Length = Link % primary x trip length primary+link % divertedx0.25x length trip primary+link % passbyx0.1***

**Trip length calculated for each trip type based on trip purpose % and length defaults from CalEEMod**

Land Use

| **Residential** | link % primary | trip length primary | link % diverted | Constant (0.25) | trip length primary | link % passby | constant | Trip Length |
|---|---|---|---|---|---|---|---|---|
| H-W or c-w | 86.0% | 14.70 | 11.0% | 0.25 | 14.7 | 3.0% | 0.1 | 13.0 |
| h-s or c-c | 86.0% | 5.90 | 11.0% | 0.25 | 5.9 | 3.0% | 0.1 | 5.2 |
| h-o or c-o | 86.0% | 8.70 | 11.0% | 0.25 | 8.7 | 3.0% | 0.1 | 7.7 |

## VMT Calc Per Land Use Type (Weekly)

VMT = #Trips x AVG Trip Length per land use and trip type

Trip number for each trip type are derived by multiplying the total trips for each land use calculated above in the Total Trip Calcs by the trip % shown in the Trip Type table for

| **Residential** | **# trips** | **trip length** | **Weekly VMT** | **Annual VMT** |
|---|---|---|---|---|
| H-W or c-w | 1,597,021 | 13.0 | 20,839,920 | |
| h-s or c-c | 762,756 | 5.2 | 3,996,270 | |
| h-o or c-o | 1,612,911 | 7.7 | 12,458,530 | |
| Total VMT | | | 37,294,719 | 1,939,325,410.89 |

## Annual VMT Calc

the calculated weekly VMT for each land use is summed. This value is multiplied by 50 weeks/year to equal the annual VMT number calculated by CalEEMod

| | | | | |
|---|---|---|---|---|
| Summed Weekly VMT from Each Land Use | 37,294,719.44 | | | |
| Weeks per Year CalEEMod Uses for Annual VMT | 52.00 | | 52.0000 | 52.14285714 |
| Calculated Annual VMT | **1,939,325,411** | 1,939,325,411 | | |
| | | 12.89 | | |
| | 32,265,184 | | | |

## CalEEMod Proposed VMT Calculator (MITIGATED SCENARIO)

This calcultor was created based on the default trip inputs for the unmitigated CalEEMod run. The calculator calculateds the annual VMT from the proposed project using the same methodology from CalEEMod, described in Appendix A, for the MITIGATED SCENARIO. This calculator can be used to adjust land use trip rates for the MITIGATED PROJECT scenario which is based on the traffic study conducted for the project

**Daily VMT Provided by VRPA** **5,495,806**

**Annual VMT** **1,907,044,682**

### Trip Type

**CalEEMod defaults based on land uses inputted**

| Land Use | Miles | | | Trip % | | | Trip Purpose | | |
|---|---|---|---|---|---|---|---|---|---|
| | H-w or C-W | H-S or C-C | H-O or C-O | H-w or C-W | H-S or C-C | H-O or C-O | Primary | Diverted | Pass-by |
| Residential | 14.70 | 5.90 | 8.70 | 40.2% | 19.2% | 40.6% | 86.0% | 11.0% | 3.0% |

### Total Trips

***Total Trips = (TripRate weekday x 5 +Trip Sat + Trip Sun)***

**Average Daily Trips Based on CalEEMod Trip Gen Defaults per land use unit. Total trips Calculated**

| Land Use | Average Daily Trip Rate | | | |
|---|---|---|---|---|
| | weekday | Saturday | Sunday | Total Trips (weekly) |
| Residential | 1,622,725 | 0 | 0 | **8113627** |

| Land Use | Average Daily Trip Rate Proportioned | | | |
|---|---|---|---|---|
| | weekday | Saturday | Sunday | Total Trips (weekly) |
| Residential | 570,958.94 | 548,635.73 | 503,130.73 | **3906561.148** |

| Land Use | Average Daily Trip Rate per DU | | | |
|---|---|---|---|---|
| | weekday | Saturday | Sunday | Total Trips (weekly) |
| Residential | 363.21 | 349.00 | 320.06 | **2485.089789** |

### Trip Length Calc

***AVG Trip Length = Link % primary x trip length primary+link % divertedx0.25x length trip primary+link % passbyx0.1***

**Trip length calculated for each trip type based on trip purpose % and length defaults from CalEEMod**

Land Use

| **Residential** | link % primary | trip length primary | link % diverted | Constant (0.25) | trip length primary | link % passby | constant | Trip Length |
|---|---|---|---|---|---|---|---|---|
| H-W or c-w | 86.0% | 14.70 | 11.0% | 0.25 | 14.7 | 3.0% | 0.1 | 13.0 |
| h-s or c-c | 86.0% | 5.90 | 11.0% | 0.25 | 5.9 | 3.0% | 0.1 | 5.2 |
| h-o or c-o | 86.0% | 8.70 | 11.0% | 0.25 | 8.7 | 3.0% | 0.1 | 7.7 |

## VMT Calc Per Land Use Type (Weekly)

VMT = #Trips x AVG Trip Length per land use and trip type

Trip number for each trip type are derived by multiplying the total trips for each land use calculated above in the Total Trip Calcs by the trip % shown in the Trip Type table for

| **Residential** | **# trips** | **trip length** | **Weekly VMT** | **Annual VMT** |
|---|---|---|---|---|
| H-W or c-w | 1,570,438 | 13.0 | 20,493,033 | |
| h-s or c-c | 750,060 | 5.2 | 3,929,750 | |
| h-o or c-o | 1,586,064 | 7.7 | 12,251,154 | |
| Total VMT | | | 36,673,937 | 1,907,044,704.00 |

## Annual VMT Calc

the calculated weekly VMT for each land use is summed. This value is multiplied by 50 weeks/year to equal the annual VMT number calculated by CalEEMod

| | | | | |
|---|---|---|---|---|
| Summed Weekly VMT from Each Land Use | 36,673,936.62 | | | |
| Weeks per Year CalEEMod Uses for Annual VMT | 52.00 | | 52.0000 | 52.14285714 |
| Calculated Annual VMT | **1,907,044,704** | 1,907,044,704 | | |
| | | 22.00 | | |
| | (15,532) | | | |

# Residential Operations CalEEMod Output

# City of Murrieta General Plan Update - Residential

**Riverside-South Coast County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Apartments Mid Rise | 1,572.00 | Dwelling Unit | 41.37 | 1,572,000.00 | 4496 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2035 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - GP Update will add 1,572 multi-family dwelling units.

Construction Phase -

Vehicle Trips - On-road transportation analyzed in seperate CalEEMod run

Woodstoves - No woodstoves or fireplaces

Energy Mitigation - Increased efficiency to meet 2019 Title 24 Standards

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFireplaces | NumberGas | 1,336.20 | 0.00 |

| | | | |
|---|---|---|---|
| tblFireplaces | NumberNoFireplace | 157.20 | 0.00 |
| tblFireplaces | NumberWood | 78.60 | 0.00 |
| tblVehicleTrips | HO_TTP | 40.60 | 0.00 |
| tblVehicleTrips | HS_TTP | 19.20 | 0.00 |
| tblVehicleTrips | HW_TTP | 40.20 | 0.00 |
| tblVehicleTrips | ST_TR | 6.39 | 0.00 |
| tblVehicleTrips | SU_TR | 5.86 | 0.00 |
| tblVehicleTrips | WD_TR | 6.65 | 0.00 |
| tblWoodstoves | NumberCatalytic | 78.60 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 78.60 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2020 | 0.7345 | 5.5095 | 5.2797 | 0.0139 | 1.3340 | 0.2252 | 1.5592 | 0.4810 | 0.2090 | 0.6900 | 0.0000 | 1,254.1257 | 1,254.1257 | 0.1685 | 0.0000 | 1,258.3371 |
| 2021 | 0.9337 | 4.7460 | 7.2068 | 0.0236 | 1.7622 | 0.1387 | 1.9009 | 0.4711 | 0.1303 | 0.6014 | 0.0000 | 2,150.2307 | 2,150.2307 | 0.1443 | 0.0000 | 2,153.8386 |
| 2022 | 0.8616 | 4.3311 | 6.7598 | 0.0230 | 1.7554 | 0.1179 | 1.8733 | 0.4693 | 0.1108 | 0.5801 | 0.0000 | 2,089.7914 | 2,089.7914 | 0.1381 | 0.0000 | 2,093.2431 |
| 2023 | 5.3201 | 1.9038 | 3.3691 | 0.0109 | 0.8290 | 0.0602 | 0.8892 | 0.2215 | 0.0564 | 0.2779 | 0.0000 | 990.3622 | 990.3622 | 0.0735 | 0.0000 | 992.2000 |
| **Maximum** | **5.3201** | **5.5095** | **7.2068** | **0.0236** | **1.7622** | **0.2252** | **1.9009** | **0.4810** | **0.2090** | **0.6900** | **0.0000** | **2,150.2307** | **2,150.2307** | **0.1685** | **0.0000** | **2,153.8386** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2020 | 0.7345 | 5.5095 | 5.2797 | 0.0139 | 1.3340 | 0.2252 | 1.5592 | 0.4810 | 0.2090 | 0.6900 | 0.0000 | 1,254.1252 | 1,254.1252 | 0.1685 | 0.0000 | 1,258.3365 |
| 2021 | 0.9337 | 4.7459 | 7.2068 | 0.0236 | 1.7622 | 0.1387 | 1.9009 | 0.4711 | 0.1303 | 0.6014 | 0.0000 | 2,150.2303 | 2,150.2303 | 0.1443 | 0.0000 | 2,153.8383 |
| 2022 | 0.8616 | 4.3311 | 6.7598 | 0.0230 | 1.7554 | 0.1179 | 1.8733 | 0.4693 | 0.1108 | 0.5801 | 0.0000 | 2,089.7911 | 2,089.7911 | 0.1381 | 0.0000 | 2,093.2427 |
| 2023 | 5.3201 | 1.9038 | 3.3691 | 0.0109 | 0.8290 | 0.0602 | 0.8892 | 0.2215 | 0.0564 | 0.2779 | 0.0000 | 990.3619 | 990.3619 | 0.0735 | 0.0000 | 992.1998 |
| **Maximum** | **5.3201** | **5.5095** | **7.2068** | **0.0236** | **1.7622** | **0.2252** | **1.9009** | **0.4810** | **0.2090** | **0.6900** | **0.0000** | **2,150.2303** | **2,150.2303** | **0.1685** | **0.0000** | **2,153.8383** |

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

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2020** | **3-31-2020** | 1.2657 | 1.2657 |
| **2** | **4-1-2020** | **6-30-2020** | 1.7200 | 1.7200 |
| **3** | **7-1-2020** | **9-30-2020** | 1.6669 | 1.6669 |
| **4** | **10-1-2020** | **12-31-2020** | 1.5824 | 1.5824 |
| **5** | **1-1-2021** | **3-31-2021** | 1.4011 | 1.4011 |
| **6** | **4-1-2021** | **6-30-2021** | 1.4201 | 1.4201 |
| **7** | **7-1-2021** | **9-30-2021** | 1.4357 | 1.4357 |
| **8** | **10-1-2021** | **12-31-2021** | 1.4323 | 1.4323 |
| **9** | **1-1-2022** | **3-31-2022** | 1.2863 | 1.2863 |
| **10** | **4-1-2022** | **6-30-2022** | 1.3041 | 1.3041 |
| **11** | **7-1-2022** | **9-30-2022** | 1.3184 | 1.3184 |
| **12** | **10-1-2022** | **12-31-2022** | 1.3148 | 1.3148 |
| **13** | **1-1-2023** | **3-31-2023** | 1.1040 | 1.1040 |

| | | | | |
|---|---|---|---|---|
| **14** | **4-1-2023** | **6-30-2023** | 0.9215 | 0.9215 |
| **15** | **7-1-2023** | **9-30-2023** | 2.7461 | 2.7461 |
| | | **Highest** | 2.7461 | 2.7461 |

## 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 | 6.6553 | 0.1864 | 16.1545 | 8.6000e-004 | | 0.0899 | 0.0899 | | 0.0899 | 0.0899 | 0.0000 | 26.4812 | 26.4812 | 0.0252 | 0.0000 | 27.1114 |
| Energy | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 3,528.8865 | 3,528.8865 | 0.1182 | 0.0423 | 3,544.4462 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 146.7868 | 0.0000 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 32.4938 | 653.4978 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | **6.7807** | **1.2580** | **16.6105** | **7.7000e-003** | **0.0000** | **0.1765** | **0.1765** | **0.0000** | **0.1765** | **0.1765** | **179.2807** | **4,208.8655** | **4,388.1461** | **12.1827** | **0.1267** | **4,730.4645** |

### 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 | 6.6553 | 0.1864 | 16.1545 | 8.6000e-004 | | 0.0899 | 0.0899 | | 0.0899 | 0.0899 | 0.0000 | 26.4812 | 26.4812 | 0.0252 | 0.0000 | 27.1114 |
| Energy | 0.0860 | 0.7352 | 0.3128 | 4.6900e-003 | | 0.0594 | 0.0594 | | 0.0594 | 0.0594 | 0.0000 | 2,934.2480 | 2,934.2480 | 0.1023 | 0.0334 | 2,946.7589 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 146.7868 | 0.0000 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 32.4938 | 653.4978 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | **6.7413** | **0.9215** | **16.4674** | **5.5500e-003** | **0.0000** | **0.1493** | **0.1493** | **0.0000** | **0.1493** | **0.1493** | **179.2807** | **3,614.2270** | **3,793.5077** | **12.1668** | **0.1178** | **4,132.7772** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.58** | **26.75** | **0.86** | **27.92** | **0.00** | **15.41** | **15.41** | **0.00** | **15.41** | **15.41** | **0.00** | **14.13** | **13.55** | **0.13** | **7.02** | **12.63** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2020 | 3/10/2020 | 5 | 50 | |
| 2 | Site Preparation | Site Preparation | 3/11/2020 | 4/21/2020 | 5 | 30 | |
| 3 | Grading | Grading | 4/22/2020 | 8/4/2020 | 5 | 75 | |
| 4 | Building Construction | Building Construction | 8/5/2020 | 6/6/2023 | 5 | 740 | |
| 5 | Paving | Paving | 6/7/2023 | 8/22/2023 | 5 | 55 | |
| 6 | Architectural Coating | Architectural Coating | 8/23/2023 | 11/7/2023 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 3,183,300; Residential Outdoor: 1,061,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |

| | | | | | |
|---|---|---|---|---|---|
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,132.00 | 168.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 226.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2020

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0828 | 0.8300 | 0.5438 | 9.7000e-004 | | 0.0415 | 0.0415 | | 0.0386 | 0.0386 | 0.0000 | 84.9965 | 84.9965 | 0.0240 | 0.0000 | 85.5964 |
| **Total** | **0.0828** | **0.8300** | **0.5438** | **9.7000e-004** | | **0.0415** | **0.0415** | | **0.0386** | **0.0386** | **0.0000** | **84.9965** | **84.9965** | **0.0240** | **0.0000** | **85.5964** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.7200e-003 | 1.2100e-003 | 0.0129 | 4.0000e-005 | 4.1200e-003 | 3.0000e-005 | 4.1500e-003 | 1.0900e-003 | 2.0000e-005 | 1.1200e-003 | 0.0000 | 3.4485 | 3.4485 | 9.0000e-005 | 0.0000 | 3.4506 |
| **Total** | **1.7200e-003** | **1.2100e-003** | **0.0129** | **4.0000e-005** | **4.1200e-003** | **3.0000e-005** | **4.1500e-003** | **1.0900e-003** | **2.0000e-005** | **1.1200e-003** | **0.0000** | **3.4485** | **3.4485** | **9.0000e-005** | **0.0000** | **3.4506** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0828 | 0.8300 | 0.5438 | 9.7000e-004 | | 0.0415 | 0.0415 | | 0.0386 | 0.0386 | 0.0000 | 84.9964 | 84.9964 | 0.0240 | 0.0000 | 85.5963 |
| **Total** | **0.0828** | **0.8300** | **0.5438** | **9.7000e-004** | | **0.0415** | **0.0415** | | **0.0386** | **0.0386** | **0.0000** | **84.9964** | **84.9964** | **0.0240** | **0.0000** | **85.5963** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.7200e-003 | 1.2100e-003 | 0.0129 | 4.0000e-005 | 4.1200e-003 | 3.0000e-005 | 4.1500e-003 | 1.0900e-003 | 2.0000e-005 | 1.1200e-003 | 0.0000 | 3.4485 | 3.4485 | 9.0000e-005 | 0.0000 | 3.4506 |
| **Total** | **1.7200e-003** | **1.2100e-003** | **0.0129** | **4.0000e-005** | **4.1200e-003** | **3.0000e-005** | **4.1500e-003** | **1.0900e-003** | **2.0000e-005** | **1.1200e-003** | **0.0000** | **3.4485** | **3.4485** | **9.0000e-005** | **0.0000** | **3.4506** |

## 3.3 Site Preparation - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.2710 | 0.0000 | 0.2710 | 0.1490 | 0.0000 | 0.1490 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0612 | 0.6363 | 0.3227 | 5.7000e-004 | | 0.0330 | 0.0330 | | 0.0303 | 0.0303 | 0.0000 | 50.1460 | 50.1460 | 0.0162 | 0.0000 | 50.5515 |
| **Total** | **0.0612** | **0.6363** | **0.3227** | **5.7000e-004** | **0.2710** | **0.0330** | **0.3040** | **0.1490** | **0.0303** | **0.1793** | **0.0000** | **50.1460** | **50.1460** | **0.0162** | **0.0000** | **50.5515** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.2400e-003 | 8.7000e-004 | 9.2800e-003 | 3.0000e-005 | 2.9700e-003 | 2.0000e-005 | 2.9900e-003 | 7.9000e-004 | 2.0000e-005 | 8.0000e-004 | 0.0000 | 2.4829 | 2.4829 | 6.0000e-005 | 0.0000 | 2.4845 |
| **Total** | **1.2400e-003** | **8.7000e-004** | **9.2800e-003** | **3.0000e-005** | **2.9700e-003** | **2.0000e-005** | **2.9900e-003** | **7.9000e-004** | **2.0000e-005** | **8.0000e-004** | **0.0000** | **2.4829** | **2.4829** | **6.0000e-005** | **0.0000** | **2.4845** |

## 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 | | | | | 0.2710 | 0.0000 | 0.2710 | 0.1490 | 0.0000 | 0.1490 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0612 | 0.6363 | 0.3227 | 5.7000e-004 | | 0.0330 | 0.0330 | | 0.0303 | 0.0303 | 0.0000 | 50.1460 | 50.1460 | 0.0162 | 0.0000 | 50.5514 |
| **Total** | **0.0612** | **0.6363** | **0.3227** | **5.7000e-004** | **0.2710** | **0.0330** | **0.3040** | **0.1490** | **0.0303** | **0.1793** | **0.0000** | **50.1460** | **50.1460** | **0.0162** | **0.0000** | **50.5514** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.2400e-003 | 8.7000e-004 | 9.2800e-003 | 3.0000e-005 | 2.9700e-003 | 2.0000e-005 | 2.9900e-003 | 7.9000e-004 | 2.0000e-005 | 8.0000e-004 | 0.0000 | 2.4829 | 2.4829 | 6.0000e-005 | 0.0000 | 2.4845 |
| **Total** | **1.2400e-003** | **8.7000e-004** | **9.2800e-003** | **3.0000e-005** | **2.9700e-003** | **2.0000e-005** | **2.9900e-003** | **7.9000e-004** | **2.0000e-005** | **8.0000e-004** | **0.0000** | **2.4829** | **2.4829** | **6.0000e-005** | **0.0000** | **2.4845** |

## 3.4 Grading - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.3253 | 0.0000 | 0.3253 | 0.1349 | 0.0000 | 0.1349 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1669 | 1.8824 | 1.1984 | 2.3300e-003 | | 0.0815 | 0.0815 | | 0.0750 | 0.0750 | 0.0000 | 204.3161 | 204.3161 | 0.0661 | 0.0000 | 205.9681 |
| **Total** | **0.1669** | **1.8824** | **1.1984** | **2.3300e-003** | **0.3253** | **0.0815** | **0.4068** | **0.1349** | **0.0750** | **0.2099** | **0.0000** | **204.3161** | **204.3161** | **0.0661** | **0.0000** | **205.9681** |

**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 | 3.4500e-003 | 2.4200e-003 | 0.0258 | 8.0000e-005 | 8.2400e-003 | 5.0000e-005 | 8.2900e-003 | 2.1900e-003 | 5.0000e-005 | 2.2400e-003 | 0.0000 | 6.8969 | 6.8969 | 1.7000e-004 | 0.0000 | 6.9013 |
| **Total** | **3.4500e-003** | **2.4200e-003** | **0.0258** | **8.0000e-005** | **8.2400e-003** | **5.0000e-005** | **8.2900e-003** | **2.1900e-003** | **5.0000e-005** | **2.2400e-003** | **0.0000** | **6.8969** | **6.8969** | **1.7000e-004** | **0.0000** | **6.9013** |

## 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 | | | | | 0.3253 | 0.0000 | 0.3253 | 0.1349 | 0.0000 | 0.1349 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1669 | 1.8824 | 1.1984 | 2.3300e-003 | | 0.0815 | 0.0815 | | 0.0750 | 0.0750 | 0.0000 | 204.3159 | 204.3159 | 0.0661 | 0.0000 | 205.9679 |
| **Total** | **0.1669** | **1.8824** | **1.1984** | **2.3300e-003** | **0.3253** | **0.0815** | **0.4068** | **0.1349** | **0.0750** | **0.2099** | **0.0000** | **204.3159** | **204.3159** | **0.0661** | **0.0000** | **205.9679** |

## 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 | 3.4500e-003 | 2.4200e-003 | 0.0258 | 8.0000e-005 | 8.2400e-003 | 5.0000e-005 | 8.2900e-003 | 2.1900e-003 | 5.0000e-005 | 2.2400e-003 | 0.0000 | 6.8969 | 6.8969 | 1.7000e-004 | 0.0000 | 6.9013 |
| **Total** | **3.4500e-003** | **2.4200e-003** | **0.0258** | **8.0000e-005** | **8.2400e-003** | **5.0000e-005** | **8.2900e-003** | **2.1900e-003** | **5.0000e-005** | **2.2400e-003** | **0.0000** | **6.8969** | **6.8969** | **1.7000e-004** | **0.0000** | **6.9013** |

## 3.5 Building Construction - 2020

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1134 | 1.0265 | 0.9014 | 1.4400e-003 | | 0.0598 | 0.0598 | | 0.0562 | 0.0562 | 0.0000 | 123.9113 | 123.9113 | 0.0302 | 0.0000 | 124.6671 |
| **Total** | **0.1134** | **1.0265** | **0.9014** | **1.4400e-003** | | **0.0598** | **0.0598** | | **0.0562** | **0.0562** | **0.0000** | **123.9113** | **123.9113** | **0.0302** | **0.0000** | **124.6671** |

### 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 | 0.0255 | 0.9349 | 0.1829 | 2.3100e-003 | 0.0568 | 5.2900e-003 | 0.0621 | 0.0164 | 5.0600e-003 | 0.0214 | 0.0000 | 221.0038 | 221.0038 | 0.0177 | 0.0000 | 221.4455 |
| Worker | 0.2784 | 0.1950 | 2.0824 | 6.1600e-003 | 0.6657 | 4.1000e-003 | 0.6698 | 0.1768 | 3.7700e-003 | 0.1805 | 0.0000 | 556.9236 | 556.9236 | 0.0140 | 0.0000 | 557.2722 |
| **Total** | **0.3039** | **1.1299** | **2.2653** | **8.4700e-003** | **0.7224** | **9.3900e-003** | **0.7318** | **0.1931** | **8.8300e-003** | **0.2020** | **0.0000** | **777.9274** | **777.9274** | **0.0316** | **0.0000** | **778.7177** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1134 | 1.0265 | 0.9014 | 1.4400e-003 | | 0.0598 | 0.0598 | | 0.0562 | 0.0562 | 0.0000 | 123.9112 | 123.9112 | 0.0302 | 0.0000 | 124.6669 |
| **Total** | **0.1134** | **1.0265** | **0.9014** | **1.4400e-003** | | **0.0598** | **0.0598** | | **0.0562** | **0.0562** | **0.0000** | **123.9112** | **123.9112** | **0.0302** | **0.0000** | **124.6669** |

## 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 | 0.0255 | 0.9349 | 0.1829 | 2.3100e-003 | 0.0568 | 5.2900e-003 | 0.0621 | 0.0164 | 5.0600e-003 | 0.0214 | 0.0000 | 221.0038 | 221.0038 | 0.0177 | 0.0000 | 221.4455 |
| Worker | 0.2784 | 0.1950 | 2.0824 | 6.1600e-003 | 0.6657 | 4.1000e-003 | 0.6698 | 0.1768 | 3.7700e-003 | 0.1805 | 0.0000 | 556.9236 | 556.9236 | 0.0140 | 0.0000 | 557.2722 |
| **Total** | **0.3039** | **1.1299** | **2.2653** | **8.4700e-003** | **0.7224** | **9.3900e-003** | **0.7318** | **0.1931** | **8.8300e-003** | **0.2020** | **0.0000** | **777.9274** | **777.9274** | **0.0316** | **0.0000** | **778.7177** |

# 3.5 Building Construction - 2021

## Unmitigated Construction On-Site

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

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.2481 | 2.2749 | 2.1631 | 3.5100e-003 | | 0.1251 | 0.1251 | | 0.1176 | 0.1176 | 0.0000 | 302.2867 | 302.2867 | 0.0729 | 0.0000 | 304.1099 |
| **Total** | **0.2481** | **2.2749** | **2.1631** | **3.5100e-003** | | **0.1251** | **0.1251** | | **0.1176** | **0.1176** | **0.0000** | **302.2867** | **302.2867** | **0.0729** | **0.0000** | **304.1099** |

## 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 | 0.0523 | 2.0443 | 0.3933 | 5.5900e-003 | 0.1385 | 3.9100e-003 | 0.1424 | 0.0400 | 3.7400e-003 | 0.0437 | 0.0000 | 534.8868 | 534.8868 | 0.0408 | 0.0000 | 535.9069 |
| Worker | 0.6334 | 0.4268 | 4.6505 | 0.0145 | 1.6237 | 9.7300e-003 | 1.6334 | 0.4312 | 8.9600e-003 | 0.4401 | 0.0000 | 1,313.0572 | 1,313.0572 | 0.0306 | 0.0000 | 1,313.8218 |
| **Total** | **0.6857** | **2.4711** | **5.0438** | **0.0201** | **1.7622** | **0.0136** | **1.7758** | **0.4711** | **0.0127** | **0.4838** | **0.0000** | **1,847.9440** | **1,847.9440** | **0.0714** | **0.0000** | **1,849.7288** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2481 | 2.2749 | 2.1631 | 3.5100e-003 | | 0.1251 | 0.1251 | | 0.1176 | 0.1176 | 0.0000 | 302.2863 | 302.2863 | 0.0729 | 0.0000 | 304.1095 |
| **Total** | **0.2481** | **2.2749** | **2.1631** | **3.5100e-003** | | **0.1251** | **0.1251** | | **0.1176** | **0.1176** | **0.0000** | **302.2863** | **302.2863** | **0.0729** | **0.0000** | **304.1095** |

**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 | 0.0523 | 2.0443 | 0.3933 | 5.5900e-003 | 0.1385 | 3.9100e-003 | 0.1424 | 0.0400 | 3.7400e-003 | 0.0437 | 0.0000 | 534.8868 | 534.8868 | 0.0408 | 0.0000 | 535.9069 |
| Worker | 0.6334 | 0.4268 | 4.6505 | 0.0145 | 1.6237 | 9.7300e-003 | 1.6334 | 0.4312 | 8.9600e-003 | 0.4401 | 0.0000 | 1,313.0572 | 1,313.0572 | 0.0306 | 0.0000 | 1,313.8218 |
| **Total** | **0.6857** | **2.4711** | **5.0438** | **0.0201** | **1.7622** | **0.0136** | **1.7758** | **0.4711** | **0.0127** | **0.4838** | **0.0000** | **1,847.9440** | **1,847.9440** | **0.0714** | **0.0000** | **1,849.7288** |

## 3.5 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2218 | 2.0300 | 2.1272 | 3.5000e-003 | | 0.1052 | 0.1052 | | 0.0990 | 0.0990 | 0.0000 | 301.2428 | 301.2428 | 0.0722 | 0.0000 | 303.0471 |
| **Total** | **0.2218** | **2.0300** | **2.1272** | **3.5000e-003** | | **0.1052** | **0.1052** | | **0.0990** | **0.0990** | **0.0000** | **301.2428** | **301.2428** | **0.0722** | **0.0000** | **303.0471** |

**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 | 0.0486 | 1.9185 | 0.3649 | 5.5200e-003 | 0.1379 | 3.2800e-003 | 0.1412 | 0.0398 | 3.1300e-003 | 0.0429 | 0.0000 | 528.2540 | 528.2540 | 0.0385 | 0.0000 | 529.2168 |
| Worker | 0.5912 | 0.3825 | 4.2676 | 0.0139 | 1.6175 | 9.4400e-003 | 1.6269 | 0.4295 | 8.6900e-003 | 0.4382 | 0.0000 | 1,260.2946 | 1,260.2946 | 0.0274 | 0.0000 | 1,260.9792 |
| **Total** | **0.6398** | **2.3011** | **4.6326** | **0.0195** | **1.7554** | **0.0127** | **1.7681** | **0.4693** | **0.0118** | **0.4811** | **0.0000** | **1,788.5486** | **1,788.5486** | **0.0659** | **0.0000** | **1,790.1960** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2218 | 2.0300 | 2.1272 | 3.5000e-003 | | 0.1052 | 0.1052 | | 0.0990 | 0.0990 | 0.0000 | 301.2425 | 301.2425 | 0.0722 | 0.0000 | 303.0467 |
| **Total** | **0.2218** | **2.0300** | **2.1272** | **3.5000e-003** | | **0.1052** | **0.1052** | | **0.0990** | **0.0990** | **0.0000** | **301.2425** | **301.2425** | **0.0722** | **0.0000** | **303.0467** |

## 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 | 0.0486 | 1.9185 | 0.3649 | 5.5200e-003 | 0.1379 | 3.2800e-003 | 0.1412 | 0.0398 | 3.1300e-003 | 0.0429 | 0.0000 | 528.2540 | 528.2540 | 0.0385 | 0.0000 | 529.2168 |
| Worker | 0.5912 | 0.3825 | 4.2676 | 0.0139 | 1.6175 | 9.4400e-003 | 1.6269 | 0.4295 | 8.6900e-003 | 0.4382 | 0.0000 | 1,260.2946 | 1,260.2946 | 0.0274 | 0.0000 | 1,260.9792 |
| **Total** | **0.6398** | **2.3011** | **4.6326** | **0.0195** | **1.7554** | **0.0127** | **1.7681** | **0.4693** | **0.0118** | **0.4811** | **0.0000** | **1,788.5486** | **1,788.5486** | **0.0659** | **0.0000** | **1,790.1960** |

## 3.5 Building Construction - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0881 | 0.8056 | 0.9097 | 1.5100e-003 | | 0.0392 | 0.0392 | | 0.0369 | 0.0369 | 0.0000 | 129.8107 | 129.8107 | 0.0309 | 0.0000 | 130.5827 |
| **Total** | **0.0881** | **0.8056** | **0.9097** | **1.5100e-003** | | **0.0392** | **0.0392** | | **0.0369** | **0.0369** | **0.0000** | **129.8107** | **129.8107** | **0.0309** | **0.0000** | **130.5827** |

### 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 | 0.0160 | 0.6181 | 0.1369 | 2.3100e-003 | 0.0594 | 6.3000e-004 | 0.0600 | 0.0171 | 6.0000e-004 | 0.0177 | 0.0000 | 221.5603 | 221.5603 | 0.0127 | 0.0000 | 221.8777 |
| Worker | 0.2392 | 0.1485 | 1.6945 | 5.7700e-003 | 0.6968 | 3.9700e-003 | 0.7007 | 0.1850 | 3.6500e-003 | 0.1887 | 0.0000 | 522.2914 | 522.2914 | 0.0106 | 0.0000 | 522.5564 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **0.2552** | **0.7666** | **1.8314** | **8.0800e-003** | **0.7562** | **4.6000e-003** | **0.7608** | **0.2022** | **4.2500e-003** | **0.2064** | **0.0000** | **743.8517** | **743.8517** | **0.0233** | **0.0000** | **744.4341** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0881 | 0.8056 | 0.9097 | 1.5100e-003 | | 0.0392 | 0.0392 | | 0.0369 | 0.0369 | 0.0000 | 129.8105 | 129.8105 | 0.0309 | 0.0000 | 130.5825 |
| **Total** | **0.0881** | **0.8056** | **0.9097** | **1.5100e-003** | | **0.0392** | **0.0392** | | **0.0369** | **0.0369** | **0.0000** | **129.8105** | **129.8105** | **0.0309** | **0.0000** | **130.5825** |

**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 | 0.0160 | 0.6181 | 0.1369 | 2.3100e-003 | 0.0594 | 6.3000e-004 | 0.0600 | 0.0171 | 6.0000e-004 | 0.0177 | 0.0000 | 221.5603 | 221.5603 | 0.0127 | 0.0000 | 221.8777 |
| Worker | 0.2392 | 0.1485 | 1.6945 | 5.7700e-003 | 0.6968 | 3.9700e-003 | 0.7007 | 0.1850 | 3.6500e-003 | 0.1887 | 0.0000 | 522.2914 | 522.2914 | 0.0106 | 0.0000 | 522.5564 |
| **Total** | **0.2552** | **0.7666** | **1.8314** | **8.0800e-003** | **0.7562** | **4.6000e-003** | **0.7608** | **0.2022** | **4.2500e-003** | **0.2064** | **0.0000** | **743.8517** | **743.8517** | **0.0233** | **0.0000** | **744.4341** |

## 3.6 Paving - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0284 | 0.2803 | 0.4011 | 6.3000e-004 | | 0.0140 | 0.0140 | | 0.0129 | 0.0129 | 0.0000 | 55.0739 | 55.0739 | 0.0178 | 0.0000 | 55.5192 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0284** | **0.2803** | **0.4011** | **6.3000e-004** | | **0.0140** | **0.0140** | | **0.0129** | **0.0129** | **0.0000** | **55.0739** | **55.0739** | **0.0178** | **0.0000** | **55.5192** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5600e-003 | 9.7000e-004 | 0.0110 | 4.0000e-005 | 4.5300e-003 | 3.0000e-005 | 4.5600e-003 | 1.2000e-003 | 2.0000e-005 | 1.2300e-003 | 0.0000 | 3.3986 | 3.3986 | 7.0000e-005 | 0.0000 | 3.4003 |
| **Total** | **1.5600e-003** | **9.7000e-004** | **0.0110** | **4.0000e-005** | **4.5300e-003** | **3.0000e-005** | **4.5600e-003** | **1.2000e-003** | **2.0000e-005** | **1.2300e-003** | **0.0000** | **3.3986** | **3.3986** | **7.0000e-005** | **0.0000** | **3.4003** |

## Mitigated Construction On-Site

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0284 | 0.2803 | 0.4011 | 6.3000e-004 | | 0.0140 | 0.0140 | | 0.0129 | 0.0129 | 0.0000 | 55.0738 | 55.0738 | 0.0178 | 0.0000 | 55.5191 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0284** | **0.2803** | **0.4011** | **6.3000e-004** | | **0.0140** | **0.0140** | | **0.0129** | **0.0129** | **0.0000** | **55.0738** | **55.0738** | **0.0178** | **0.0000** | **55.5191** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5600e-003 | 9.7000e-004 | 0.0110 | 4.0000e-005 | 4.5300e-003 | 3.0000e-005 | 4.5600e-003 | 1.2000e-003 | 2.0000e-005 | 1.2300e-003 | 0.0000 | 3.3986 | 3.3986 | 7.0000e-005 | 0.0000 | 3.4003 |
| **Total** | **1.5600e-003** | **9.7000e-004** | **0.0110** | **4.0000e-005** | **4.5300e-003** | **3.0000e-005** | **4.5600e-003** | **1.2000e-003** | **2.0000e-005** | **1.2300e-003** | **0.0000** | **3.3986** | **3.3986** | **7.0000e-005** | **0.0000** | **3.4003** |

## 3.7 Architectural Coating - 2023

**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 | 4.9182 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.2700e-003 | 0.0358 | 0.0498 | 8.0000e-005 | | 1.9500e-003 | 1.9500e-003 | | 1.9500e-003 | 1.9500e-003 | 0.0000 | 7.0215 | 7.0215 | 4.2000e-004 | 0.0000 | 7.0320 |
| **Total** | **4.9235** | **0.0358** | **0.0498** | **8.0000e-005** | | **1.9500e-003** | **1.9500e-003** | | **1.9500e-003** | **1.9500e-003** | **0.0000** | **7.0215** | **7.0215** | **4.2000e-004** | **0.0000** | **7.0320** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0235 | 0.0146 | 0.1661 | 5.7000e-004 | 0.0683 | 3.9000e-004 | 0.0687 | 0.0181 | 3.6000e-004 | 0.0185 | 0.0000 | 51.2059 | 51.2059 | 1.0400e-003 | 0.0000 | 51.2318 |
| **Total** | **0.0235** | **0.0146** | **0.1661** | **5.7000e-004** | **0.0683** | **3.9000e-004** | **0.0687** | **0.0181** | **3.6000e-004** | **0.0185** | **0.0000** | **51.2059** | **51.2059** | **1.0400e-003** | **0.0000** | **51.2318** |

## 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 | 4.9182 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.2700e-003 | 0.0358 | 0.0498 | 8.0000e-005 | | 1.9500e-003 | 1.9500e-003 | | 1.9500e-003 | 1.9500e-003 | 0.0000 | 7.0214 | 7.0214 | 4.2000e-004 | 0.0000 | 7.0319 |
| **Total** | **4.9235** | **0.0358** | **0.0498** | **8.0000e-005** | | **1.9500e-003** | **1.9500e-003** | | **1.9500e-003** | **1.9500e-003** | **0.0000** | **7.0214** | **7.0214** | **4.2000e-004** | **0.0000** | **7.0319** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0235 | 0.0146 | 0.1661 | 5.7000e-004 | 0.0683 | 3.9000e-004 | 0.0687 | 0.0181 | 3.6000e-004 | 0.0185 | 0.0000 | 51.2059 | 51.2059 | 1.0400e-003 | 0.0000 | 51.2318 |
| **Total** | **0.0235** | **0.0146** | **0.1661** | **5.7000e-004** | **0.0683** | **3.9000e-004** | **0.0687** | **0.0181** | **3.6000e-004** | **0.0185** | **0.0000** | **51.2059** | **51.2059** | **1.0400e-003** | **0.0000** | **51.2318** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

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

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Mid Rise | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 0.00 | 0.00 | 0.00 | 86 | 11 | 3 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.565475 | 0.033834 | 0.192058 | 0.100675 | 0.009211 | 0.004032 | 0.016699 | 0.069908 | 0.001423 | 0.001062 | 0.004327 | 0.000756 | 0.000539 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 2,082.8598 | 2,082.8598 | 0.0860 | 0.0178 | 2,090.3113 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2,287.8421 | 2,287.8421 | 0.0945 | 0.0195 | 2,296.0269 |
| NaturalGas Mitigated | 0.0860 | 0.7352 | 0.3128 | 4.6900e-003 | | 0.0594 | 0.0594 | | 0.0594 | 0.0594 | 0.0000 | 851.3882 | 851.3882 | 0.0163 | 0.0156 | 856.4476 |
| NaturalGas Unmitigated | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 1,241.0444 | 1,241.0444 | 0.0238 | 0.0228 | 1,248.4193 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Mid Rise | 2.32563e+007 | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 1,241.0444 | 1,241.0444 | 0.0238 | 0.0228 | 1,248.4193 |
| **Total** | | **0.1254** | **1.0716** | **0.4560** | **6.8400e-003** | | **0.0866** | **0.0866** | | **0.0866** | **0.0866** | **0.0000** | **1,241.0444** | **1,241.0444** | **0.0238** | **0.0228** | **1,248.4193** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Mid Rise | 1.59544e+007 | 0.0860 | 0.7352 | 0.3128 | 4.6900e-003 | | 0.0594 | 0.0594 | | 0.0594 | 0.0594 | 0.0000 | 851.3882 | 851.3882 | 0.0163 | 0.0156 | 856.4476 |
| **Total** | | **0.0860** | **0.7352** | **0.3128** | **4.6900e-003** | | **0.0594** | **0.0594** | | **0.0594** | **0.0594** | **0.0000** | **851.3882** | **851.3882** | **0.0163** | **0.0156** | **856.4476** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |

| | | | | | |
|---|---|---|---|---|---|
| Apartments Mid Rise | 7.18044e+006 | 2,287.8421 | 0.0945 | 0.0195 | 2,296.0269 |
| **Total** | | **2,287.8421** | **0.0945** | **0.0195** | **2,296.0269** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Mid Rise | 6.5371e+006 | 2,082.8598 | 0.0860 | 0.0178 | 2,090.3113 |
| **Total** | | **2,082.8598** | **0.0860** | **0.0178** | **2,090.3113** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 6.6553 | 0.1864 | 16.1545 | 8.6000e-004 | | 0.0899 | 0.0899 | | 0.0899 | 0.0899 | 0.0000 | 26.4812 | 26.4812 | 0.0252 | 0.0000 | 27.1114 |
| Unmitigated | 6.6553 | 0.1864 | 16.1545 | 8.6000e-004 | | 0.0899 | 0.0899 | | 0.0899 | 0.0899 | 0.0000 | 26.4812 | 26.4812 | 0.0252 | 0.0000 | 27.1114 |

## 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 | 0.4918 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 5.6804 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.4830 | 0.1864 | 16.1545 | 8.6000e-004 | | 0.0899 | 0.0899 | | 0.0899 | 0.0899 | 0.0000 | 26.4812 | 26.4812 | 0.0252 | 0.0000 | 27.1114 |
| **Total** | **6.6553** | **0.1864** | **16.1545** | **8.6000e-004** | | **0.0899** | **0.0899** | | **0.0899** | **0.0899** | **0.0000** | **26.4812** | **26.4812** | **0.0252** | **0.0000** | **27.1114** |

**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 | 0.4918 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 5.6804 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.4830 | 0.1864 | 16.1545 | 8.6000e-004 | | 0.0899 | 0.0899 | | 0.0899 | 0.0899 | 0.0000 | 26.4812 | 26.4812 | 0.0252 | 0.0000 | 27.1114 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **6.6553** | **0.1864** | **16.1545** | **8.6000e-004** | | **0.0899** | **0.0899** | | **0.0899** | **0.0899** | **0.0000** | **26.4812** | **26.4812** | **0.0252** | **0.0000** | **27.1114** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| Unmitigated | 685.9916 | 3.3644 | 0.0844 | 795.2487 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Mid Rise | 102.422 / 64.5705 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | | **685.9916** | **3.3644** | **0.0844** | **795.2487** |

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Mid Rise | 102.422 / 64.5705 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | | **685.9916** | **3.3644** | **0.0844** | **795.2487** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| Unmitigated | 146.7868 | 8.6749 | 0.0000 | 363.6582 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Mid Rise | 723.12 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| **Total** | | **146.7868** | **8.6749** | **0.0000** | **363.6582** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Mid Rise | 723.12 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| **Total** | | **146.7868** | **8.6749** | **0.0000** | **363.6582** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

## 11.0 Vegetation

# City of Murrieta General Plan Update - Residential

**Riverside-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Apartments Mid Rise | 1,572.00 | Dwelling Unit | 41.37 | 1,572,000.00 | 4496 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2035 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - GP Update will add 1,572 multi-family dwelling units.

Construction Phase -

Vehicle Trips - On-road transportation analyzed in seperate CalEEMod run

Woodstoves - No woodstoves or fireplaces

Energy Mitigation - Increased efficiency to meet 2019 Title 24 Standards

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFireplaces | NumberGas | 1,336.20 | 0.00 |

| | | | |
|---|---|---|---|
| tblFireplaces | NumberNoFireplace | 157.20 | 0.00 |
| tblFireplaces | NumberWood | 78.60 | 0.00 |
| tblVehicleTrips | HO_TTP | 40.60 | 0.00 |
| tblVehicleTrips | HS_TTP | 19.20 | 0.00 |
| tblVehicleTrips | HW_TTP | 40.20 | 0.00 |
| tblVehicleTrips | ST_TR | 6.39 | 0.00 |
| tblVehicleTrips | SU_TR | 5.86 | 0.00 |
| tblVehicleTrips | WD_TR | 6.65 | 0.00 |
| tblWoodstoves | NumberCatalytic | 78.60 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 78.60 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2020 | 8.3486 | 50.2577 | 65.6548 | 0.1960 | 18.2675 | 2.1986 | 20.4661 | 9.9840 | 2.0227 | 12.0068 | 0.0000 | 19,649.6807 | 19,649.6807 | 1.9481 | 0.0000 | 19,681.9185 |
| 2021 | 7.6599 | 36.0361 | 61.2003 | 0.1914 | 13.7289 | 1.0628 | 14.7916 | 3.6654 | 0.9982 | 4.6636 | 0.0000 | 19,196.9614 | 19,196.9614 | 1.2318 | 0.0000 | 19,227.7569 |
| 2022 | 7.0919 | 33.0348 | 57.5457 | 0.1866 | 13.7288 | 0.9065 | 14.6353 | 3.6654 | 0.8518 | 4.5171 | 0.0000 | 18,718.4537 | 18,718.4537 | 1.1811 | 0.0000 | 18,747.9819 |
| 2023 | 179.9749 | 27.8957 | 54.1433 | 0.1810 | 13.7288 | 0.7817 | 14.5105 | 3.6654 | 0.7343 | 4.3996 | 0.0000 | 18,156.9672 | 18,156.9672 | 1.0782 | 0.0000 | 18,183.9227 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Maximum** | **179.9749** | **50.2577** | **65.6548** | **0.1960** | **18.2675** | **2.1986** | **20.4661** | **9.9840** | **2.0227** | **12.0068** | **0.0000** | **19,649.6807** | **19,649.6807** | **1.9481** | **0.0000** | **19,681.9185** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2020 | 8.3486 | 50.2577 | 65.6548 | 0.1960 | 18.2675 | 2.1986 | 20.4661 | 9.9840 | 2.0227 | 12.0068 | 0.0000 | 19,649.6807 | 19,649.6807 | 1.9481 | 0.0000 | 19,681.9185 |
| 2021 | 7.6599 | 36.0361 | 61.2003 | 0.1914 | 13.7289 | 1.0628 | 14.7916 | 3.6654 | 0.9982 | 4.6636 | 0.0000 | 19,196.9614 | 19,196.9614 | 1.2318 | 0.0000 | 19,227.7569 |
| 2022 | 7.0919 | 33.0348 | 57.5457 | 0.1866 | 13.7288 | 0.9065 | 14.6353 | 3.6654 | 0.8518 | 4.5171 | 0.0000 | 18,718.4537 | 18,718.4537 | 1.1811 | 0.0000 | 18,747.9819 |
| 2023 | 179.9749 | 27.8957 | 54.1433 | 0.1810 | 13.7288 | 0.7817 | 14.5105 | 3.6654 | 0.7343 | 4.3996 | 0.0000 | 18,156.9672 | 18,156.9672 | 1.0782 | 0.0000 | 18,183.9227 |
| **Maximum** | **179.9749** | **50.2577** | **65.6548** | **0.1960** | **18.2675** | **2.1986** | **20.4661** | **9.9840** | **2.0227** | **12.0068** | **0.0000** | **19,649.6807** | **19,649.6807** | **1.9481** | **0.0000** | **19,681.9185** |

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

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 37.6846 | 1.4910 | 129.2361 | 6.8500e-003 | | 0.7192 | 0.7192 | | 0.7192 | 0.7192 | 0.0000 | 233.5242 | 233.5242 | 0.2223 | 0.0000 | 239.0818 |
| Energy | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| Mobile | 0.0000 | 0.0000 | 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** | **38.3717** | **7.3629** | **131.7348** | **0.0443** | **0.0000** | **1.1940** | **1.1940** | **0.0000** | **1.1940** | **1.1940** | **0.0000** | **7,729.5093** | **7,729.5093** | **0.3660** | **0.1374** | **7,779.6118** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 37.6846 | 1.4910 | 129.2361 | 6.8500e-003 | | 0.7192 | 0.7192 | | 0.7192 | 0.7192 | 0.0000 | 233.5242 | 233.5242 | 0.2223 | 0.0000 | 239.0818 |
| Energy | 0.4714 | 4.0282 | 1.7142 | 0.0257 | | 0.3257 | 0.3257 | | 0.3257 | 0.3257 | | 5,142.4377 | 5,142.4377 | 0.0986 | 0.0943 | 5,172.9966 |
| Mobile | 0.0000 | 0.0000 | 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** | **38.1560** | **5.5193** | **130.9503** | **0.0326** | **0.0000** | **1.0449** | **1.0449** | **0.0000** | **1.0449** | **1.0449** | **0.0000** | **5,375.9619** | **5,375.9619** | **0.3209** | **0.0943** | **5,412.0784** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.56** | **25.04** | **0.60** | **26.55** | **0.00** | **12.48** | **12.48** | **0.00** | **12.48** | **12.48** | **0.00** | **30.45** | **30.45** | **12.33** | **31.40** | **30.43** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2020 | 3/10/2020 | 5 | 50 | |
| 2 | Site Preparation | Site Preparation | 3/11/2020 | 4/21/2020 | 5 | 30 | |
| 3 | Grading | Grading | 4/22/2020 | 8/4/2020 | 5 | 75 | |
| 4 | Building Construction | Building Construction | 8/5/2020 | 6/6/2023 | 5 | 740 | |
| 5 | Paving | Paving | 6/7/2023 | 8/22/2023 | 5 | 55 | |
| 6 | Architectural Coating | Architectural Coating | 8/23/2023 | 11/7/2023 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 3,183,300; Residential Outdoor: 1,061,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |

| | | | | | |
|---|---|---|---|---|---|
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,132.00 | 168.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 226.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.3121 | 33.2010 | 21.7532 | 0.0388 | | 1.6587 | 1.6587 | | 1.5419 | 1.5419 | | 3,747.7049 | 3,747.7049 | 1.0580 | | 3,774.1536 |
| **Total** | **3.3121** | **33.2010** | **21.7532** | **0.0388** | | **1.6587** | **1.6587** | | **1.5419** | **1.5419** | | **3,747.7049** | **3,747.7049** | **1.0580** | | **3,774.1536** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0763 | 0.0451 | 0.6048 | 1.6600e-003 | 0.1677 | 1.0200e-003 | 0.1687 | 0.0445 | 9.3000e-004 | 0.0454 | | 165.2392 | 165.2392 | 4.2400e-003 | | 165.3451 |
| **Total** | **0.0763** | **0.0451** | **0.6048** | **1.6600e-003** | **0.1677** | **1.0200e-003** | **0.1687** | **0.0445** | **9.3000e-004** | **0.0454** | | **165.2392** | **165.2392** | **4.2400e-003** | | **165.3451** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.3121 | 33.2010 | 21.7532 | 0.0388 | | 1.6587 | 1.6587 | | 1.5419 | 1.5419 | 0.0000 | 3,747.7049 | 3,747.7049 | 1.0580 | | 3,774.1536 |
| **Total** | **3.3121** | **33.2010** | **21.7532** | **0.0388** | | **1.6587** | **1.6587** | | **1.5419** | **1.5419** | **0.0000** | **3,747.7049** | **3,747.7049** | **1.0580** | | **3,774.1536** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0763 | 0.0451 | 0.6048 | 1.6600e-003 | 0.1677 | 1.0200e-003 | 0.1687 | 0.0445 | 9.3000e-004 | 0.0454 | | 165.2392 | 165.2392 | 4.2400e-003 | | 165.3451 |
| **Total** | **0.0763** | **0.0451** | **0.6048** | **1.6600e-003** | **0.1677** | **1.0200e-003** | **0.1687** | **0.0445** | **9.3000e-004** | **0.0454** | | **165.2392** | **165.2392** | **4.2400e-003** | | **165.3451** |

## 3.3 Site Preparation - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.0765 | 42.4173 | 21.5136 | 0.0380 | | 2.1974 | 2.1974 | | 2.0216 | 2.0216 | | 3,685.1016 | 3,685.1016 | 1.1918 | | 3,714.8975 |
| **Total** | **4.0765** | **42.4173** | **21.5136** | **0.0380** | **18.0663** | **2.1974** | **20.2637** | **9.9307** | **2.0216** | **11.9523** | | **3,685.1016** | **3,685.1016** | **1.1918** | | **3,714.8975** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0916 | 0.0542 | 0.7258 | 1.9900e-003 | 0.2012 | 1.2200e-003 | 0.2024 | 0.0534 | 1.1200e-003 | 0.0545 | | 198.2870 | 198.2870 | 5.0800e-003 | | 198.4141 |
| **Total** | **0.0916** | **0.0542** | **0.7258** | **1.9900e-003** | **0.2012** | **1.2200e-003** | **0.2024** | **0.0534** | **1.1200e-003** | **0.0545** | | **198.2870** | **198.2870** | **5.0800e-003** | | **198.4141** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.0765 | 42.4173 | 21.5136 | 0.0380 | | 2.1974 | 2.1974 | | 2.0216 | 2.0216 | 0.0000 | 3,685.1016 | 3,685.1016 | 1.1918 | | 3,714.8975 |
| **Total** | **4.0765** | **42.4173** | **21.5136** | **0.0380** | **18.0663** | **2.1974** | **20.2637** | **9.9307** | **2.0216** | **11.9523** | **0.0000** | **3,685.1016** | **3,685.1016** | **1.1918** | | **3,714.8975** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0916 | 0.0542 | 0.7258 | 1.9900e-003 | 0.2012 | 1.2200e-003 | 0.2024 | 0.0534 | 1.1200e-003 | 0.0545 | | 198.2870 | 198.2870 | 5.0800e-003 | | 198.4141 |
| **Total** | **0.0916** | **0.0542** | **0.7258** | **1.9900e-003** | **0.2012** | **1.2200e-003** | **0.2024** | **0.0534** | **1.1200e-003** | **0.0545** | | **198.2870** | **198.2870** | **5.0800e-003** | | **198.4141** |

## 3.4 Grading - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4501 | 50.1975 | 31.9583 | 0.0620 | | 2.1739 | 2.1739 | | 2.0000 | 2.0000 | | 6,005.8653 | 6,005.8653 | 1.9424 | | 6,054.4257 |
| **Total** | **4.4501** | **50.1975** | **31.9583** | **0.0620** | **8.6733** | **2.1739** | **10.8472** | **3.5965** | **2.0000** | **5.5965** | | **6,005.8653** | **6,005.8653** | **1.9424** | | **6,054.4257** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1018 | 0.0602 | 0.8064 | 2.2100e-003 | 0.2236 | 1.3500e-003 | 0.2249 | 0.0593 | 1.2500e-003 | 0.0605 | | 220.3189 | 220.3189 | 5.6500e-003 | | 220.4601 |
| **Total** | **0.1018** | **0.0602** | **0.8064** | **2.2100e-003** | **0.2236** | **1.3500e-003** | **0.2249** | **0.0593** | **1.2500e-003** | **0.0605** | | **220.3189** | **220.3189** | **5.6500e-003** | | **220.4601** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4501 | 50.1975 | 31.9583 | 0.0620 | | 2.1739 | 2.1739 | | 2.0000 | 2.0000 | 0.0000 | 6,005.8653 | 6,005.8653 | 1.9424 | | 6,054.4257 |
| **Total** | **4.4501** | **50.1975** | **31.9583** | **0.0620** | **8.6733** | **2.1739** | **10.8472** | **3.5965** | **2.0000** | **5.5965** | **0.0000** | **6,005.8653** | **6,005.8653** | **1.9424** | | **6,054.4257** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1018 | 0.0602 | 0.8064 | 2.2100e-003 | 0.2236 | 1.3500e-003 | 0.2249 | 0.0593 | 1.2500e-003 | 0.0605 | | 220.3189 | 220.3189 | 5.6500e-003 | | 220.4601 |
| **Total** | **0.1018** | **0.0602** | **0.8064** | **2.2100e-003** | **0.2236** | **1.3500e-003** | **0.2249** | **0.0593** | **1.2500e-003** | **0.0605** | | **220.3189** | **220.3189** | **5.6500e-003** | | **220.4601** |

## 3.5 Building Construction - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.1198 | 19.1860 | 16.8485 | 0.0269 | | 1.1171 | 1.1171 | | 1.0503 | 1.0503 | | 2,553.0631 | 2,553.0631 | 0.6229 | | 2,568.6345 |
| **Total** | **2.1198** | **19.1860** | **16.8485** | **0.0269** | | **1.1171** | **1.1171** | | **1.0503** | **1.0503** | | **2,553.0631** | **2,553.0631** | **0.6229** | | **2,568.6345** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.4683 | 17.2858 | 3.1623 | 0.0439 | 1.0758 | 0.0983 | 1.1741 | 0.3098 | 0.0941 | 0.4038 | | 4,626.5675 | 4,626.5675 | 0.3470 | | 4,635.2429 |
| Worker | 5.7605 | 3.4068 | 45.6439 | 0.1252 | 12.6531 | 0.0766 | 12.7297 | 3.3557 | 0.0706 | 3.4262 | | 12,470.0502 | 12,470.0502 | 0.3196 | | 12,478.0411 |
| **Total** | **6.2288** | **20.6926** | **48.8063** | **0.1691** | **13.7289** | **0.1749** | **13.9038** | **3.6654** | **0.1646** | **3.8300** | | **17,096.6177** | **17,096.6177** | **0.6667** | | **17,113.2840** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.1198 | 19.1860 | 16.8485 | 0.0269 | | 1.1171 | 1.1171 | | 1.0503 | 1.0503 | 0.0000 | 2,553.0631 | 2,553.0631 | 0.6229 | | 2,568.6345 |
| **Total** | **2.1198** | **19.1860** | **16.8485** | **0.0269** | | **1.1171** | **1.1171** | | **1.0503** | **1.0503** | **0.0000** | **2,553.0631** | **2,553.0631** | **0.6229** | | **2,568.6345** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.4683 | 17.2858 | 3.1623 | 0.0439 | 1.0758 | 0.0983 | 1.1741 | 0.3098 | 0.0941 | 0.4038 | | 4,626.5675 | 4,626.5675 | 0.3470 | | 4,635.2429 |
| Worker | 5.7605 | 3.4068 | 45.6439 | 0.1252 | 12.6531 | 0.0766 | 12.7297 | 3.3557 | 0.0706 | 3.4262 | | 12,470.0502 | 12,470.0502 | 0.3196 | | 12,478.0411 |
| **Total** | **6.2288** | **20.6926** | **48.8063** | **0.1691** | **13.7289** | **0.1749** | **13.9038** | **3.6654** | **0.1646** | **3.8300** | | **17,096.6177** | **17,096.6177** | **0.6667** | | **17,113.2840** |

## 3.5 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.9009 | 17.4321 | 16.5752 | 0.0269 | | 0.9586 | 0.9586 | | 0.9013 | 0.9013 | | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **1.9009** | **17.4321** | **16.5752** | **0.0269** | | **0.9586** | **0.9586** | | **0.9013** | **0.9013** | | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3922 | 15.5466 | 2.7738 | 0.0435 | 1.0758 | 0.0296 | 1.1053 | 0.3097 | 0.0283 | 0.3380 | | 4,590.6172 | 4,590.6172 | 0.3284 | | 4,598.8275 |
| Worker | 5.3668 | 3.0574 | 41.8514 | 0.1210 | 12.6531 | 0.0746 | 12.7277 | 3.3557 | 0.0687 | 3.4243 | | 12,052.9803 | 12,052.9803 | 0.2874 | | 12,060.1652 |
| **Total** | **5.7590** | **18.6040** | **44.6251** | **0.1645** | **13.7289** | **0.1041** | **13.8330** | **3.6654** | **0.0969** | **3.7623** | | **16,643.5975** | **16,643.5975** | **0.6158** | | **16,658.9927** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.9009 | 17.4321 | 16.5752 | 0.0269 | | 0.9586 | 0.9586 | | 0.9013 | 0.9013 | 0.0000 | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **1.9009** | **17.4321** | **16.5752** | **0.0269** | | **0.9586** | **0.9586** | | **0.9013** | **0.9013** | **0.0000** | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3922 | 15.5466 | 2.7738 | 0.0435 | 1.0758 | 0.0296 | 1.1053 | 0.3097 | 0.0283 | 0.3380 | | 4,590.6172 | 4,590.6172 | 0.3284 | | 4,598.8275 |
| Worker | 5.3668 | 3.0574 | 41.8514 | 0.1210 | 12.6531 | 0.0746 | 12.7277 | 3.3557 | 0.0687 | 3.4243 | | 12,052.9803 | 12,052.9803 | 0.2874 | | 12,060.1652 |
| **Total** | **5.7590** | **18.6040** | **44.6251** | **0.1645** | **13.7289** | **0.1041** | **13.8330** | **3.6654** | **0.0969** | **3.7623** | | **16,643.5975** | **16,643.5975** | **0.6158** | | **16,658.9927** |

## 3.5 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3657 | 14.6677 | 2.5799 | 0.0431 | 1.0757 | 0.0249 | 1.1006 | 0.3097 | 0.0238 | 0.3335 | | 4,551.5430 | 4,551.5430 | 0.3110 | | 4,559.3188 |
| Worker | 5.0199 | 2.7515 | 38.6023 | 0.1165 | 12.6531 | 0.0726 | 12.7257 | 3.3557 | 0.0668 | 3.4225 | | 11,612.5772 | 11,612.5772 | 0.2582 | | 11,619.0309 |
| **Total** | **5.3856** | **17.4192** | **41.1823** | **0.1597** | **13.7288** | **0.0975** | **13.8263** | **3.6654** | **0.0906** | **3.7560** | | **16,164.1202** | **16,164.1202** | **0.5692** | | **16,178.3497** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3657 | 14.6677 | 2.5799 | 0.0431 | 1.0757 | 0.0249 | 1.1006 | 0.3097 | 0.0238 | 0.3335 | | 4,551.5430 | 4,551.5430 | 0.3110 | | 4,559.3188 |
| Worker | 5.0199 | 2.7515 | 38.6023 | 0.1165 | 12.6531 | 0.0726 | 12.7257 | 3.3557 | 0.0668 | 3.4225 | | 11,612.5772 | 11,612.5772 | 0.2582 | | 11,619.0309 |
| **Total** | **5.3856** | **17.4192** | **41.1823** | **0.1597** | **13.7288** | **0.0975** | **13.8263** | **3.6654** | **0.0906** | **3.7560** | | **16,164.1202** | **16,164.1202** | **0.5692** | | **16,178.3497** |

## 3.5 Building Construction - 2023

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.2805 | 11.0295 | 2.2740 | 0.0420 | 1.0757 | 0.0111 | 1.0868 | 0.3097 | 0.0106 | 0.3203 | | 4,430.4884 | 4,430.4884 | 0.2387 | | 4,436.4550 |
| Worker | 4.7067 | 2.4813 | 35.6254 | 0.1121 | 12.6531 | 0.0709 | 12.7240 | 3.3557 | 0.0652 | 3.4209 | | 11,171.2689 | 11,171.2689 | 0.2317 | | 11,177.0617 |
| **Total** | **4.9872** | **13.5108** | **37.8993** | **0.1540** | **13.7288** | **0.0820** | **13.8107** | **3.6654** | **0.0759** | **3.7412** | | **15,601.7573** | **15,601.7573** | **0.4704** | | **15,613.5167** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.2805 | 11.0295 | 2.2740 | 0.0420 | 1.0757 | 0.0111 | 1.0868 | 0.3097 | 0.0106 | 0.3203 | | 4,430.4884 | 4,430.4884 | 0.2387 | | 4,436.4550 |
| Worker | 4.7067 | 2.4813 | 35.6254 | 0.1121 | 12.6531 | 0.0709 | 12.7240 | 3.3557 | 0.0652 | 3.4209 | | 11,171.2689 | 11,171.2689 | 0.2317 | | 11,177.0617 |
| **Total** | **4.9872** | **13.5108** | **37.8993** | **0.1540** | **13.7288** | **0.0820** | **13.8107** | **3.6654** | **0.0759** | **3.7412** | | **15,601.7573** | **15,601.7573** | **0.4704** | | **15,613.5167** |

## 3.6 Paving - 2023

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0624 | 0.0329 | 0.4721 | 1.4900e-003 | 0.1677 | 9.4000e-004 | 0.1686 | 0.0445 | 8.6000e-004 | 0.0453 | | 148.0292 | 148.0292 | 3.0700e-003 | | 148.1059 |
| **Total** | **0.0624** | **0.0329** | **0.4721** | **1.4900e-003** | **0.1677** | **9.4000e-004** | **0.1686** | **0.0445** | **8.6000e-004** | **0.0453** | | **148.0292** | **148.0292** | **3.0700e-003** | | **148.1059** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0624 | 0.0329 | 0.4721 | 1.4900e-003 | 0.1677 | 9.4000e-004 | 0.1686 | 0.0445 | 8.6000e-004 | 0.0453 | | 148.0292 | 148.0292 | 3.0700e-003 | | 148.1059 |
| **Total** | **0.0624** | **0.0329** | **0.4721** | **1.4900e-003** | **0.1677** | **9.4000e-004** | **0.1686** | **0.0445** | **8.6000e-004** | **0.0453** | | **148.0292** | **148.0292** | **3.0700e-003** | | **148.1059** |

## 3.7 Architectural Coating - 2023

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 178.8436 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **179.0352** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.9397 | 0.4954 | 7.1125 | 0.0224 | 2.5262 | 0.0142 | 2.5403 | 0.6700 | 0.0130 | 0.6830 | | 2,230.3063 | 2,230.3063 | 0.0463 | | 2,231.4628 |
| **Total** | **0.9397** | **0.4954** | **7.1125** | **0.0224** | **2.5262** | **0.0142** | **2.5403** | **0.6700** | **0.0130** | **0.6830** | | **2,230.3063** | **2,230.3063** | **0.0463** | | **2,231.4628** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 178.8436 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | 0.0000 | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **179.0352** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | **0.0000** | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.9397 | 0.4954 | 7.1125 | 0.0224 | 2.5262 | 0.0142 | 2.5403 | 0.6700 | 0.0130 | 0.6830 | | 2,230.3063 | 2,230.3063 | 0.0463 | | 2,231.4628 |
| **Total** | **0.9397** | **0.4954** | **7.1125** | **0.0224** | **2.5262** | **0.0142** | **2.5403** | **0.6700** | **0.0130** | **0.6830** | | **2,230.3063** | **2,230.3063** | **0.0463** | | **2,231.4628** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Mid Rise | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 0.00 | 0.00 | 0.00 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.565475 | 0.033834 | 0.192058 | 0.100675 | 0.009211 | 0.004032 | 0.016699 | 0.069908 | 0.001423 | 0.001062 | 0.004327 | 0.000756 | 0.000539 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.4714 | 4.0282 | 1.7142 | 0.0257 | | 0.3257 | 0.3257 | | 0.3257 | 0.3257 | | 5,142.4377 | 5,142.4377 | 0.0986 | 0.0943 | 5,172.9966 |
| NaturalGas Unmitigated | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Mid Rise | 63715.9 | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| **Total** | | **0.6871** | **5.8719** | **2.4987** | **0.0375** | | **0.4748** | **0.4748** | | **0.4748** | **0.4748** | | **7,495.9851** | **7,495.9851** | **0.1437** | **0.1374** | **7,540.5300** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Mid Rise | 43.7107 | 0.4714 | 4.0282 | 1.7142 | 0.0257 | | 0.3257 | 0.3257 | | 0.3257 | 0.3257 | | 5,142.4377 | 5,142.4377 | 0.0986 | 0.0943 | 5,172.9966 |
| **Total** | | **0.4714** | **4.0282** | **1.7142** | **0.0257** | | **0.3257** | **0.3257** | | **0.3257** | **0.3257** | | **5,142.4377** | **5,142.4377** | **0.0986** | **0.0943** | **5,172.9966** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 37.6846 | 1.4910 | 129.2361 | 6.8500e-003 | | 0.7192 | 0.7192 | | 0.7192 | 0.7192 | 0.0000 | 233.5242 | 233.5242 | 0.2223 | 0.0000 | 239.0818 |
| Unmitigated | 37.6846 | 1.4910 | 129.2361 | 6.8500e-003 | | 0.7192 | 0.7192 | | 0.7192 | 0.7192 | 0.0000 | 233.5242 | 233.5242 | 0.2223 | 0.0000 | 239.0818 |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.6949 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 31.1256 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 3.8641 | 1.4910 | 129.2361 | 6.8500e-003 | | 0.7192 | 0.7192 | | 0.7192 | 0.7192 | | 233.5242 | 233.5242 | 0.2223 | | 239.0818 |
| **Total** | **37.6846** | **1.4910** | **129.2361** | **6.8500e-003** | | **0.7192** | **0.7192** | | **0.7192** | **0.7192** | **0.0000** | **233.5242** | **233.5242** | **0.2223** | **0.0000** | **239.0818** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.6949 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 31.1256 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 3.8641 | 1.4910 | 129.2361 | 6.8500e-003 | | 0.7192 | 0.7192 | | 0.7192 | 0.7192 | | 233.5242 | 233.5242 | 0.2223 | | 239.0818 |
| **Total** | **37.6846** | **1.4910** | **129.2361** | **6.8500e-003** | | **0.7192** | **0.7192** | | **0.7192** | **0.7192** | **0.0000** | **233.5242** | **233.5242** | **0.2223** | **0.0000** | **239.0818** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

## 11.0 Vegetation

# Non-Residential Operations CalEEMod Output

# City of Murrieta General Plan Update - Non-Residential

**Riverside-South Coast County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Research & Development | 2,406.00 | 1000sqft | 55.23 | 2,406,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2035 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - GP Update will reduce 2,405,600 SF in non-residential uses.

Construction Phase -

Grading -

Vehicle Trips - On-road transportation analyzed in seperate CalEEMod run

Woodstoves -

Energy Mitigation - Increased efficiency to meet 2019 Title 24 Standards

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|

| | | | |
|---|---|---|---|
| tblVehicleTrips | ST_TR | 1.90 | 0.00 |
| tblVehicleTrips | SU_TR | 1.11 | 0.00 |
| tblVehicleTrips | WD_TR | 8.11 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2019 | 0.2237 | 2.2763 | 1.3152 | 2.3400e-003 | 0.5294 | 0.1155 | 0.6448 | 0.2237 | 0.1069 | 0.3305 | 0.0000 | 209.4537 | 209.4537 | 0.0591 | 0.0000 | 210.9312 |
| 2020 | 0.7694 | 7.5503 | 5.7349 | 0.0195 | 1.3309 | 0.2246 | 1.5554 | 0.4256 | 0.2090 | 0.6346 | 0.0000 | 1,787.1394 | 1,787.1394 | 0.2120 | 0.0000 | 1,792.4381 |
| 2021 | 0.8016 | 7.3595 | 6.2488 | 0.0265 | 1.4292 | 0.1409 | 1.5701 | 0.3870 | 0.1325 | 0.5194 | 0.0000 | 2,449.8809 | 2,449.8809 | 0.1894 | 0.0000 | 2,454.6166 |
| 2022 | 0.7379 | 6.7896 | 5.8860 | 0.0259 | 1.4237 | 0.1193 | 1.5430 | 0.3855 | 0.1122 | 0.4977 | 0.0000 | 2,397.3918 | 2,397.3918 | 0.1811 | 0.0000 | 2,401.9196 |
| 2023 | 0.6693 | 5.4695 | 5.5328 | 0.0252 | 1.4237 | 0.1007 | 1.5244 | 0.3855 | 0.0946 | 0.4801 | 0.0000 | 2,332.3187 | 2,332.3187 | 0.1576 | 0.0000 | 2,336.2574 |
| 2024 | 2.5473 | 3.9002 | 4.1466 | 0.0176 | 0.9653 | 0.0775 | 1.0429 | 0.2613 | 0.0726 | 0.3338 | 0.0000 | 1,619.2272 | 1,619.2272 | 0.1272 | 0.0000 | 1,622.4074 |
| 2025 | 9.0912 | 0.0440 | 0.1642 | 4.9000e-004 | 0.0516 | 1.8600e-003 | 0.0535 | 0.0137 | 1.8300e-003 | 0.0155 | 0.0000 | 43.6106 | 43.6106 | 1.0700e-003 | 0.0000 | 43.6375 |
| **Maximum** | **9.0912** | **7.5503** | **6.2488** | **0.0265** | **1.4292** | **0.2246** | **1.5701** | **0.4256** | **0.2090** | **0.6346** | **0.0000** | **2,449.8809** | **2,449.8809** | **0.2120** | **0.0000** | **2,454.6166** |

**Mitigated Construction**

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

| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2019 | 0.2237 | 2.2762 | 1.3152 | 2.3400e-003 | 0.5294 | 0.1155 | 0.6448 | 0.2237 | 0.1069 | 0.3305 | 0.0000 | 209.4534 | 209.4534 | 0.0591 | 0.0000 | 210.9309 |
| 2020 | 0.7694 | 7.5503 | 5.7349 | 0.0195 | 1.3309 | 0.2246 | 1.5554 | 0.4256 | 0.2090 | 0.6346 | 0.0000 | 1,787.1389 | 1,787.1389 | 0.2120 | 0.0000 | 1,792.4375 |
| 2021 | 0.8016 | 7.3595 | 6.2488 | 0.0265 | 1.4292 | 0.1409 | 1.5701 | 0.3870 | 0.1325 | 0.5194 | 0.0000 | 2,449.8805 | 2,449.8805 | 0.1894 | 0.0000 | 2,454.6162 |
| 2022 | 0.7379 | 6.7896 | 5.8860 | 0.0259 | 1.4237 | 0.1193 | 1.5430 | 0.3855 | 0.1122 | 0.4977 | 0.0000 | 2,397.3915 | 2,397.3915 | 0.1811 | 0.0000 | 2,401.9192 |
| 2023 | 0.6693 | 5.4695 | 5.5328 | 0.0252 | 1.4237 | 0.1007 | 1.5244 | 0.3855 | 0.0946 | 0.4801 | 0.0000 | 2,332.3184 | 2,332.3184 | 0.1576 | 0.0000 | 2,336.2571 |
| 2024 | 2.5473 | 3.9002 | 4.1466 | 0.0176 | 0.9653 | 0.0775 | 1.0429 | 0.2613 | 0.0726 | 0.3338 | 0.0000 | 1,619.2269 | 1,619.2269 | 0.1272 | 0.0000 | 1,622.4071 |
| 2025 | 9.0912 | 0.0440 | 0.1642 | 4.9000e-004 | 0.0516 | 1.8600e-003 | 0.0535 | 0.0137 | 1.8300e-003 | 0.0155 | 0.0000 | 43.6106 | 43.6106 | 1.0700e-003 | 0.0000 | 43.6375 |
| **Maximum** | **9.0912** | **7.5503** | **6.2488** | **0.0265** | **1.4292** | **0.2246** | **1.5701** | **0.4256** | **0.2090** | **0.6346** | **0.0000** | **2,449.8805** | **2,449.8805** | **0.2120** | **0.0000** | **2,454.6162** |

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

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **7-25-2019** | **10-24-2019** | 1.2955 | 1.2955 |
| **2** | **10-25-2019** | **1-24-2020** | 1.6830 | 1.6830 |
| **3** | **1-25-2020** | **4-24-2020** | 1.7813 | 1.7813 |
| **4** | **4-25-2020** | **7-24-2020** | 2.0790 | 2.0790 |
| **5** | **7-25-2020** | **10-24-2020** | 2.2717 | 2.2717 |
| **6** | **10-25-2020** | **1-24-2021** | 2.2094 | 2.2094 |
| **7** | **1-25-2021** | **4-24-2021** | 2.0011 | 2.0011 |
| **8** | **4-25-2021** | **7-24-2021** | 2.0294 | 2.0294 |
| **9** | **7-25-2021** | **10-24-2021** | 2.0495 | 2.0495 |
| **10** | **10-25-2021** | **1-24-2022** | 2.0039 | 2.0039 |
| **11** | **1-25-2022** | **4-24-2022** | 1.8533 | 1.8533 |
| **12** | **4-25-2022** | **7-24-2022** | 1.8806 | 1.8806 |
| **13** | **7-25-2022** | **10-24-2022** | 1.8989 | 1.8989 |

| | | | | |
|---|---|---|---|---|
| **14** | **10-25-2022** | **1-24-2023** | 1.8020 | 1.8020 |
| **15** | **1-25-2023** | **4-24-2023** | 1.5157 | 1.5157 |
| **16** | **4-25-2023** | **7-24-2023** | 1.5396 | 1.5396 |
| **17** | **7-25-2023** | **10-24-2023** | 1.5540 | 1.5540 |
| **18** | **10-25-2023** | **1-24-2024** | 1.5337 | 1.5337 |
| **19** | **1-25-2024** | **4-24-2024** | 1.4827 | 1.4827 |
| **20** | **4-25-2024** | **7-24-2024** | 1.4896 | 1.4896 |
| **21** | **7-25-2024** | **10-24-2024** | 0.7888 | 0.7888 |
| **22** | **10-25-2024** | **1-24-2025** | 4.8900 | 4.8900 |
| **23** | **1-25-2025** | **4-24-2025** | 6.5260 | 6.5260 |
| | | **Highest** | 6.5260 | 6.5260 |

## 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 | 9.8121 | 2.7000e-004 | 0.0305 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0597 | 0.0597 | 1.5000e-004 | 0.0000 | 0.0636 |
| Energy | 0.4215 | 3.8319 | 3.2188 | 0.0230 | | 0.2912 | 0.2912 | | 0.2912 | 0.2912 | 0.0000 | 11,952.5210 | 11,952.5210 | 0.4012 | 0.1429 | 12,005.1470 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 37.1149 | 0.0000 | 37.1149 | 2.1934 | 0.0000 | 91.9505 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 375.3163 | 4,908.0593 | 5,283.3756 | 38.7512 | 0.9521 | 6,535.8931 |
| **Total** | **10.2336** | **3.8322** | **3.2493** | **0.0230** | **0.0000** | **0.2913** | **0.2913** | **0.0000** | **0.2913** | **0.2913** | **412.4312** | **16,860.6400** | **17,273.0711** | **41.3460** | **1.0951** | **18,633.0541** |

### 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 | 9.8121 | 2.7000e-004 | 0.0305 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0597 | 0.0597 | 1.5000e-004 | 0.0000 | 0.0636 |
| Energy | 0.3617 | 3.2884 | 2.7623 | 0.0197 | | 0.2499 | 0.2499 | | 0.2499 | 0.2499 | 0.0000 | 10,854.9265 | 10,854.9265 | 0.3690 | 0.1278 | 10,902.2266 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 37.1149 | 0.0000 | 37.1149 | 2.1934 | 0.0000 | 91.9505 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 375.3163 | 4,908.0593 | 5,283.3756 | 38.7512 | 0.9521 | 6,535.8931 |
| **Total** | **10.1738** | **3.2887** | **2.7928** | **0.0197** | **0.0000** | **0.2500** | **0.2500** | **0.0000** | **0.2500** | **0.2500** | **412.4312** | **15,763.0455** | **16,175.4766** | **41.3138** | **1.0799** | **17,530.1337** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.58** | **14.18** | **14.05** | **14.18** | **0.00** | **14.18** | **14.18** | **0.00** | **14.18** | **14.18** | **0.00** | **6.51** | **6.35** | **0.08** | **1.39** | **5.92** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 7/25/2019 | 10/30/2019 | 5 | 70 | |
| 2 | Site Preparation | Site Preparation | 10/31/2019 | 12/25/2019 | 5 | 40 | |
| 3 | Grading | Grading | 12/26/2019 | 5/27/2020 | 5 | 110 | |
| 4 | Building Construction | Building Construction | 5/28/2020 | 8/28/2024 | 5 | 1110 | |
| 5 | Paving | Paving | 8/29/2024 | 12/11/2024 | 5 | 75 | |
| 6 | Architectural Coating | Architectural Coating | 12/12/2024 | 3/26/2025 | 5 | 75 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 275**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 3,609,000; Non-Residential Outdoor: 1,203,000; Striped Parking**

## OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 770.00 | 394.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 154.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1230 | 1.2524 | 0.7721 | 1.3600e-003 | | 0.0628 | 0.0628 | | 0.0584 | 0.0584 | 0.0000 | 121.1922 | 121.1922 | 0.0337 | 0.0000 | 122.0350 |
| **Total** | **0.1230** | **1.2524** | **0.7721** | **1.3600e-003** | | **0.0628** | **0.0628** | | **0.0584** | **0.0584** | **0.0000** | **121.1922** | **121.1922** | **0.0337** | **0.0000** | **122.0350** |

**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 | 2.6100e-003 | 1.9000e-003 | 0.0199 | 6.0000e-005 | 5.7700e-003 | 4.0000e-005 | 5.8100e-003 | 1.5300e-003 | 3.0000e-005 | 1.5700e-003 | 0.0000 | 4.9854 | 4.9854 | 1.4000e-004 | 0.0000 | 4.9889 |
| **Total** | **2.6100e-003** | **1.9000e-003** | **0.0199** | **6.0000e-005** | **5.7700e-003** | **4.0000e-005** | **5.8100e-003** | **1.5300e-003** | **3.0000e-005** | **1.5700e-003** | **0.0000** | **4.9854** | **4.9854** | **1.4000e-004** | **0.0000** | **4.9889** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1230 | 1.2524 | 0.7721 | 1.3600e-003 | | 0.0628 | 0.0628 | | 0.0584 | 0.0584 | 0.0000 | 121.1920 | 121.1920 | 0.0337 | 0.0000 | 122.0349 |
| **Total** | **0.1230** | **1.2524** | **0.7721** | **1.3600e-003** | | **0.0628** | **0.0628** | | **0.0584** | **0.0584** | **0.0000** | **121.1920** | **121.1920** | **0.0337** | **0.0000** | **122.0349** |

## 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 | 2.6100e-003 | 1.9000e-003 | 0.0199 | 6.0000e-005 | 5.7700e-003 | 4.0000e-005 | 5.8100e-003 | 1.5300e-003 | 3.0000e-005 | 1.5700e-003 | 0.0000 | 4.9854 | 4.9854 | 1.4000e-004 | 0.0000 | 4.9889 |
| **Total** | **2.6100e-003** | **1.9000e-003** | **0.0199** | **6.0000e-005** | **5.7700e-003** | **4.0000e-005** | **5.8100e-003** | **1.5300e-003** | **3.0000e-005** | **1.5700e-003** | **0.0000** | **4.9854** | **4.9854** | **1.4000e-004** | **0.0000** | **4.9889** |

## 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 | | | | | 0.3613 | 0.0000 | 0.3613 | 0.1986 | 0.0000 | 0.1986 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0867 | 0.9115 | 0.4413 | 7.6000e-004 | | 0.0478 | 0.0478 | | 0.0440 | 0.0440 | 0.0000 | 68.3374 | 68.3374 | 0.0216 | 0.0000 | 68.8779 |
| **Total** | **0.0867** | **0.9115** | **0.4413** | **7.6000e-004** | **0.3613** | **0.0478** | **0.4091** | **0.1986** | **0.0440** | **0.2426** | **0.0000** | **68.3374** | **68.3374** | **0.0216** | **0.0000** | **68.8779** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.7900e-003 | 1.3000e-003 | 0.0137 | 4.0000e-005 | 3.9600e-003 | 2.0000e-005 | 3.9800e-003 | 1.0500e-003 | 2.0000e-005 | 1.0700e-003 | 0.0000 | 3.4186 | 3.4186 | 9.0000e-005 | 0.0000 | 3.4209 |
| **Total** | **1.7900e-003** | **1.3000e-003** | **0.0137** | **4.0000e-005** | **3.9600e-003** | **2.0000e-005** | **3.9800e-003** | **1.0500e-003** | **2.0000e-005** | **1.0700e-003** | **0.0000** | **3.4186** | **3.4186** | **9.0000e-005** | **0.0000** | **3.4209** |

## 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 | | | | | 0.3613 | 0.0000 | 0.3613 | 0.1986 | 0.0000 | 0.1986 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0867 | 0.9115 | 0.4413 | 7.6000e-004 | | 0.0478 | 0.0478 | | 0.0440 | 0.0440 | 0.0000 | 68.3373 | 68.3373 | 0.0216 | 0.0000 | 68.8778 |
| **Total** | **0.0867** | **0.9115** | **0.4413** | **7.6000e-004** | **0.3613** | **0.0478** | **0.4091** | **0.1986** | **0.0440** | **0.2426** | **0.0000** | **68.3373** | **68.3373** | **0.0216** | **0.0000** | **68.8778** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.7900e-003 | 1.3000e-003 | 0.0137 | 4.0000e-005 | 3.9600e-003 | 2.0000e-005 | 3.9800e-003 | 1.0500e-003 | 2.0000e-005 | 1.0700e-003 | 0.0000 | 3.4186 | 3.4186 | 9.0000e-005 | 0.0000 | 3.4209 |
| **Total** | **1.7900e-003** | **1.3000e-003** | **0.0137** | **4.0000e-005** | **3.9600e-003** | **2.0000e-005** | **3.9800e-003** | **1.0500e-003** | **2.0000e-005** | **1.0700e-003** | **0.0000** | **3.4186** | **3.4186** | **9.0000e-005** | **0.0000** | **3.4209** |

## 3.4 Grading - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1579 | 0.0000 | 0.1579 | 0.0224 | 0.0000 | 0.0224 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 9.4800e-003 | 0.1090 | 0.0668 | 1.2000e-004 | | 4.7700e-003 | 4.7700e-003 | | 4.3800e-003 | 4.3800e-003 | 0.0000 | 11.1403 | 11.1403 | 3.5200e-003 | 0.0000 | 11.2284 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **9.4800e-003** | **0.1090** | **0.0668** | **1.2000e-004** | **0.1579** | **4.7700e-003** | **0.1626** | **0.0224** | **4.3800e-003** | **0.0268** | **0.0000** | **11.1403** | **11.1403** | **3.5200e-003** | **0.0000** | **11.2284** |

## 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-004 | 1.4000e-004 | 1.5200e-003 | 0.0000 | 4.4000e-004 | 0.0000 | 4.4000e-004 | 1.2000e-004 | 0.0000 | 1.2000e-004 | 0.0000 | 0.3798 | 0.3798 | 1.0000e-005 | 0.0000 | 0.3801 |
| **Total** | **2.0000e-004** | **1.4000e-004** | **1.5200e-003** | **0.0000** | **4.4000e-004** | **0.0000** | **4.4000e-004** | **1.2000e-004** | **0.0000** | **1.2000e-004** | **0.0000** | **0.3798** | **0.3798** | **1.0000e-005** | **0.0000** | **0.3801** |

## 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 | | | | | 0.1579 | 0.0000 | 0.1579 | 0.0224 | 0.0000 | 0.0224 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 9.4800e-003 | 0.1090 | 0.0668 | 1.2000e-004 | | 4.7700e-003 | 4.7700e-003 | | 4.3800e-003 | 4.3800e-003 | 0.0000 | 11.1403 | 11.1403 | 3.5200e-003 | 0.0000 | 11.2284 |
| **Total** | **9.4800e-003** | **0.1090** | **0.0668** | **1.2000e-004** | **0.1579** | **4.7700e-003** | **0.1626** | **0.0224** | **4.3800e-003** | **0.0268** | **0.0000** | **11.1403** | **11.1403** | **3.5200e-003** | **0.0000** | **11.2284** |

## 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-004 | 1.4000e-004 | 1.5200e-003 | 0.0000 | 4.4000e-004 | 0.0000 | 4.4000e-004 | 1.2000e-004 | 0.0000 | 1.2000e-004 | 0.0000 | 0.3798 | 0.3798 | 1.0000e-005 | 0.0000 | 0.3801 |
| **Total** | **2.0000e-004** | **1.4000e-004** | **1.5200e-003** | **0.0000** | **4.4000e-004** | **0.0000** | **4.4000e-004** | **1.2000e-004** | **0.0000** | **1.2000e-004** | **0.0000** | **0.3798** | **0.3798** | **1.0000e-005** | **0.0000** | **0.3801** |

## 3.4 Grading - 2020

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.4650 | 0.0000 | 0.4650 | 0.1912 | 0.0000 | 0.1912 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.2359 | 2.6605 | 1.6938 | 3.2900e-003 | | 0.1152 | 0.1152 | | 0.1060 | 0.1060 | 0.0000 | 288.7668 | 288.7668 | 0.0934 | 0.0000 | 291.1016 |
| **Total** | **0.2359** | **2.6605** | **1.6938** | **3.2900e-003** | **0.4650** | **0.1152** | **0.5802** | **0.1912** | **0.1060** | **0.2972** | **0.0000** | **288.7668** | **288.7668** | **0.0934** | **0.0000** | **291.1016** |

### Unmitigated Construction Off-Site

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.8700e-003 | 3.4100e-003 | 0.0365 | 1.1000e-004 | 0.0117 | 7.0000e-005 | 0.0117 | 3.0900e-003 | 7.0000e-005 | 3.1600e-003 | 0.0000 | 9.7477 | 9.7477 | 2.4000e-004 | 0.0000 | 9.7538 |
| **Total** | **4.8700e-003** | **3.4100e-003** | **0.0365** | **1.1000e-004** | **0.0117** | **7.0000e-005** | **0.0117** | **3.0900e-003** | **7.0000e-005** | **3.1600e-003** | **0.0000** | **9.7477** | **9.7477** | **2.4000e-004** | **0.0000** | **9.7538** |

## 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 | | | | | 0.4650 | 0.0000 | 0.4650 | 0.1912 | 0.0000 | 0.1912 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.2359 | 2.6605 | 1.6938 | 3.2900e-003 | | 0.1152 | 0.1152 | | 0.1060 | 0.1060 | 0.0000 | 288.7664 | 288.7664 | 0.0934 | 0.0000 | 291.1012 |
| **Total** | **0.2359** | **2.6605** | **1.6938** | **3.2900e-003** | **0.4650** | **0.1152** | **0.5802** | **0.1912** | **0.1060** | **0.2972** | **0.0000** | **288.7664** | **288.7664** | **0.0934** | **0.0000** | **291.1012** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.8700e-003 | 3.4100e-003 | 0.0365 | 1.1000e-004 | 0.0117 | 7.0000e-005 | 0.0117 | 3.0900e-003 | 7.0000e-005 | 3.1600e-003 | 0.0000 | 9.7477 | 9.7477 | 2.4000e-004 | 0.0000 | 9.7538 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **4.8700e-003** | **3.4100e-003** | **0.0365** | **1.1000e-004** | **0.0117** | **7.0000e-005** | **0.0117** | **3.0900e-003** | **7.0000e-005** | **3.1600e-003** | **0.0000** | **9.7477** | **9.7477** | **2.4000e-004** | **0.0000** | **9.7538** |

## 3.5 Building Construction - 2020

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1654 | 1.4965 | 1.3142 | 2.1000e-003 | | 0.0871 | 0.0871 | | 0.0819 | 0.0819 | 0.0000 | 180.6558 | 180.6558 | 0.0441 | 0.0000 | 181.7576 |
| **Total** | **0.1654** | **1.4965** | **1.3142** | **2.1000e-003** | | **0.0871** | **0.0871** | | **0.0819** | **0.0819** | **0.0000** | **180.6558** | **180.6558** | **0.0441** | **0.0000** | **181.7576** |

### 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 | 0.0873 | 3.1965 | 0.6253 | 7.9000e-003 | 0.1941 | 0.0181 | 0.2122 | 0.0560 | 0.0173 | 0.0733 | 0.0000 | 755.6620 | 755.6620 | 0.0604 | 0.0000 | 757.1721 |
| Worker | 0.2760 | 0.1934 | 2.0652 | 6.1100e-003 | 0.6601 | 4.0700e-003 | 0.6642 | 0.1753 | 3.7400e-003 | 0.1790 | 0.0000 | 552.3072 | 552.3072 | 0.0138 | 0.0000 | 552.6530 |
| **Total** | **0.3634** | **3.3899** | **2.6905** | **0.0140** | **0.8543** | **0.0221** | **0.8764** | **0.2313** | **0.0210** | **0.2523** | **0.0000** | **1,307.9692** | **1,307.9692** | **0.0742** | **0.0000** | **1,309.8251** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1654 | 1.4965 | 1.3142 | 2.1000e-003 | | 0.0871 | 0.0871 | | 0.0819 | 0.0819 | 0.0000 | 180.6556 | 180.6556 | 0.0441 | 0.0000 | 181.7574 |
| **Total** | **0.1654** | **1.4965** | **1.3142** | **2.1000e-003** | | **0.0871** | **0.0871** | | **0.0819** | **0.0819** | **0.0000** | **180.6556** | **180.6556** | **0.0441** | **0.0000** | **181.7574** |

**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 | 0.0873 | 3.1965 | 0.6253 | 7.9000e-003 | 0.1941 | 0.0181 | 0.2122 | 0.0560 | 0.0173 | 0.0733 | 0.0000 | 755.6620 | 755.6620 | 0.0604 | 0.0000 | 757.1721 |
| Worker | 0.2760 | 0.1934 | 2.0652 | 6.1100e-003 | 0.6601 | 4.0700e-003 | 0.6642 | 0.1753 | 3.7400e-003 | 0.1790 | 0.0000 | 552.3072 | 552.3072 | 0.0138 | 0.0000 | 552.6530 |
| **Total** | **0.3634** | **3.3899** | **2.6905** | **0.0140** | **0.8543** | **0.0221** | **0.8764** | **0.2313** | **0.0210** | **0.2523** | **0.0000** | **1,307.9692** | **1,307.9692** | **0.0742** | **0.0000** | **1,309.8251** |

## 3.5 Building Construction - 2021

**Unmitigated Construction On-Site**

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.2481 | 2.2749 | 2.1631 | 3.5100e-003 | | 0.1251 | 0.1251 | | 0.1176 | 0.1176 | 0.0000 | 302.2867 | 302.2867 | 0.0729 | 0.0000 | 304.1099 |
| **Total** | **0.2481** | **2.2749** | **2.1631** | **3.5100e-003** | | **0.1251** | **0.1251** | | **0.1176** | **0.1176** | **0.0000** | **302.2867** | **302.2867** | **0.0729** | **0.0000** | **304.1099** |

## 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 | 0.1227 | 4.7943 | 0.9224 | 0.0131 | 0.3247 | 9.1700e-003 | 0.3339 | 0.0937 | 8.7700e-003 | 0.1025 | 0.0000 | 1,254.4370 | 1,254.4370 | 0.0957 | 0.0000 | 1,256.8293 |
| Worker | 0.4308 | 0.2903 | 3.1633 | 9.8800e-003 | 1.1045 | 6.6200e-003 | 1.1111 | 0.2933 | 6.0900e-003 | 0.2994 | 0.0000 | 893.1573 | 893.1573 | 0.0208 | 0.0000 | 893.6774 |
| **Total** | **0.5535** | **5.0846** | **4.0857** | **0.0230** | **1.4292** | **0.0158** | **1.4450** | **0.3870** | **0.0149** | **0.4018** | **0.0000** | **2,147.5942** | **2,147.5942** | **0.1165** | **0.0000** | **2,150.5067** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2481 | 2.2749 | 2.1631 | 3.5100e-003 | | 0.1251 | 0.1251 | | 0.1176 | 0.1176 | 0.0000 | 302.2863 | 302.2863 | 0.0729 | 0.0000 | 304.1095 |
| **Total** | **0.2481** | **2.2749** | **2.1631** | **3.5100e-003** | | **0.1251** | **0.1251** | | **0.1176** | **0.1176** | **0.0000** | **302.2863** | **302.2863** | **0.0729** | **0.0000** | **304.1095** |

**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 | 0.1227 | 4.7943 | 0.9224 | 0.0131 | 0.3247 | 9.1700e-003 | 0.3339 | 0.0937 | 8.7700e-003 | 0.1025 | 0.0000 | 1,254.4370 | 1,254.4370 | 0.0957 | 0.0000 | 1,256.8293 |
| Worker | 0.4308 | 0.2903 | 3.1633 | 9.8800e-003 | 1.1045 | 6.6200e-003 | 1.1111 | 0.2933 | 6.0900e-003 | 0.2994 | 0.0000 | 893.1573 | 893.1573 | 0.0208 | 0.0000 | 893.6774 |
| **Total** | **0.5535** | **5.0846** | **4.0857** | **0.0230** | **1.4292** | **0.0158** | **1.4450** | **0.3870** | **0.0149** | **0.4018** | **0.0000** | **2,147.5942** | **2,147.5942** | **0.1165** | **0.0000** | **2,150.5067** |

## 3.5 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2218 | 2.0300 | 2.1272 | 3.5000e-003 | | 0.1052 | 0.1052 | | 0.0990 | 0.0990 | 0.0000 | 301.2428 | 301.2428 | 0.0722 | 0.0000 | 303.0471 |
| **Total** | **0.2218** | **2.0300** | **2.1272** | **3.5000e-003** | | **0.1052** | **0.1052** | | **0.0990** | **0.0990** | **0.0000** | **301.2428** | **301.2428** | **0.0722** | **0.0000** | **303.0471** |

**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 | 0.1140 | 4.4994 | 0.8559 | 0.0130 | 0.3235 | 7.6800e-003 | 0.3312 | 0.0933 | 7.3500e-003 | 0.1007 | 0.0000 | 1,238.8815 | 1,238.8815 | 0.0903 | 0.0000 | 1,241.1393 |
| Worker | 0.4021 | 0.2602 | 2.9029 | 9.4800e-003 | 1.1002 | 6.4200e-003 | 1.1067 | 0.2922 | 5.9100e-003 | 0.2981 | 0.0000 | 857.2675 | 857.2675 | 0.0186 | 0.0000 | 857.7332 |
| **Total** | **0.5161** | **4.7596** | **3.7588** | **0.0224** | **1.4237** | **0.0141** | **1.4378** | **0.3855** | **0.0133** | **0.3987** | **0.0000** | **2,096.1490** | **2,096.1490** | **0.1089** | **0.0000** | **2,098.8725** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2218 | 2.0300 | 2.1272 | 3.5000e-003 | | 0.1052 | 0.1052 | | 0.0990 | 0.0990 | 0.0000 | 301.2425 | 301.2425 | 0.0722 | 0.0000 | 303.0467 |
| **Total** | **0.2218** | **2.0300** | **2.1272** | **3.5000e-003** | | **0.1052** | **0.1052** | | **0.0990** | **0.0990** | **0.0000** | **301.2425** | **301.2425** | **0.0722** | **0.0000** | **303.0467** |

## 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 | 0.1140 | 4.4994 | 0.8559 | 0.0130 | 0.3235 | 7.6800e-003 | 0.3312 | 0.0933 | 7.3500e-003 | 0.1007 | 0.0000 | 1,238.8815 | 1,238.8815 | 0.0903 | 0.0000 | 1,241.1393 |
| Worker | 0.4021 | 0.2602 | 2.9029 | 9.4800e-003 | 1.1002 | 6.4200e-003 | 1.1067 | 0.2922 | 5.9100e-003 | 0.2981 | 0.0000 | 857.2675 | 857.2675 | 0.0186 | 0.0000 | 857.7332 |
| **Total** | **0.5161** | **4.7596** | **3.7588** | **0.0224** | **1.4237** | **0.0141** | **1.4378** | **0.3855** | **0.0133** | **0.3987** | **0.0000** | **2,096.1490** | **2,096.1490** | **0.1089** | **0.0000** | **2,098.8725** |

## 3.5 Building Construction - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2045 | 1.8700 | 2.1117 | 3.5000e-003 | | 0.0910 | 0.0910 | | 0.0856 | 0.0856 | 0.0000 | 301.3462 | 301.3462 | 0.0717 | 0.0000 | 303.1383 |
| **Total** | **0.2045** | **1.8700** | **2.1117** | **3.5000e-003** | | **0.0910** | **0.0910** | | **0.0856** | **0.0856** | **0.0000** | **301.3462** | **301.3462** | **0.0717** | **0.0000** | **303.1383** |

### 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 | 0.0872 | 3.3649 | 0.7454 | 0.0126 | 0.3235 | 3.4300e-003 | 0.3269 | 0.0933 | 3.2800e-003 | 0.0966 | 0.0000 | 1,206.2412 | 1,206.2412 | 0.0691 | 0.0000 | 1,207.9694 |
| Worker | 0.3777 | 0.2346 | 2.6758 | 9.1200e-003 | 1.1002 | 6.2700e-003 | 1.1065 | 0.2922 | 5.7700e-003 | 0.2979 | 0.0000 | 824.7314 | 824.7314 | 0.0167 | 0.0000 | 825.1498 |
| **Total** | **0.4649** | **3.5994** | **3.4211** | **0.0217** | **1.4237** | **9.7000e-003** | **1.4334** | **0.3855** | **9.0500e-003** | **0.3945** | **0.0000** | **2,030.9726** | **2,030.9726** | **0.0859** | **0.0000** | **2,033.1191** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2045 | 1.8700 | 2.1117 | 3.5000e-003 | | 0.0910 | 0.0910 | | 0.0856 | 0.0856 | 0.0000 | 301.3458 | 301.3458 | 0.0717 | 0.0000 | 303.1380 |
| **Total** | **0.2045** | **1.8700** | **2.1117** | **3.5000e-003** | | **0.0910** | **0.0910** | | **0.0856** | **0.0856** | **0.0000** | **301.3458** | **301.3458** | **0.0717** | **0.0000** | **303.1380** |

**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 | 0.0872 | 3.3649 | 0.7454 | 0.0126 | 0.3235 | 3.4300e-003 | 0.3269 | 0.0933 | 3.2800e-003 | 0.0966 | 0.0000 | 1,206.2412 | 1,206.2412 | 0.0691 | 0.0000 | 1,207.9694 |
| Worker | 0.3777 | 0.2346 | 2.6758 | 9.1200e-003 | 1.1002 | 6.2700e-003 | 1.1065 | 0.2922 | 5.7700e-003 | 0.2979 | 0.0000 | 824.7314 | 824.7314 | 0.0167 | 0.0000 | 825.1498 |
| **Total** | **0.4649** | **3.5994** | **3.4211** | **0.0217** | **1.4237** | **9.7000e-003** | **1.4334** | **0.3855** | **9.0500e-003** | **0.3945** | **0.0000** | **2,030.9726** | **2,030.9726** | **0.0859** | **0.0000** | **2,033.1191** |

## 3.5 Building Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1273 | 1.1629 | 1.3984 | 2.3300e-003 | | 0.0531 | 0.0531 | | 0.0499 | 0.0499 | 0.0000 | 200.5495 | 200.5495 | 0.0474 | 0.0000 | 201.7351 |
| **Total** | **0.1273** | **1.1629** | **1.3984** | **2.3300e-003** | | **0.0531** | **0.0531** | | **0.0499** | **0.0499** | **0.0000** | **200.5495** | **200.5495** | **0.0474** | **0.0000** | **201.7351** |

## 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 | 0.0569 | 2.2267 | 0.4793 | 8.3500e-003 | 0.2152 | 2.2700e-003 | 0.2175 | 0.0621 | 2.1700e-003 | 0.0643 | 0.0000 | 799.5938 | 799.5938 | 0.0450 | 0.0000 | 800.7185 |
| Worker | 0.2372 | 0.1415 | 1.6666 | 5.8500e-003 | 0.7321 | 4.1300e-003 | 0.7362 | 0.1944 | 3.8000e-003 | 0.1982 | 0.0000 | 529.1637 | 529.1637 | 0.0102 | 0.0000 | 529.4176 |
| **Total** | **0.2942** | **2.3682** | **2.1460** | **0.0142** | **0.9473** | **6.4000e-003** | **0.9537** | **0.2565** | **5.9700e-003** | **0.2625** | **0.0000** | **1,328.7575** | **1,328.7575** | **0.0552** | **0.0000** | **1,330.1361** |

## 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 | 0.1273 | 1.1629 | 1.3984 | 2.3300e-003 | | 0.0531 | 0.0531 | | 0.0499 | 0.0499 | 0.0000 | 200.5492 | 200.5492 | 0.0474 | 0.0000 | 201.7348 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **0.1273** | **1.1629** | **1.3984** | **2.3300e-003** | | **0.0531** | **0.0531** | | **0.0499** | **0.0499** | **0.0000** | **200.5492** | **200.5492** | **0.0474** | **0.0000** | **201.7348** |

**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 | 0.0569 | 2.2267 | 0.4793 | 8.3500e-003 | 0.2152 | 2.2700e-003 | 0.2175 | 0.0621 | 2.1700e-003 | 0.0643 | 0.0000 | 799.5938 | 799.5938 | 0.0450 | 0.0000 | 800.7185 |
| Worker | 0.2372 | 0.1415 | 1.6666 | 5.8500e-003 | 0.7321 | 4.1300e-003 | 0.7362 | 0.1944 | 3.8000e-003 | 0.1982 | 0.0000 | 529.1637 | 529.1637 | 0.0102 | 0.0000 | 529.4176 |
| **Total** | **0.2942** | **2.3682** | **2.1460** | **0.0142** | **0.9473** | **6.4000e-003** | **0.9537** | **0.2565** | **5.9700e-003** | **0.2625** | **0.0000** | **1,328.7575** | **1,328.7575** | **0.0552** | **0.0000** | **1,330.1361** |

## 3.6 Paving - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0371 | 0.3572 | 0.5485 | 8.6000e-004 | | 0.0176 | 0.0176 | | 0.0162 | 0.0162 | 0.0000 | 75.0995 | 75.0995 | 0.0243 | 0.0000 | 75.7067 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0371** | **0.3572** | **0.5485** | **8.6000e-004** | | **0.0176** | **0.0176** | | **0.0162** | **0.0162** | **0.0000** | **75.0995** | **75.0995** | **0.0243** | **0.0000** | **75.7067** |

## 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-003 | 1.1900e-003 | 0.0141 | 5.0000e-005 | 6.1800e-003 | 3.0000e-005 | 6.2200e-003 | 1.6400e-003 | 3.0000e-005 | 1.6700e-003 | 0.0000 | 4.4690 | 4.4690 | 9.0000e-005 | 0.0000 | 4.4711 |
| **Total** | **2.0000e-003** | **1.1900e-003** | **0.0141** | **5.0000e-005** | **6.1800e-003** | **3.0000e-005** | **6.2200e-003** | **1.6400e-003** | **3.0000e-005** | **1.6700e-003** | **0.0000** | **4.4690** | **4.4690** | **9.0000e-005** | **0.0000** | **4.4711** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0371 | 0.3572 | 0.5485 | 8.6000e-004 | | 0.0176 | 0.0176 | | 0.0162 | 0.0162 | 0.0000 | 75.0994 | 75.0994 | 0.0243 | 0.0000 | 75.7066 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0371** | **0.3572** | **0.5485** | **8.6000e-004** | | **0.0176** | **0.0176** | | **0.0162** | **0.0162** | **0.0000** | **75.0994** | **75.0994** | **0.0243** | **0.0000** | **75.7066** |

## 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-003 | 1.1900e-003 | 0.0141 | 5.0000e-005 | 6.1800e-003 | 3.0000e-005 | 6.2200e-003 | 1.6400e-003 | 3.0000e-005 | 1.6700e-003 | 0.0000 | 4.4690 | 4.4690 | 9.0000e-005 | 0.0000 | 4.4711 |
| **Total** | **2.0000e-003** | **1.1900e-003** | **0.0141** | **5.0000e-005** | **6.1800e-003** | **3.0000e-005** | **6.2200e-003** | **1.6400e-003** | **3.0000e-005** | **1.6700e-003** | **0.0000** | **4.4690** | **4.4690** | **9.0000e-005** | **0.0000** | **4.4711** |

## 3.7 Architectural Coating - 2024

### 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 | 2.0817 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.2700e-003 | 8.5300e-003 | 0.0127 | 2.0000e-005 | | 4.3000e-004 | 4.3000e-004 | | 4.3000e-004 | 4.3000e-004 | 0.0000 | 1.7873 | 1.7873 | 1.0000e-004 | 0.0000 | 1.7898 |
| **Total** | **2.0829** | **8.5300e-003** | **0.0127** | **2.0000e-005** | | **4.3000e-004** | **4.3000e-004** | | **4.3000e-004** | **4.3000e-004** | **0.0000** | **1.7873** | **1.7873** | **1.0000e-004** | **0.0000** | **1.7898** |

### 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 | 3.8400e-003 | 2.2900e-003 | 0.0270 | 9.0000e-005 | 0.0119 | 7.0000e-005 | 0.0119 | 3.1500e-003 | 6.0000e-005 | 3.2100e-003 | 0.0000 | 8.5645 | 8.5645 | 1.6000e-004 | 0.0000 | 8.5686 |
| **Total** | **3.8400e-003** | **2.2900e-003** | **0.0270** | **9.0000e-005** | **0.0119** | **7.0000e-005** | **0.0119** | **3.1500e-003** | **6.0000e-005** | **3.2100e-003** | **0.0000** | **8.5645** | **8.5645** | **1.6000e-004** | **0.0000** | **8.5686** |

## 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 | 2.0817 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.2700e-003 | 8.5300e-003 | 0.0127 | 2.0000e-005 | | 4.3000e-004 | 4.3000e-004 | | 4.3000e-004 | 4.3000e-004 | 0.0000 | 1.7873 | 1.7873 | 1.0000e-004 | 0.0000 | 1.7898 |
| **Total** | **2.0829** | **8.5300e-003** | **0.0127** | **2.0000e-005** | | **4.3000e-004** | **4.3000e-004** | | **4.3000e-004** | **4.3000e-004** | **0.0000** | **1.7873** | **1.7873** | **1.0000e-004** | **0.0000** | **1.7898** |

## 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 | 3.8400e-003 | 2.2900e-003 | 0.0270 | 9.0000e-005 | 0.0119 | 7.0000e-005 | 0.0119 | 3.1500e-003 | 6.0000e-005 | 3.2100e-003 | 0.0000 | 8.5645 | 8.5645 | 1.6000e-004 | 0.0000 | 8.5686 |
| **Total** | **3.8400e-003** | **2.2900e-003** | **0.0270** | **9.0000e-005** | **0.0119** | **7.0000e-005** | **0.0119** | **3.1500e-003** | **6.0000e-005** | **3.2100e-003** | **0.0000** | **8.5645** | **8.5645** | **1.6000e-004** | **0.0000** | **8.5686** |

## 3.7 Architectural Coating - 2025

## 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 | 9.0701 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.2100e-003 | 0.0349 | 0.0552 | 9.0000e-005 | | 1.5700e-003 | 1.5700e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 7.7874 | 7.7874 | 4.2000e-004 | 0.0000 | 7.7980 |
| **Total** | **9.0754** | **0.0349** | **0.0552** | **9.0000e-005** | | **1.5700e-003** | **1.5700e-003** | | **1.5700e-003** | **1.5700e-003** | **0.0000** | **7.7874** | **7.7874** | **4.2000e-004** | **0.0000** | **7.7980** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0158 | 9.0800e-003 | 0.1090 | 4.0000e-004 | 0.0516 | 2.9000e-004 | 0.0519 | 0.0137 | 2.6000e-004 | 0.0140 | 0.0000 | 35.8232 | 35.8232 | 6.5000e-004 | 0.0000 | 35.8395 |
| **Total** | **0.0158** | **9.0800e-003** | **0.1090** | **4.0000e-004** | **0.0516** | **2.9000e-004** | **0.0519** | **0.0137** | **2.6000e-004** | **0.0140** | **0.0000** | **35.8232** | **35.8232** | **6.5000e-004** | **0.0000** | **35.8395** |

## 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 | 9.0701 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.2100e-003 | 0.0349 | 0.0552 | 9.0000e-005 | | 1.5700e-003 | 1.5700e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 7.7874 | 7.7874 | 4.2000e-004 | 0.0000 | 7.7980 |
| **Total** | **9.0754** | **0.0349** | **0.0552** | **9.0000e-005** | | **1.5700e-003** | **1.5700e-003** | | **1.5700e-003** | **1.5700e-003** | **0.0000** | **7.7874** | **7.7874** | **4.2000e-004** | **0.0000** | **7.7980** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0158 | 9.0800e-003 | 0.1090 | 4.0000e-004 | 0.0516 | 2.9000e-004 | 0.0519 | 0.0137 | 2.6000e-004 | 0.0140 | 0.0000 | 35.8232 | 35.8232 | 6.5000e-004 | 0.0000 | 35.8395 |
| **Total** | **0.0158** | **9.0800e-003** | **0.1090** | **4.0000e-004** | **0.0516** | **2.9000e-004** | **0.0519** | **0.0137** | **2.6000e-004** | **0.0140** | **0.0000** | **35.8232** | **35.8232** | **6.5000e-004** | **0.0000** | **35.8395** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

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

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Research & Development | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Research & Development | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 82 | 15 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Research & Development | 0.565475 | 0.033834 | 0.192058 | 0.100675 | 0.009211 | 0.004032 | 0.016699 | 0.069908 | 0.001423 | 0.001062 | 0.004327 | 0.000756 | 0.000539 |

# 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 7,275.0639 | 7,275.0639 | 0.3004 | 0.0621 | 7,301.0906 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 7,781.0219 | 7,781.0219 | 0.3212 | 0.0665 | 7,808.8588 |
| NaturalGas Mitigated | 0.3617 | 3.2884 | 2.7623 | 0.0197 | | 0.2499 | 0.2499 | | 0.2499 | 0.2499 | 0.0000 | 3,579.8626 | 3,579.8626 | 0.0686 | 0.0656 | 3,601.1360 |
| NaturalGas Unmitigated | 0.4215 | 3.8319 | 3.2188 | 0.0230 | | 0.2912 | 0.2912 | | 0.2912 | 0.2912 | 0.0000 | 4,171.4991 | 4,171.4991 | 0.0800 | 0.0765 | 4,196.2882 |

## 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 | | | | | |
| Research & Development | 7.81709e+007 | 0.4215 | 3.8319 | 3.2188 | 0.0230 | | 0.2912 | 0.2912 | | 0.2912 | 0.2912 | 0.0000 | 4,171.4991 | 4,171.4991 | 0.0800 | 0.0765 | 4,196.2882 |
| **Total** | | **0.4215** | **3.8319** | **3.2188** | **0.0230** | | **0.2912** | **0.2912** | | **0.2912** | **0.2912** | **0.0000** | **4,171.4991** | **4,171.4991** | **0.0800** | **0.0765** | **4,196.2882** |

**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 | | | | | |
| Research & Development | 6.70841e+007 | 0.3617 | 3.2884 | 2.7623 | 0.0197 | | 0.2499 | 0.2499 | | 0.2499 | 0.2499 | 0.0000 | 3,579.8626 | 3,579.8626 | 0.0686 | 0.0656 | 3,601.1360 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | | **0.3617** | **3.2884** | **2.7623** | **0.0197** | | **0.2499** | **0.2499** | | **0.2499** | **0.2499** | **0.0000** | **3,579.8626** | **3,579.8626** | **0.0686** | **0.0656** | **3,601.1360** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Research & Development | 2.44209e+007 | 7,781.0219 | 0.3212 | 0.0665 | 7,808.8588 |
| **Total** | | **7,781.0219** | **0.3212** | **0.0665** | **7,808.8588** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Research & Development | 2.28329e+007 | 7,275.0639 | 0.3004 | 0.0621 | 7,301.0906 |
| **Total** | | **7,275.0639** | **0.3004** | **0.0621** | **7,301.0906** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 9.8121 | 2.7000e-004 | 0.0305 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0597 | 0.0597 | 1.5000e-004 | 0.0000 | 0.0636 |
| Unmitigated | 9.8121 | 2.7000e-004 | 0.0305 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0597 | 0.0597 | 1.5000e-004 | 0.0000 | 0.0636 |

## 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 | 1.1152 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 8.6941 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.7900e-003 | 2.7000e-004 | 0.0305 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0597 | 0.0597 | 1.5000e-004 | 0.0000 | 0.0636 |
| **Total** | **9.8121** | **2.7000e-004** | **0.0305** | **0.0000** | | **1.1000e-004** | **1.1000e-004** | | **1.1000e-004** | **1.1000e-004** | **0.0000** | **0.0597** | **0.0597** | **1.5000e-004** | **0.0000** | **0.0636** |

**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 | 1.1152 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 8.6941 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.7900e-003 | 2.7000e-004 | 0.0305 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0597 | 0.0597 | 1.5000e-004 | 0.0000 | 0.0636 |
| **Total** | **9.8121** | **2.7000e-004** | **0.0305** | **0.0000** | | **1.1000e-004** | **1.1000e-004** | | **1.1000e-004** | **1.1000e-004** | **0.0000** | **0.0597** | **0.0597** | **1.5000e-004** | **0.0000** | **0.0636** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 5,283.3756 | 38.7512 | 0.9521 | 6,535.8931 |
| Unmitigated | 5,283.3756 | 38.7512 | 0.9521 | 6,535.8931 |

## 7.2 Water by Land Use

**Unmitigated**

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

| Land Use | Mgal | MT/yr | | | |
|---|---|---|---|---|---|
| Research & Development | 1183.02 / 0 | 5,283.3756 | 38.7512 | 0.9521 | 6,535.8931 |
| **Total** | | **5,283.3756** | **38.7512** | **0.9521** | **6,535.8931** |

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Research & Development | 1183.02 / 0 | 5,283.3756 | 38.7512 | 0.9521 | 6,535.8931 |
| **Total** | | **5,283.3756** | **38.7512** | **0.9521** | **6,535.8931** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |

| | | | | |
|---|---|---|---|---|
| Mitigated | 37.1149 | 2.1934 | 0.0000 | 91.9505 |
| Unmitigated | 37.1149 | 2.1934 | 0.0000 | 91.9505 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Research & Development | 182.84 | 37.1149 | 2.1934 | 0.0000 | 91.9505 |
| **Total** | | **37.1149** | **2.1934** | **0.0000** | **91.9505** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Research & Development | 182.84 | 37.1149 | 2.1934 | 0.0000 | 91.9505 |
| **Total** | | **37.1149** | **2.1934** | **0.0000** | **91.9505** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

## 11.0 Vegetation

# City of Murrieta General Plan Update - Non-Residential

**Riverside-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Research & Development | 2,406.00 | 1000sqft | 55.23 | 2,406,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2035 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - GP Update will reduce 2,405,600 SF in non-residential uses.

Construction Phase -

Grading -

Vehicle Trips - On-road transportation analyzed in seperate CalEEMod run

Woodstoves -

Energy Mitigation - Increased efficiency to meet 2019 Title 24 Standards

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|

| | | | |
|---|---|---|---|
| tblVehicleTrips | ST_TR | 1.90 | 0.00 |
| tblVehicleTrips | SU_TR | 1.11 | 0.00 |
| tblVehicleTrips | WD_TR | 8.11 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 4.8490 | 54.5878 | 34.2653 | 0.0643 | 18.2675 | 2.3916 | 20.6591 | 9.9840 | 2.2003 | 12.1843 | 0.0000 | 6,367.5239 | 6,367.5239 | 1.9490 | 0.0000 | 6,416.2491 |
| 2020 | 7.1364 | 62.0427 | 55.3124 | 0.2150 | 11.1298 | 2.1753 | 12.5296 | 3.6558 | 2.0012 | 5.6570 | 0.0000 | 21,885.7434 | 21,885.7434 | 1.9481 | 0.0000 | 21,927.0961 |
| 2021 | 6.4713 | 55.9722 | 51.5482 | 0.2113 | 11.1297 | 1.0787 | 12.2084 | 3.0090 | 1.0143 | 4.0233 | 0.0000 | 21,518.0362 | 21,518.0362 | 1.5817 | 0.0000 | 21,557.5790 |
| 2022 | 5.9785 | 51.8866 | 48.6717 | 0.2074 | 11.1296 | 0.9167 | 12.0463 | 3.0089 | 0.8624 | 3.8713 | 0.0000 | 21,127.8001 | 21,127.8001 | 1.5170 | 0.0000 | 21,165.7247 |
| 2023 | 5.4322 | 41.9395 | 45.8099 | 0.2016 | 11.1295 | 0.7740 | 11.9035 | 3.0089 | 0.7277 | 3.7366 | 0.0000 | 20,544.5914 | 20,544.5914 | 1.3252 | 0.0000 | 20,577.7210 |
| 2024 | 298.1658 | 40.7008 | 44.0403 | 0.1985 | 11.1294 | 0.6869 | 11.8163 | 3.0089 | 0.6456 | 3.6544 | 0.0000 | 20,233.1620 | 20,233.1620 | 1.2956 | 0.0000 | 20,265.5531 |
| 2025 | 298.1227 | 1.4242 | 6.0259 | 0.0171 | 1.7214 | 0.0609 | 1.7822 | 0.4565 | 0.0601 | 0.5167 | 0.0000 | 1,688.2289 | 1,688.2289 | 0.0414 | 0.0000 | 1,689.2641 |
| **Maximum** | **298.1658** | **62.0427** | **55.3124** | **0.2150** | **18.2675** | **2.3916** | **20.6591** | **9.9840** | **2.2003** | **12.1843** | **0.0000** | **21,885.7434** | **21,885.7434** | **1.9490** | **0.0000** | **21,927.0961** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 4.8490 | 54.5878 | 34.2653 | 0.0643 | 18.2675 | 2.3916 | 20.6591 | 9.9840 | 2.2003 | 12.1843 | 0.0000 | 6,367.5239 | 6,367.5239 | 1.9490 | 0.0000 | 6,416.2491 |
| 2020 | 7.1364 | 62.0427 | 55.3124 | 0.2150 | 11.1298 | 2.1753 | 12.5296 | 3.6558 | 2.0012 | 5.6570 | 0.0000 | 21,885.7434 | 21,885.7434 | 1.9481 | 0.0000 | 21,927.0961 |
| 2021 | 6.4713 | 55.9722 | 51.5482 | 0.2113 | 11.1297 | 1.0787 | 12.2084 | 3.0090 | 1.0143 | 4.0233 | 0.0000 | 21,518.0362 | 21,518.0362 | 1.5817 | 0.0000 | 21,557.5790 |
| 2022 | 5.9785 | 51.8866 | 48.6717 | 0.2074 | 11.1296 | 0.9167 | 12.0463 | 3.0089 | 0.8624 | 3.8713 | 0.0000 | 21,127.8001 | 21,127.8001 | 1.5170 | 0.0000 | 21,165.7247 |
| 2023 | 5.4322 | 41.9395 | 45.8099 | 0.2016 | 11.1295 | 0.7740 | 11.9035 | 3.0089 | 0.7277 | 3.7366 | 0.0000 | 20,544.5914 | 20,544.5914 | 1.3252 | 0.0000 | 20,577.7210 |
| 2024 | 298.1658 | 40.7008 | 44.0403 | 0.1985 | 11.1294 | 0.6869 | 11.8163 | 3.0089 | 0.6456 | 3.6544 | 0.0000 | 20,233.1620 | 20,233.1620 | 1.2956 | 0.0000 | 20,265.5531 |
| 2025 | 298.1227 | 1.4242 | 6.0259 | 0.0171 | 1.7214 | 0.0609 | 1.7822 | 0.4565 | 0.0601 | 0.5167 | 0.0000 | 1,688.2289 | 1,688.2289 | 0.0414 | 0.0000 | 1,689.2641 |
| **Maximum** | **298.1658** | **62.0427** | **55.3124** | **0.2150** | **18.2675** | **2.3916** | **20.6591** | **9.9840** | **2.2003** | **12.1843** | **0.0000** | **21,885.7434** | **21,885.7434** | **1.9490** | **0.0000** | **21,927.0961** |

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

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 53.7717 | 2.1900e-003 | 0.2443 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5266 | 0.5266 | 1.3600e-003 | | 0.5605 |
| Energy | 2.3096 | 20.9968 | 17.6373 | 0.1260 | | 1.5958 | 1.5958 | | 1.5958 | 1.5958 | | 25,196.1128 | 25,196.1128 | 0.4829 | 0.4619 | 25,345.8407 |
| Mobile | 0.0000 | 0.0000 | 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** | **56.0814** | **20.9990** | **17.8815** | **0.1260** | **0.0000** | **1.5966** | **1.5966** | **0.0000** | **1.5966** | **1.5966** | | **25,196.6394** | **25,196.6394** | **0.4843** | **0.4619** | **25,346.4012** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 53.7717 | 2.1900e-003 | 0.2443 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5266 | 0.5266 | 1.3600e-003 | | 0.5605 |
| Energy | 1.9821 | 18.0188 | 15.1358 | 0.1081 | | 1.3694 | 1.3694 | | 1.3694 | 1.3694 | | 21,622.5921 | 21,622.5921 | 0.4144 | 0.3964 | 21,751.0844 |
| Mobile | 0.0000 | 0.0000 | 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** | **55.7538** | **18.0210** | **15.3801** | **0.1081** | **0.0000** | **1.3703** | **1.3703** | **0.0000** | **1.3703** | **1.3703** | | **21,623.1187** | **21,623.1187** | **0.4158** | **0.3964** | **21,751.6448** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.58** | **14.18** | **13.99** | **14.18** | **0.00** | **14.17** | **14.17** | **0.00** | **14.17** | **14.17** | **0.00** | **14.18** | **14.18** | **14.14** | **14.18** | **14.18** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 7/25/2019 | 10/30/2019 | 5 | 70 | |
| 2 | Site Preparation | Site Preparation | 10/31/2019 | 12/25/2019 | 5 | 40 | |
| 3 | Grading | Grading | 12/26/2019 | 5/27/2020 | 5 | 110 | |
| 4 | Building Construction | Building Construction | 5/28/2020 | 8/28/2024 | 5 | 1110 | |
| 5 | Paving | Paving | 8/29/2024 | 12/11/2024 | 5 | 75 | |
| 6 | Architectural Coating | Architectural Coating | 12/12/2024 | 3/26/2025 | 5 | 75 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 275**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 3,609,000; Non-Residential Outdoor: 1,203,000; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |

| | | | | | |
|---|---|---|---|---|---|
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 770.00 | 394.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 154.00 | 0.00 | 0.00 | 14.70 | 6.90 | 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.5134 | 35.7830 | 22.0600 | 0.0388 | | 1.7949 | 1.7949 | | 1.6697 | 1.6697 | | 3,816.8994 | 3,816.8994 | 1.0618 | | 3,843.4451 |
| **Total** | **3.5134** | **35.7830** | **22.0600** | **0.0388** | | **1.7949** | **1.7949** | | **1.6697** | **1.6697** | | **3,816.8994** | **3,816.8994** | **1.0618** | | **3,843.4451** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0826 | 0.0507 | 0.6664 | 1.7100e-003 | 0.1677 | 1.0300e-003 | 0.1687 | 0.0445 | 9.5000e-004 | 0.0454 | | 170.6284 | 170.6284 | 4.7800e-003 | | 170.7478 |
| **Total** | **0.0826** | **0.0507** | **0.6664** | **1.7100e-003** | **0.1677** | **1.0300e-003** | **0.1687** | **0.0445** | **9.5000e-004** | **0.0454** | | **170.6284** | **170.6284** | **4.7800e-003** | | **170.7478** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.5134 | 35.7830 | 22.0600 | 0.0388 | | 1.7949 | 1.7949 | | 1.6697 | 1.6697 | 0.0000 | 3,816.8994 | 3,816.8994 | 1.0618 | | 3,843.4451 |
| **Total** | **3.5134** | **35.7830** | **22.0600** | **0.0388** | | **1.7949** | **1.7949** | | **1.6697** | **1.6697** | **0.0000** | **3,816.8994** | **3,816.8994** | **1.0618** | | **3,843.4451** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0826 | 0.0507 | 0.6664 | 1.7100e-003 | 0.1677 | 1.0300e-003 | 0.1687 | 0.0445 | 9.5000e-004 | 0.0454 | | 170.6284 | 170.6284 | 4.7800e-003 | | 170.7478 |
| **Total** | **0.0826** | **0.0507** | **0.6664** | **1.7100e-003** | **0.1677** | **1.0300e-003** | **0.1687** | **0.0445** | **9.5000e-004** | **0.0454** | | **170.6284** | **170.6284** | **4.7800e-003** | | **170.7478** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.3350 | 45.5727 | 22.0630 | 0.0380 | | 2.3904 | 2.3904 | | 2.1991 | 2.1991 | | 3,766.4529 | 3,766.4529 | 1.1917 | | 3,796.2445 |
| **Total** | **4.3350** | **45.5727** | **22.0630** | **0.0380** | **18.0663** | **2.3904** | **20.4566** | **9.9307** | **2.1991** | **12.1298** | | **3,766.4529** | **3,766.4529** | **1.1917** | | **3,796.2445** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0991 | 0.0608 | 0.7997 | 2.0600e-003 | 0.2012 | 1.2400e-003 | 0.2024 | 0.0534 | 1.1400e-003 | 0.0545 | | 204.7540 | 204.7540 | 5.7300e-003 | | 204.8973 |
| **Total** | **0.0991** | **0.0608** | **0.7997** | **2.0600e-003** | **0.2012** | **1.2400e-003** | **0.2024** | **0.0534** | **1.1400e-003** | **0.0545** | | **204.7540** | **204.7540** | **5.7300e-003** | | **204.8973** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.3350 | 45.5727 | 22.0630 | 0.0380 | | 2.3904 | 2.3904 | | 2.1991 | 2.1991 | 0.0000 | 3,766.4529 | 3,766.4529 | 1.1917 | | 3,796.2445 |
| **Total** | **4.3350** | **45.5727** | **22.0630** | **0.0380** | **18.0663** | **2.3904** | **20.4566** | **9.9307** | **2.1991** | **12.1298** | **0.0000** | **3,766.4529** | **3,766.4529** | **1.1917** | | **3,796.2445** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0991 | 0.0608 | 0.7997 | 2.0600e-003 | 0.2012 | 1.2400e-003 | 0.2024 | 0.0534 | 1.1400e-003 | 0.0545 | | 204.7540 | 204.7540 | 5.7300e-003 | | 204.8973 |
| **Total** | **0.0991** | **0.0608** | **0.7997** | **2.0600e-003** | **0.2012** | **1.2400e-003** | **0.2024** | **0.0534** | **1.1400e-003** | **0.0545** | | **204.7540** | **204.7540** | **5.7300e-003** | | **204.8973** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.7389 | 54.5202 | 33.3768 | 0.0620 | | 2.3827 | 2.3827 | | 2.1920 | 2.1920 | | 6,140.0195 | 6,140.0195 | 1.9426 | | 6,188.5854 |
| **Total** | **4.7389** | **54.5202** | **33.3768** | **0.0620** | **8.6733** | **2.3827** | **11.0560** | **3.5965** | **2.1920** | **5.7885** | | **6,140.0195** | **6,140.0195** | **1.9426** | | **6,188.5854** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1101 | 0.0676 | 0.8885 | 2.2900e-003 | 0.2236 | 1.3800e-003 | 0.2249 | 0.0593 | 1.2700e-003 | 0.0606 | | 227.5045 | 227.5045 | 6.3700e-003 | | 227.6637 |
| **Total** | **0.1101** | **0.0676** | **0.8885** | **2.2900e-003** | **0.2236** | **1.3800e-003** | **0.2249** | **0.0593** | **1.2700e-003** | **0.0606** | | **227.5045** | **227.5045** | **6.3700e-003** | | **227.6637** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.7389 | 54.5202 | 33.3768 | 0.0620 | | 2.3827 | 2.3827 | | 2.1920 | 2.1920 | 0.0000 | 6,140.0195 | 6,140.0195 | 1.9426 | | 6,188.5854 |
| **Total** | **4.7389** | **54.5202** | **33.3768** | **0.0620** | **8.6733** | **2.3827** | **11.0560** | **3.5965** | **2.1920** | **5.7885** | **0.0000** | **6,140.0195** | **6,140.0195** | **1.9426** | | **6,188.5854** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1101 | 0.0676 | 0.8885 | 2.2900e-003 | 0.2236 | 1.3800e-003 | 0.2249 | 0.0593 | 1.2700e-003 | 0.0606 | | 227.5045 | 227.5045 | 6.3700e-003 | | 227.6637 |
| **Total** | **0.1101** | **0.0676** | **0.8885** | **2.2900e-003** | **0.2236** | **1.3800e-003** | **0.2249** | **0.0593** | **1.2700e-003** | **0.0606** | | **227.5045** | **227.5045** | **6.3700e-003** | | **227.6637** |

## 3.4 Grading - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4501 | 50.1975 | 31.9583 | 0.0620 | | 2.1739 | 2.1739 | | 2.0000 | 2.0000 | | 6,005.8653 | 6,005.8653 | 1.9424 | | 6,054.4257 |
| **Total** | **4.4501** | **50.1975** | **31.9583** | **0.0620** | **8.6733** | **2.1739** | **10.8472** | **3.5965** | **2.0000** | **5.5965** | | **6,005.8653** | **6,005.8653** | **1.9424** | | **6,054.4257** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1018 | 0.0602 | 0.8064 | 2.2100e-003 | 0.2236 | 1.3500e-003 | 0.2249 | 0.0593 | 1.2500e-003 | 0.0605 | | 220.3189 | 220.3189 | 5.6500e-003 | | 220.4601 |
| **Total** | **0.1018** | **0.0602** | **0.8064** | **2.2100e-003** | **0.2236** | **1.3500e-003** | **0.2249** | **0.0593** | **1.2500e-003** | **0.0605** | | **220.3189** | **220.3189** | **5.6500e-003** | | **220.4601** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4501 | 50.1975 | 31.9583 | 0.0620 | | 2.1739 | 2.1739 | | 2.0000 | 2.0000 | 0.0000 | 6,005.8653 | 6,005.8653 | 1.9424 | | 6,054.4257 |
| **Total** | **4.4501** | **50.1975** | **31.9583** | **0.0620** | **8.6733** | **2.1739** | **10.8472** | **3.5965** | **2.0000** | **5.5965** | **0.0000** | **6,005.8653** | **6,005.8653** | **1.9424** | | **6,054.4257** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1018 | 0.0602 | 0.8064 | 2.2100e-003 | 0.2236 | 1.3500e-003 | 0.2249 | 0.0593 | 1.2500e-003 | 0.0605 | | 220.3189 | 220.3189 | 5.6500e-003 | | 220.4601 |
| **Total** | **0.1018** | **0.0602** | **0.8064** | **2.2100e-003** | **0.2236** | **1.3500e-003** | **0.2249** | **0.0593** | **1.2500e-003** | **0.0605** | | **220.3189** | **220.3189** | **5.6500e-003** | | **220.4601** |

## 3.5 Building Construction - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.1198 | 19.1860 | 16.8485 | 0.0269 | | 1.1171 | 1.1171 | | 1.0503 | 1.0503 | | 2,553.0631 | 2,553.0631 | 0.6229 | | 2,568.6345 |
| **Total** | **2.1198** | **19.1860** | **16.8485** | **0.0269** | | **1.1171** | **1.1171** | | **1.0503** | **1.0503** | | **2,553.0631** | **2,553.0631** | **0.6229** | | **2,568.6345** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 1.0982 | 40.5394 | 7.4164 | 0.1029 | 2.5230 | 0.2306 | 2.7536 | 0.7264 | 0.2206 | 0.9470 | | 10,850.4024 | 10,850.4024 | 0.8138 | | 10,870.7481 |
| Worker | 3.9184 | 2.3173 | 31.0476 | 0.0852 | 8.6068 | 0.0521 | 8.6589 | 2.2826 | 0.0480 | 2.3306 | | 8,482.2780 | 8,482.2780 | 0.2174 | | 8,487.7135 |
| **Total** | **5.0165** | **42.8567** | **38.4639** | **0.1881** | **11.1298** | **0.2827** | **11.4125** | **3.0090** | **0.2686** | **3.2776** | | **19,332.6803** | **19,332.6803** | **1.0313** | | **19,358.4616** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.1198 | 19.1860 | 16.8485 | 0.0269 | | 1.1171 | 1.1171 | | 1.0503 | 1.0503 | 0.0000 | 2,553.0631 | 2,553.0631 | 0.6229 | | 2,568.6345 |
| **Total** | **2.1198** | **19.1860** | **16.8485** | **0.0269** | | **1.1171** | **1.1171** | | **1.0503** | **1.0503** | **0.0000** | **2,553.0631** | **2,553.0631** | **0.6229** | | **2,568.6345** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 1.0982 | 40.5394 | 7.4164 | 0.1029 | 2.5230 | 0.2306 | 2.7536 | 0.7264 | 0.2206 | 0.9470 | | 10,850.4024 | 10,850.4024 | 0.8138 | | 10,870.7481 |
| Worker | 3.9184 | 2.3173 | 31.0476 | 0.0852 | 8.6068 | 0.0521 | 8.6589 | 2.2826 | 0.0480 | 2.3306 | | 8,482.2780 | 8,482.2780 | 0.2174 | | 8,487.7135 |
| **Total** | **5.0165** | **42.8567** | **38.4639** | **0.1881** | **11.1298** | **0.2827** | **11.4125** | **3.0090** | **0.2686** | **3.2776** | | **19,332.6803** | **19,332.6803** | **1.0313** | | **19,358.4616** |

## 3.5 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.9009 | 17.4321 | 16.5752 | 0.0269 | | 0.9586 | 0.9586 | | 0.9013 | 0.9013 | | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **1.9009** | **17.4321** | **16.5752** | **0.0269** | | **0.9586** | **0.9586** | | **0.9013** | **0.9013** | | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.9198 | 36.4604 | 6.5052 | 0.1021 | 2.5229 | 0.0694 | 2.5923 | 0.7264 | 0.0663 | 0.7927 | | 10,766.0903 | 10,766.0903 | 0.7702 | | 10,785.3455 |
| Worker | 3.6505 | 2.0797 | 28.4678 | 0.0823 | 8.6068 | 0.0507 | 8.6575 | 2.2826 | 0.0467 | 2.3293 | | 8,198.5820 | 8,198.5820 | 0.1955 | | 8,203.4692 |
| **Total** | **4.5704** | **38.5401** | **34.9730** | **0.1844** | **11.1297** | **0.1201** | **11.2498** | **3.0090** | **0.1130** | **3.1220** | | **18,964.6723** | **18,964.6723** | **0.9657** | | **18,988.8147** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.9009 | 17.4321 | 16.5752 | 0.0269 | | 0.9586 | 0.9586 | | 0.9013 | 0.9013 | 0.0000 | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **1.9009** | **17.4321** | **16.5752** | **0.0269** | | **0.9586** | **0.9586** | | **0.9013** | **0.9013** | **0.0000** | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.9198 | 36.4604 | 6.5052 | 0.1021 | 2.5229 | 0.0694 | 2.5923 | 0.7264 | 0.0663 | 0.7927 | | 10,766.0903 | 10,766.0903 | 0.7702 | | 10,785.3455 |
| Worker | 3.6505 | 2.0797 | 28.4678 | 0.0823 | 8.6068 | 0.0507 | 8.6575 | 2.2826 | 0.0467 | 2.3293 | | 8,198.5820 | 8,198.5820 | 0.1955 | | 8,203.4692 |
| **Total** | **4.5704** | **38.5401** | **34.9730** | **0.1844** | **11.1297** | **0.1201** | **11.2498** | **3.0090** | **0.1130** | **3.1220** | | **18,964.6723** | **18,964.6723** | **0.9657** | | **18,988.8147** |

## 3.5 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.8577 | 34.3993 | 6.0505 | 0.1012 | 2.5228 | 0.0583 | 2.5811 | 0.7264 | 0.0558 | 0.7821 | | 10,674.4520 | 10,674.4520 | 0.7294 | | 10,692.6881 |
| Worker | 3.4146 | 1.8716 | 26.2578 | 0.0793 | 8.6068 | 0.0494 | 8.6562 | 2.2826 | 0.0455 | 2.3280 | | 7,899.0145 | 7,899.0145 | 0.1756 | | 7,903.4044 |
| **Total** | **4.2723** | **36.2709** | **32.3083** | **0.1804** | **11.1296** | **0.1077** | **11.2373** | **3.0089** | **0.1012** | **3.1101** | | **18,573.4665** | **18,573.4665** | **0.9050** | | **18,596.0925** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.8577 | 34.3993 | 6.0505 | 0.1012 | 2.5228 | 0.0583 | 2.5811 | 0.7264 | 0.0558 | 0.7821 | | 10,674.4520 | 10,674.4520 | 0.7294 | | 10,692.6881 |
| Worker | 3.4146 | 1.8716 | 26.2578 | 0.0793 | 8.6068 | 0.0494 | 8.6562 | 2.2826 | 0.0455 | 2.3280 | | 7,899.0145 | 7,899.0145 | 0.1756 | | 7,903.4044 |
| **Total** | **4.2723** | **36.2709** | **32.3083** | **0.1804** | **11.1296** | **0.1077** | **11.2373** | **3.0089** | **0.1012** | **3.1101** | | **18,573.4665** | **18,573.4665** | **0.9050** | | **18,596.0925** |

## 3.5 Building Construction - 2023

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.6578 | 25.8668 | 5.3331 | 0.0984 | 2.5227 | 0.0260 | 2.5487 | 0.7263 | 0.0249 | 0.7512 | | 10,390.5501 | 10,390.5501 | 0.5597 | | 10,404.5433 |
| Worker | 3.2016 | 1.6878 | 24.2328 | 0.0762 | 8.6068 | 0.0482 | 8.6550 | 2.2826 | 0.0444 | 2.3269 | | 7,598.8313 | 7,598.8313 | 0.1576 | | 7,602.7716 |
| **Total** | **3.8594** | **27.5546** | **29.5659** | **0.1747** | **11.1295** | **0.0742** | **11.2037** | **3.0089** | **0.0693** | **3.0781** | | **17,989.3815** | **17,989.3815** | **0.7173** | | **18,007.3149** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.6578 | 25.8668 | 5.3331 | 0.0984 | 2.5227 | 0.0260 | 2.5487 | 0.7263 | 0.0249 | 0.7512 | | 10,390.5501 | 10,390.5501 | 0.5597 | | 10,404.5433 |
| Worker | 3.2016 | 1.6878 | 24.2328 | 0.0762 | 8.6068 | 0.0482 | 8.6550 | 2.2826 | 0.0444 | 2.3269 | | 7,598.8313 | 7,598.8313 | 0.1576 | | 7,602.7716 |
| **Total** | **3.8594** | **27.5546** | **29.5659** | **0.1747** | **11.1295** | **0.0742** | **11.2037** | **3.0089** | **0.0693** | **3.0781** | | **17,989.3815** | **17,989.3815** | **0.7173** | | **18,007.3149** |

## 3.5 Building Construction - 2024

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.6451 | 25.7265 | 5.1517 | 0.0980 | 2.5226 | 0.0259 | 2.5485 | 0.7263 | 0.0248 | 0.7510 | | 10,349.9008 | 10,349.9008 | 0.5476 | | 10,363.5902 |
| Worker | 3.0172 | 1.5305 | 22.7217 | 0.0735 | 8.6068 | 0.0477 | 8.6545 | 2.2826 | 0.0439 | 2.3265 | | 7,327.5623 | 7,327.5623 | 0.1437 | | 7,331.1553 |
| **Total** | **3.6624** | **27.2570** | **27.8734** | **0.1715** | **11.1294** | **0.0736** | **11.2030** | **3.0089** | **0.0687** | **3.0775** | | **17,677.4631** | **17,677.4631** | **0.6913** | | **17,694.7455** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.6451 | 25.7265 | 5.1517 | 0.0980 | 2.5226 | 0.0259 | 2.5485 | 0.7263 | 0.0248 | 0.7510 | | 10,349.9008 | 10,349.9008 | 0.5476 | | 10,363.5902 |
| Worker | 3.0172 | 1.5305 | 22.7217 | 0.0735 | 8.6068 | 0.0477 | 8.6545 | 2.2826 | 0.0439 | 2.3265 | | 7,327.5623 | 7,327.5623 | 0.1437 | | 7,331.1553 |
| **Total** | **3.6624** | **27.2570** | **27.8734** | **0.1715** | **11.1294** | **0.0736** | **11.2030** | **3.0089** | **0.0687** | **3.0775** | | **17,677.4631** | **17,677.4631** | **0.6913** | | **17,694.7455** |

## 3.6 Paving - 2024

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9882** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0588 | 0.0298 | 0.4426 | 1.4300e-003 | 0.1677 | 9.3000e-004 | 0.1686 | 0.0445 | 8.6000e-004 | 0.0453 | | 142.7447 | 142.7447 | 2.8000e-003 | | 142.8147 |
| **Total** | **0.0588** | **0.0298** | **0.4426** | **1.4300e-003** | **0.1677** | **9.3000e-004** | **0.1686** | **0.0445** | **8.6000e-004** | **0.0453** | | **142.7447** | **142.7447** | **2.8000e-003** | | **142.8147** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | 0.0000 | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9882** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | **0.0000** | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0588 | 0.0298 | 0.4426 | 1.4300e-003 | 0.1677 | 9.3000e-004 | 0.1686 | 0.0445 | 8.6000e-004 | 0.0453 | | 142.7447 | 142.7447 | 2.8000e-003 | | 142.8147 |
| **Total** | **0.0588** | **0.0298** | **0.4426** | **1.4300e-003** | **0.1677** | **9.3000e-004** | **0.1686** | **0.0445** | **8.6000e-004** | **0.0453** | | **142.7447** | **142.7447** | **2.8000e-003** | | **142.8147** |

## 3.7 Architectural Coating - 2024

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 297.3816 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **297.5624** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.6035 | 0.3061 | 4.5444 | 0.0147 | 1.7214 | 9.5400e-003 | 1.7309 | 0.4565 | 8.7800e-003 | 0.4653 | | 1,465.5125 | 1,465.5125 | 0.0287 | | 1,466.2311 |
| **Total** | **0.6035** | **0.3061** | **4.5444** | **0.0147** | **1.7214** | **9.5400e-003** | **1.7309** | **0.4565** | **8.7800e-003** | **0.4653** | | **1,465.5125** | **1,465.5125** | **0.0287** | | **1,466.2311** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 297.3816 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **297.5624** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.6035 | 0.3061 | 4.5444 | 0.0147 | 1.7214 | 9.5400e-003 | 1.7309 | 0.4565 | 8.7800e-003 | 0.4653 | | 1,465.5125 | 1,465.5125 | 0.0287 | | 1,466.2311 |
| **Total** | **0.6035** | **0.3061** | **4.5444** | **0.0147** | **1.7214** | **9.5400e-003** | **1.7309** | **0.4565** | **8.7800e-003** | **0.4653** | | **1,465.5125** | **1,465.5125** | **0.0287** | | **1,466.2311** |

## 3.7 Architectural Coating - 2025

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 297.3816 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **297.5525** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.5702 | 0.2787 | 4.2167 | 0.0141 | 1.7214 | 9.3700e-003 | 1.7307 | 0.4565 | 8.6200e-003 | 0.4651 | | 1,406.7809 | 1,406.7809 | 0.0261 | | 1,407.4323 |
| **Total** | **0.5702** | **0.2787** | **4.2167** | **0.0141** | **1.7214** | **9.3700e-003** | **1.7307** | **0.4565** | **8.6200e-003** | **0.4651** | | **1,406.7809** | **1,406.7809** | **0.0261** | | **1,407.4323** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 297.3816 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **297.5525** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.5702 | 0.2787 | 4.2167 | 0.0141 | 1.7214 | 9.3700e-003 | 1.7307 | 0.4565 | 8.6200e-003 | 0.4651 | | 1,406.7809 | 1,406.7809 | 0.0261 | | 1,407.4323 |
| **Total** | **0.5702** | **0.2787** | **4.2167** | **0.0141** | **1.7214** | **9.3700e-003** | **1.7307** | **0.4565** | **8.6200e-003** | **0.4651** | | **1,406.7809** | **1,406.7809** | **0.0261** | | **1,407.4323** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Research & Development | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Research & Development | 16.60 | 8.40 | 6.90 | 33.00 | 48.00 | 19.00 | 82 | 15 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Research & Development | 0.565475 | 0.033834 | 0.192058 | 0.100675 | 0.009211 | 0.004032 | 0.016699 | 0.069908 | 0.001423 | 0.001062 | 0.004327 | 0.000756 | 0.000539 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 1.9821 | 18.0188 | 15.1358 | 0.1081 | | 1.3694 | 1.3694 | | 1.3694 | 1.3694 | | 21,622.5921 | 21,622.5921 | 0.4144 | 0.3964 | 21,751.0844 |
| NaturalGas Unmitigated | 2.3096 | 20.9968 | 17.6373 | 0.1260 | | 1.5958 | 1.5958 | | 1.5958 | 1.5958 | | 25,196.1128 | 25,196.1128 | 0.4829 | 0.4619 | 25,345.8407 |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Research & Development | 214167 | 2.3096 | 20.9968 | 17.6373 | 0.1260 | | 1.5958 | 1.5958 | | 1.5958 | 1.5958 | | 25,196.1128 | 25,196.1128 | 0.4829 | 0.4619 | 25,345.8407 |
| **Total** | | **2.3096** | **20.9968** | **17.6373** | **0.1260** | | **1.5958** | **1.5958** | | **1.5958** | **1.5958** | | **25,196.1128** | **25,196.1128** | **0.4829** | **0.4619** | **25,345.8407** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Research & Development | 183.792 | 1.9821 | 18.0188 | 15.1358 | 0.1081 | | 1.3694 | 1.3694 | | 1.3694 | 1.3694 | | 21,622.5921 | 21,622.5921 | 0.4144 | 0.3964 | 21,751.0844 |
| **Total** | | **1.9821** | **18.0188** | **15.1358** | **0.1081** | | **1.3694** | **1.3694** | | **1.3694** | **1.3694** | | **21,622.5921** | **21,622.5921** | **0.4144** | **0.3964** | **21,751.0844** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 53.7717 | 2.1900e-003 | 0.2443 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5266 | 0.5266 | 1.3600e-003 | | 0.5605 |
| Unmitigated | 53.7717 | 2.1900e-003 | 0.2443 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5266 | 0.5266 | 1.3600e-003 | | 0.5605 |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 6.1106 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 47.6388 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 0.0223 | 2.1900e-003 | 0.2443 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5266 | 0.5266 | 1.3600e-003 | | 0.5605 |
| **Total** | **53.7717** | **2.1900e-003** | **0.2443** | **2.0000e-005** | | **8.7000e-004** | **8.7000e-004** | | **8.7000e-004** | **8.7000e-004** | | **0.5266** | **0.5266** | **1.3600e-003** | | **0.5605** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 6.1106 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 47.6388 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 0.0223 | 2.1900e-003 | 0.2443 | 2.0000e-005 | | 8.7000e-004 | 8.7000e-004 | | 8.7000e-004 | 8.7000e-004 | | 0.5266 | 0.5266 | 1.3600e-003 | | 0.5605 |
| **Total** | **53.7717** | **2.1900e-003** | **0.2443** | **2.0000e-005** | | **8.7000e-004** | **8.7000e-004** | | **8.7000e-004** | **8.7000e-004** | | **0.5266** | **0.5266** | **1.3600e-003** | | **0.5605** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

## 11.0 Vegetation

# Existing VMT Operations CalEEMod Output

# City of Murrieta General Plan Update - Existing VMT

**Riverside-South Coast County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Apartments Mid Rise | 1,572.00 | Dwelling Unit | 41.37 | 1,572,000.00 | 4496 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2035 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Adjusted trip rate to meet annual VMT provided by VRPA

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblVehicleTrips | ST_TR | 6.39 | 354.91 |
| tblVehicleTrips | SU_TR | 5.86 | 325.48 |
| tblVehicleTrips | WD_TR | 6.65 | 369.35 |

# 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2019 | 0.2335 | 2.4540 | 1.4531 | 2.6300e-003 | 0.4774 | 0.1189 | 0.5963 | 0.2155 | 0.1099 | 0.3253 | 0.0000 | 236.1047 | 236.1047 | 0.0688 | 0.0000 | 237.8233 |
| 2020 | 0.9517 | 5.4941 | 7.1833 | 0.0217 | 1.7122 | 0.1883 | 1.9005 | 0.4785 | 0.1761 | 0.6546 | 0.0000 | 1,966.9150 | 1,966.9150 | 0.1646 | 0.0000 | 1,971.0289 |
| 2021 | 0.9337 | 4.7460 | 7.2068 | 0.0236 | 1.7622 | 0.1387 | 1.9009 | 0.4711 | 0.1303 | 0.6014 | 0.0000 | 2,150.2307 | 2,150.2307 | 0.1443 | 0.0000 | 2,153.8386 |
| 2022 | 0.8616 | 4.3311 | 6.7598 | 0.0230 | 1.7554 | 0.1179 | 1.8733 | 0.4693 | 0.1108 | 0.5801 | 0.0000 | 2,089.7914 | 2,089.7914 | 0.1381 | 0.0000 | 2,093.2431 |
| 2023 | 4.9769 | 0.3316 | 0.6280 | 1.3100e-003 | 0.0728 | 0.0164 | 0.0892 | 0.0193 | 0.0152 | 0.0346 | 0.0000 | 116.6998 | 116.6998 | 0.0193 | 0.0000 | 117.1833 |
| **Maximum** | **4.9769** | **5.4941** | **7.2068** | **0.0236** | **1.7622** | **0.1883** | **1.9009** | **0.4785** | **0.1761** | **0.6546** | **0.0000** | **2,150.2307** | **2,150.2307** | **0.1646** | **0.0000** | **2,153.8386** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2019 | 0.2335 | 2.4540 | 1.4531 | 2.6300e-003 | 0.4774 | 0.1189 | 0.5963 | 0.2155 | 0.1099 | 0.3253 | 0.0000 | 236.1044 | 236.1044 | 0.0688 | 0.0000 | 237.8231 |
| 2020 | 0.9517 | 5.4941 | 7.1833 | 0.0217 | 1.7122 | 0.1883 | 1.9005 | 0.4785 | 0.1761 | 0.6546 | 0.0000 | 1,966.9145 | 1,966.9145 | 0.1646 | 0.0000 | 1,971.0285 |
| 2021 | 0.9337 | 4.7459 | 7.2068 | 0.0236 | 1.7622 | 0.1387 | 1.9009 | 0.4711 | 0.1303 | 0.6014 | 0.0000 | 2,150.2303 | 2,150.2303 | 0.1443 | 0.0000 | 2,153.8383 |
| 2022 | 0.8616 | 4.3311 | 6.7598 | 0.0230 | 1.7554 | 0.1179 | 1.8733 | 0.4693 | 0.1108 | 0.5801 | 0.0000 | 2,089.7911 | 2,089.7911 | 0.1381 | 0.0000 | 2,093.2427 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 | 4.9769 | 0.3316 | 0.6280 | 1.3100e-003 | 0.0728 | 0.0164 | 0.0892 | 0.0193 | 0.0152 | 0.0346 | 0.0000 | 116.6997 | 116.6997 | 0.0193 | 0.0000 | 117.1832 |
| **Maximum** | **4.9769** | **5.4941** | **7.2068** | **0.0236** | **1.7622** | **0.1883** | **1.9009** | **0.4785** | **0.1761** | **0.6546** | **0.0000** | **2,150.2303** | **2,150.2303** | **0.1646** | **0.0000** | **2,153.8383** |

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

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 7-29-2019 | 10-28-2019 | 1.3867 | 1.3867 |
| 2 | 10-29-2019 | 1-28-2020 | 1.8464 | 1.8464 |
| 3 | 1-29-2020 | 4-28-2020 | 1.6395 | 1.6395 |
| 4 | 4-29-2020 | 7-28-2020 | 1.5674 | 1.5674 |
| 5 | 7-29-2020 | 10-28-2020 | 1.5839 | 1.5839 |
| 6 | 10-29-2020 | 1-28-2021 | 1.5367 | 1.5367 |
| 7 | 1-29-2021 | 4-28-2021 | 1.4022 | 1.4022 |
| 8 | 4-29-2021 | 7-28-2021 | 1.4201 | 1.4201 |
| 9 | 7-29-2021 | 10-28-2021 | 1.4347 | 1.4347 |
| 10 | 10-29-2021 | 1-28-2022 | 1.3965 | 1.3965 |
| 11 | 1-29-2022 | 4-28-2022 | 1.2874 | 1.2874 |
| 12 | 4-29-2022 | 7-28-2022 | 1.3041 | 1.3041 |
| 13 | 7-29-2022 | 10-28-2022 | 1.3174 | 1.3174 |
| 14 | 10-29-2022 | 1-28-2023 | 1.0180 | 1.0180 |
| 15 | 1-29-2023 | 4-28-2023 | 2.9207 | 2.9207 |
| 16 | 4-29-2023 | 7-28-2023 | 2.2722 | 2.2722 |
| | | Highest | 2.9207 | 2.9207 |

## 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 | 11.8043 | 0.5941 | 26.1476 | 0.0264 | | 1.5909 | 1.5909 | | 1.5909 | 1.5909 | 166.9764 | 347.3524 | 514.3288 | 0.5232 | 0.0113 | 530.7852 |
| Energy | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 3,528.8865 | 3,528.8865 | 0.1182 | 0.0423 | 3,544.4462 |
| Mobile | 90.0111 | 825.3176 | 1,139.2682 | 7.4001 | 739.1551 | 2.9986 | 742.1536 | 197.8315 | 2.7959 | 200.6273 | 0.0000 | 690,671.8108 | 690,671.8108 | 25.0107 | 0.0000 | 691,297.0783 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 146.7868 | 0.0000 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 32.4938 | 653.4978 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | **101.9407** | **826.9833** | **1,165.8717** | **7.4333** | **739.1551** | **4.6761** | **743.8312** | **197.8315** | **4.4735** | **202.3049** | **346.2570** | **695,201.5475** | **695,547.8045** | **37.6914** | **0.1380** | **696,531.2166** |

## 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 | 11.8043 | 0.5941 | 26.1476 | 0.0264 | | 1.5909 | 1.5909 | | 1.5909 | 1.5909 | 166.9764 | 347.3524 | 514.3288 | 0.5232 | 0.0113 | 530.7852 |
| Energy | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 3,528.8865 | 3,528.8865 | 0.1182 | 0.0423 | 3,544.4462 |
| Mobile | 90.0111 | 825.3176 | 1,139.2682 | 7.4001 | 739.1551 | 2.9986 | 742.1536 | 197.8315 | 2.7959 | 200.6273 | 0.0000 | 690,671.8108 | 690,671.8108 | 25.0107 | 0.0000 | 691,297.0783 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 146.7868 | 0.0000 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 32.4938 | 653.4978 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | **101.9407** | **826.9833** | **1,165.8717** | **7.4333** | **739.1551** | **4.6761** | **743.8312** | **197.8315** | **4.4735** | **202.3049** | **346.2570** | **695,201.5475** | **695,547.8045** | **37.6914** | **0.1380** | **696,531.2166** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 7/29/2019 | 10/4/2019 | 5 | 50 | |
| 2 | Site Preparation | Site Preparation | 10/5/2019 | 11/15/2019 | 5 | 30 | |
| 3 | Grading | Grading | 11/16/2019 | 2/28/2020 | 5 | 75 | |
| 4 | Building Construction | Building Construction | 2/29/2020 | 12/30/2022 | 5 | 740 | |
| 5 | Paving | Paving | 12/31/2022 | 3/17/2023 | 5 | 55 | |
| 6 | Architectural Coating | Architectural Coating | 3/18/2023 | 6/2/2023 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 3,183,300; Residential Outdoor: 1,061,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |

| | | | | | |
|---|---|---|---|---|---|
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,132.00 | 168.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 226.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2019

**Unmitigated Construction On-Site**

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

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0878 | 0.8946 | 0.5515 | 9.7000e-004 | | 0.0449 | 0.0449 | | 0.0417 | 0.0417 | 0.0000 | 86.5658 | 86.5658 | 0.0241 | 0.0000 | 87.1679 |
| **Total** | **0.0878** | **0.8946** | **0.5515** | **9.7000e-004** | | **0.0449** | **0.0449** | | **0.0417** | **0.0417** | **0.0000** | **86.5658** | **86.5658** | **0.0241** | **0.0000** | **87.1679** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.8600e-003 | 1.3600e-003 | 0.0142 | 4.0000e-005 | 4.1200e-003 | 3.0000e-005 | 4.1500e-003 | 1.0900e-003 | 2.0000e-005 | 1.1200e-003 | 0.0000 | 3.5610 | 3.5610 | 1.0000e-004 | 0.0000 | 3.5635 |
| **Total** | **1.8600e-003** | **1.3600e-003** | **0.0142** | **4.0000e-005** | **4.1200e-003** | **3.0000e-005** | **4.1500e-003** | **1.0900e-003** | **2.0000e-005** | **1.1200e-003** | **0.0000** | **3.5610** | **3.5610** | **1.0000e-004** | **0.0000** | **3.5635** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0878 | 0.8946 | 0.5515 | 9.7000e-004 | | 0.0449 | 0.0449 | | 0.0417 | 0.0417 | 0.0000 | 86.5657 | 86.5657 | 0.0241 | 0.0000 | 87.1678 |
| **Total** | **0.0878** | **0.8946** | **0.5515** | **9.7000e-004** | | **0.0449** | **0.0449** | | **0.0417** | **0.0417** | **0.0000** | **86.5657** | **86.5657** | **0.0241** | **0.0000** | **87.1678** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.8600e-003 | 1.3600e-003 | 0.0142 | 4.0000e-005 | 4.1200e-003 | 3.0000e-005 | 4.1500e-003 | 1.0900e-003 | 2.0000e-005 | 1.1200e-003 | 0.0000 | 3.5610 | 3.5610 | 1.0000e-004 | 0.0000 | 3.5635 |
| **Total** | **1.8600e-003** | **1.3600e-003** | **0.0142** | **4.0000e-005** | **4.1200e-003** | **3.0000e-005** | **4.1500e-003** | **1.0900e-003** | **2.0000e-005** | **1.1200e-003** | **0.0000** | **3.5610** | **3.5610** | **1.0000e-004** | **0.0000** | **3.5635** |

## 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 | | | | | 0.2710 | 0.0000 | 0.2710 | 0.1490 | 0.0000 | 0.1490 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0650 | 0.6836 | 0.3310 | 5.7000e-004 | | 0.0359 | 0.0359 | | 0.0330 | 0.0330 | 0.0000 | 51.2530 | 51.2530 | 0.0162 | 0.0000 | 51.6584 |
| **Total** | **0.0650** | **0.6836** | **0.3310** | **5.7000e-004** | **0.2710** | **0.0359** | **0.3069** | **0.1490** | **0.0330** | **0.1820** | **0.0000** | **51.2530** | **51.2530** | **0.0162** | **0.0000** | **51.6584** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.3400e-003 | 9.8000e-004 | 0.0102 | 3.0000e-005 | 2.9700e-003 | 2.0000e-005 | 2.9900e-003 | 7.9000e-004 | 2.0000e-005 | 8.1000e-004 | 0.0000 | 2.5639 | 2.5639 | 7.0000e-005 | 0.0000 | 2.5657 |
| **Total** | **1.3400e-003** | **9.8000e-004** | **0.0102** | **3.0000e-005** | **2.9700e-003** | **2.0000e-005** | **2.9900e-003** | **7.9000e-004** | **2.0000e-005** | **8.1000e-004** | **0.0000** | **2.5639** | **2.5639** | **7.0000e-005** | **0.0000** | **2.5657** |

## 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 | | | | | 0.2710 | 0.0000 | 0.2710 | 0.1490 | 0.0000 | 0.1490 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0650 | 0.6836 | 0.3309 | 5.7000e-004 | | 0.0359 | 0.0359 | | 0.0330 | 0.0330 | 0.0000 | 51.2530 | 51.2530 | 0.0162 | 0.0000 | 51.6584 |
| **Total** | **0.0650** | **0.6836** | **0.3309** | **5.7000e-004** | **0.2710** | **0.0359** | **0.3069** | **0.1490** | **0.0330** | **0.1820** | **0.0000** | **51.2530** | **51.2530** | **0.0162** | **0.0000** | **51.6584** |

## Mitigated Construction Off-Site

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.3400e-003 | 9.8000e-004 | 0.0102 | 3.0000e-005 | 2.9700e-003 | 2.0000e-005 | 2.9900e-003 | 7.9000e-004 | 2.0000e-005 | 8.1000e-004 | 0.0000 | 2.5639 | 2.5639 | 7.0000e-005 | 0.0000 | 2.5657 |
| **Total** | **1.3400e-003** | **9.8000e-004** | **0.0102** | **3.0000e-005** | **2.9700e-003** | **2.0000e-005** | **2.9900e-003** | **7.9000e-004** | **2.0000e-005** | **8.1000e-004** | **0.0000** | **2.5639** | **2.5639** | **7.0000e-005** | **0.0000** | **2.5657** |

## 3.4 Grading - 2019

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1958 | 0.0000 | 0.1958 | 0.0637 | 0.0000 | 0.0637 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0758 | 0.8723 | 0.5340 | 9.9000e-004 | | 0.0381 | 0.0381 | | 0.0351 | 0.0351 | 0.0000 | 89.1221 | 89.1221 | 0.0282 | 0.0000 | 89.8270 |
| **Total** | **0.0758** | **0.8723** | **0.5340** | **9.9000e-004** | **0.1958** | **0.0381** | **0.2339** | **0.0637** | **0.0351** | **0.0988** | **0.0000** | **89.1221** | **89.1221** | **0.0282** | **0.0000** | **89.8270** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5900e-003 | 1.1600e-003 | 0.0121 | 3.0000e-005 | 3.5200e-003 | 2.0000e-005 | 3.5400e-003 | 9.3000e-004 | 2.0000e-005 | 9.5000e-004 | 0.0000 | 3.0388 | 3.0388 | 8.0000e-005 | 0.0000 | 3.0408 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **1.5900e-003** | **1.1600e-003** | **0.0121** | **3.0000e-005** | **3.5200e-003** | **2.0000e-005** | **3.5400e-003** | **9.3000e-004** | **2.0000e-005** | **9.5000e-004** | **0.0000** | **3.0388** | **3.0388** | **8.0000e-005** | **0.0000** | **3.0408** |

## 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 | | | | | 0.1958 | 0.0000 | 0.1958 | 0.0637 | 0.0000 | 0.0637 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0758 | 0.8723 | 0.5340 | 9.9000e-004 | | 0.0381 | 0.0381 | | 0.0351 | 0.0351 | 0.0000 | 89.1220 | 89.1220 | 0.0282 | 0.0000 | 89.8269 |
| **Total** | **0.0758** | **0.8723** | **0.5340** | **9.9000e-004** | **0.1958** | **0.0381** | **0.2339** | **0.0637** | **0.0351** | **0.0988** | **0.0000** | **89.1220** | **89.1220** | **0.0282** | **0.0000** | **89.8269** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5900e-003 | 1.1600e-003 | 0.0121 | 3.0000e-005 | 3.5200e-003 | 2.0000e-005 | 3.5400e-003 | 9.3000e-004 | 2.0000e-005 | 9.5000e-004 | 0.0000 | 3.0388 | 3.0388 | 8.0000e-005 | 0.0000 | 3.0408 |
| **Total** | **1.5900e-003** | **1.1600e-003** | **0.0121** | **3.0000e-005** | **3.5200e-003** | **2.0000e-005** | **3.5400e-003** | **9.3000e-004** | **2.0000e-005** | **9.5000e-004** | **0.0000** | **3.0388** | **3.0388** | **8.0000e-005** | **0.0000** | **3.0408** |

# 3.4 Grading - 2020

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.2289 | 0.0000 | 0.2289 | 0.0819 | 0.0000 | 0.0819 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0957 | 1.0793 | 0.6871 | 1.3300e-003 | | 0.0467 | 0.0467 | | 0.0430 | 0.0430 | 0.0000 | 117.1412 | 117.1412 | 0.0379 | 0.0000 | 118.0884 |
| **Total** | **0.0957** | **1.0793** | **0.6871** | **1.3300e-003** | **0.2289** | **0.0467** | **0.2756** | **0.0819** | **0.0430** | **0.1249** | **0.0000** | **117.1412** | **117.1412** | **0.0379** | **0.0000** | **118.0884** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.9800e-003 | 1.3800e-003 | 0.0148 | 4.0000e-005 | 4.7300e-003 | 3.0000e-005 | 4.7600e-003 | 1.2600e-003 | 3.0000e-005 | 1.2800e-003 | 0.0000 | 3.9543 | 3.9543 | 1.0000e-004 | 0.0000 | 3.9567 |
| **Total** | **1.9800e-003** | **1.3800e-003** | **0.0148** | **4.0000e-005** | **4.7300e-003** | **3.0000e-005** | **4.7600e-003** | **1.2600e-003** | **3.0000e-005** | **1.2800e-003** | **0.0000** | **3.9543** | **3.9543** | **1.0000e-004** | **0.0000** | **3.9567** |

## 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 | | | | | 0.2289 | 0.0000 | 0.2289 | 0.0819 | 0.0000 | 0.0819 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0957 | 1.0793 | 0.6871 | 1.3300e-003 | | 0.0467 | 0.0467 | | 0.0430 | 0.0430 | 0.0000 | 117.1411 | 117.1411 | 0.0379 | 0.0000 | 118.0882 |
| **Total** | **0.0957** | **1.0793** | **0.6871** | **1.3300e-003** | **0.2289** | **0.0467** | **0.2756** | **0.0819** | **0.0430** | **0.1249** | **0.0000** | **117.1411** | **117.1411** | **0.0379** | **0.0000** | **118.0882** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.9800e-003 | 1.3800e-003 | 0.0148 | 4.0000e-005 | 4.7300e-003 | 3.0000e-005 | 4.7600e-003 | 1.2600e-003 | 3.0000e-005 | 1.2800e-003 | 0.0000 | 3.9543 | 3.9543 | 1.0000e-004 | 0.0000 | 3.9567 |
| **Total** | **1.9800e-003** | **1.3800e-003** | **0.0148** | **4.0000e-005** | **4.7300e-003** | **3.0000e-005** | **4.7600e-003** | **1.2600e-003** | **3.0000e-005** | **1.2800e-003** | **0.0000** | **3.9543** | **3.9543** | **1.0000e-004** | **0.0000** | **3.9567** |

# 3.5 Building Construction - 2020

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2321 | 2.1009 | 1.8449 | 2.9500e-003 | | 0.1223 | 0.1223 | | 0.1150 | 0.1150 | 0.0000 | 253.6129 | 253.6129 | 0.0619 | 0.0000 | 255.1598 |
| **Total** | **0.2321** | **2.1009** | **1.8449** | **2.9500e-003** | | **0.1223** | **0.1223** | | **0.1150** | **0.1150** | **0.0000** | **253.6129** | **253.6129** | **0.0619** | **0.0000** | **255.1598** |

## 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 | 0.0523 | 1.9134 | 0.3743 | 4.7300e-003 | 0.1162 | 0.0108 | 0.1270 | 0.0335 | 0.0104 | 0.0439 | 0.0000 | 452.3350 | 452.3350 | 0.0362 | 0.0000 | 453.2389 |
| Worker | 0.5697 | 0.3992 | 4.2622 | 0.0126 | 1.3624 | 8.3900e-003 | 1.3708 | 0.3618 | 7.7300e-003 | 0.3695 | 0.0000 | 1,139.8716 | 1,139.8716 | 0.0285 | 0.0000 | 1,140.5852 |
| **Total** | **0.6220** | **2.3126** | **4.6365** | **0.0173** | **1.4786** | **0.0192** | **1.4978** | **0.3953** | **0.0181** | **0.4134** | **0.0000** | **1,592.2066** | **1,592.2066** | **0.0647** | **0.0000** | **1,593.8241** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2321 | 2.1009 | 1.8449 | 2.9500e-003 | | 0.1223 | 0.1223 | | 0.1150 | 0.1150 | 0.0000 | 253.6126 | 253.6126 | 0.0619 | 0.0000 | 255.1594 |
| **Total** | **0.2321** | **2.1009** | **1.8449** | **2.9500e-003** | | **0.1223** | **0.1223** | | **0.1150** | **0.1150** | **0.0000** | **253.6126** | **253.6126** | **0.0619** | **0.0000** | **255.1594** |

## 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 | 0.0523 | 1.9134 | 0.3743 | 4.7300e-003 | 0.1162 | 0.0108 | 0.1270 | 0.0335 | 0.0104 | 0.0439 | 0.0000 | 452.3350 | 452.3350 | 0.0362 | 0.0000 | 453.2389 |
| Worker | 0.5697 | 0.3992 | 4.2622 | 0.0126 | 1.3624 | 8.3900e-003 | 1.3708 | 0.3618 | 7.7300e-003 | 0.3695 | 0.0000 | 1,139.8716 | 1,139.8716 | 0.0285 | 0.0000 | 1,140.5852 |
| **Total** | **0.6220** | **2.3126** | **4.6365** | **0.0173** | **1.4786** | **0.0192** | **1.4978** | **0.3953** | **0.0181** | **0.4134** | **0.0000** | **1,592.2066** | **1,592.2066** | **0.0647** | **0.0000** | **1,593.8241** |

## 3.5 Building Construction - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2481 | 2.2749 | 2.1631 | 3.5100e-003 | | 0.1251 | 0.1251 | | 0.1176 | 0.1176 | 0.0000 | 302.2867 | 302.2867 | 0.0729 | 0.0000 | 304.1099 |
| **Total** | **0.2481** | **2.2749** | **2.1631** | **3.5100e-003** | | **0.1251** | **0.1251** | | **0.1176** | **0.1176** | **0.0000** | **302.2867** | **302.2867** | **0.0729** | **0.0000** | **304.1099** |

### 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 | 0.0523 | 2.0443 | 0.3933 | 5.5900e-003 | 0.1385 | 3.9100e-003 | 0.1424 | 0.0400 | 3.7400e-003 | 0.0437 | 0.0000 | 534.8868 | 534.8868 | 0.0408 | 0.0000 | 535.9069 |
| Worker | 0.6334 | 0.4268 | 4.6505 | 0.0145 | 1.6237 | 9.7300e-003 | 1.6334 | 0.4312 | 8.9600e-003 | 0.4401 | 0.0000 | 1,313.0572 | 1,313.0572 | 0.0306 | 0.0000 | 1,313.8218 |
| **Total** | **0.6857** | **2.4711** | **5.0438** | **0.0201** | **1.7622** | **0.0136** | **1.7758** | **0.4711** | **0.0127** | **0.4838** | **0.0000** | **1,847.9440** | **1,847.9440** | **0.0714** | **0.0000** | **1,849.7288** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2481 | 2.2749 | 2.1631 | 3.5100e-003 | | 0.1251 | 0.1251 | | 0.1176 | 0.1176 | 0.0000 | 302.2863 | 302.2863 | 0.0729 | 0.0000 | 304.1095 |
| **Total** | **0.2481** | **2.2749** | **2.1631** | **3.5100e-003** | | **0.1251** | **0.1251** | | **0.1176** | **0.1176** | **0.0000** | **302.2863** | **302.2863** | **0.0729** | **0.0000** | **304.1095** |

## 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 | 0.0523 | 2.0443 | 0.3933 | 5.5900e-003 | 0.1385 | 3.9100e-003 | 0.1424 | 0.0400 | 3.7400e-003 | 0.0437 | 0.0000 | 534.8868 | 534.8868 | 0.0408 | 0.0000 | 535.9069 |
| Worker | 0.6334 | 0.4268 | 4.6505 | 0.0145 | 1.6237 | 9.7300e-003 | 1.6334 | 0.4312 | 8.9600e-003 | 0.4401 | 0.0000 | 1,313.0572 | 1,313.0572 | 0.0306 | 0.0000 | 1,313.8218 |
| **Total** | **0.6857** | **2.4711** | **5.0438** | **0.0201** | **1.7622** | **0.0136** | **1.7758** | **0.4711** | **0.0127** | **0.4838** | **0.0000** | **1,847.9440** | **1,847.9440** | **0.0714** | **0.0000** | **1,849.7288** |

## 3.5 Building Construction - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2218 | 2.0300 | 2.1272 | 3.5000e-003 | | 0.1052 | 0.1052 | | 0.0990 | 0.0990 | 0.0000 | 301.2428 | 301.2428 | 0.0722 | 0.0000 | 303.0471 |
| **Total** | **0.2218** | **2.0300** | **2.1272** | **3.5000e-003** | | **0.1052** | **0.1052** | | **0.0990** | **0.0990** | **0.0000** | **301.2428** | **301.2428** | **0.0722** | **0.0000** | **303.0471** |

### 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 | 0.0486 | 1.9185 | 0.3649 | 5.5200e-003 | 0.1379 | 3.2800e-003 | 0.1412 | 0.0398 | 3.1300e-003 | 0.0429 | 0.0000 | 528.2540 | 528.2540 | 0.0385 | 0.0000 | 529.2168 |
| Worker | 0.5912 | 0.3825 | 4.2676 | 0.0139 | 1.6175 | 9.4400e-003 | 1.6269 | 0.4295 | 8.6900e-003 | 0.4382 | 0.0000 | 1,260.2946 | 1,260.2946 | 0.0274 | 0.0000 | 1,260.9792 |
| **Total** | **0.6398** | **2.3011** | **4.6326** | **0.0195** | **1.7554** | **0.0127** | **1.7681** | **0.4693** | **0.0118** | **0.4811** | **0.0000** | **1,788.5486** | **1,788.5486** | **0.0659** | **0.0000** | **1,790.1960** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2218 | 2.0300 | 2.1272 | 3.5000e-003 | | 0.1052 | 0.1052 | | 0.0990 | 0.0990 | 0.0000 | 301.2425 | 301.2425 | 0.0722 | 0.0000 | 303.0467 |
| **Total** | **0.2218** | **2.0300** | **2.1272** | **3.5000e-003** | | **0.1052** | **0.1052** | | **0.0990** | **0.0990** | **0.0000** | **301.2425** | **301.2425** | **0.0722** | **0.0000** | **303.0467** |

**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 | 0.0486 | 1.9185 | 0.3649 | 5.5200e-003 | 0.1379 | 3.2800e-003 | 0.1412 | 0.0398 | 3.1300e-003 | 0.0429 | 0.0000 | 528.2540 | 528.2540 | 0.0385 | 0.0000 | 529.2168 |
| Worker | 0.5912 | 0.3825 | 4.2676 | 0.0139 | 1.6175 | 9.4400e-003 | 1.6269 | 0.4295 | 8.6900e-003 | 0.4382 | 0.0000 | 1,260.2946 | 1,260.2946 | 0.0274 | 0.0000 | 1,260.9792 |
| **Total** | **0.6398** | **2.3011** | **4.6326** | **0.0195** | **1.7554** | **0.0127** | **1.7681** | **0.4693** | **0.0118** | **0.4811** | **0.0000** | **1,788.5486** | **1,788.5486** | **0.0659** | **0.0000** | **1,790.1960** |

## 3.6 Paving - 2022

**Unmitigated Construction On-Site**

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 3.6 Paving - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0284 | 0.2803 | 0.4011 | 6.3000e-004 | | 0.0140 | 0.0140 | | 0.0129 | 0.0129 | 0.0000 | 55.0739 | 55.0739 | 0.0178 | 0.0000 | 55.5192 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0284** | **0.2803** | **0.4011** | **6.3000e-004** | | **0.0140** | **0.0140** | | **0.0129** | **0.0129** | **0.0000** | **55.0739** | **55.0739** | **0.0178** | **0.0000** | **55.5192** |

**Unmitigated Construction Off-Site**

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

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5600e-003 | 9.7000e-004 | 0.0110 | 4.0000e-005 | 4.5300e-003 | 3.0000e-005 | 4.5600e-003 | 1.2000e-003 | 2.0000e-005 | 1.2300e-003 | 0.0000 | 3.3986 | 3.3986 | 7.0000e-005 | 0.0000 | 3.4003 |
| **Total** | **1.5600e-003** | **9.7000e-004** | **0.0110** | **4.0000e-005** | **4.5300e-003** | **3.0000e-005** | **4.5600e-003** | **1.2000e-003** | **2.0000e-005** | **1.2300e-003** | **0.0000** | **3.3986** | **3.3986** | **7.0000e-005** | **0.0000** | **3.4003** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0284 | 0.2803 | 0.4011 | 6.3000e-004 | | 0.0140 | 0.0140 | | 0.0129 | 0.0129 | 0.0000 | 55.0738 | 55.0738 | 0.0178 | 0.0000 | 55.5191 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0284** | **0.2803** | **0.4011** | **6.3000e-004** | | **0.0140** | **0.0140** | | **0.0129** | **0.0129** | **0.0000** | **55.0738** | **55.0738** | **0.0178** | **0.0000** | **55.5191** |

## Mitigated Construction Off-Site

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 1.5600e-003 | 9.7000e-004 | 0.0110 | 4.0000e-005 | 4.5300e-003 | 3.0000e-005 | 4.5600e-003 | 1.2000e-003 | 2.0000e-005 | 1.2300e-003 | 0.0000 | 3.3986 | 3.3986 | 7.0000e-005 | 0.0000 | 3.4003 |
| **Total** | **1.5600e-003** | **9.7000e-004** | **0.0110** | **4.0000e-005** | **4.5300e-003** | **3.0000e-005** | **4.5600e-003** | **1.2000e-003** | **2.0000e-005** | **1.2300e-003** | **0.0000** | **3.3986** | **3.3986** | **7.0000e-005** | **0.0000** | **3.4003** |

## 3.7 Architectural Coating - 2023

### 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 | 4.9182 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.2700e-003 | 0.0358 | 0.0498 | 8.0000e-005 | | 1.9500e-003 | 1.9500e-003 | | 1.9500e-003 | 1.9500e-003 | 0.0000 | 7.0215 | 7.0215 | 4.2000e-004 | 0.0000 | 7.0320 |
| **Total** | **4.9235** | **0.0358** | **0.0498** | **8.0000e-005** | | **1.9500e-003** | **1.9500e-003** | | **1.9500e-003** | **1.9500e-003** | **0.0000** | **7.0215** | **7.0215** | **4.2000e-004** | **0.0000** | **7.0320** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0235 | 0.0146 | 0.1661 | 5.7000e-004 | 0.0683 | 3.9000e-004 | 0.0687 | 0.0181 | 3.6000e-004 | 0.0185 | 0.0000 | 51.2059 | 51.2059 | 1.0400e-003 | 0.0000 | 51.2318 |
| **Total** | **0.0235** | **0.0146** | **0.1661** | **5.7000e-004** | **0.0683** | **3.9000e-004** | **0.0687** | **0.0181** | **3.6000e-004** | **0.0185** | **0.0000** | **51.2059** | **51.2059** | **1.0400e-003** | **0.0000** | **51.2318** |

**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 | 4.9182 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.2700e-003 | 0.0358 | 0.0498 | 8.0000e-005 | | 1.9500e-003 | 1.9500e-003 | | 1.9500e-003 | 1.9500e-003 | 0.0000 | 7.0214 | 7.0214 | 4.2000e-004 | 0.0000 | 7.0319 |
| **Total** | **4.9235** | **0.0358** | **0.0498** | **8.0000e-005** | | **1.9500e-003** | **1.9500e-003** | | **1.9500e-003** | **1.9500e-003** | **0.0000** | **7.0214** | **7.0214** | **4.2000e-004** | **0.0000** | **7.0319** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0235 | 0.0146 | 0.1661 | 5.7000e-004 | 0.0683 | 3.9000e-004 | 0.0687 | 0.0181 | 3.6000e-004 | 0.0185 | 0.0000 | 51.2059 | 51.2059 | 1.0400e-003 | 0.0000 | 51.2318 |
| **Total** | **0.0235** | **0.0146** | **0.1661** | **5.7000e-004** | **0.0683** | **3.9000e-004** | **0.0687** | **0.0181** | **3.6000e-004** | **0.0185** | **0.0000** | **51.2059** | **51.2059** | **1.0400e-003** | **0.0000** | **51.2318** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 90.0111 | 825.3176 | 1,139.2682 | 7.4001 | 739.1551 | 2.9986 | 742.1536 | 197.8315 | 2.7959 | 200.6273 | 0.0000 | 690,671.8108 | 690,671.8108 | 25.0107 | 0.0000 | 691,297.0783 |
| Unmitigated | 90.0111 | 825.3176 | 1,139.2682 | 7.4001 | 739.1551 | 2.9986 | 742.1536 | 197.8315 | 2.7959 | 200.6273 | 0.0000 | 690,671.8108 | 690,671.8108 | 25.0107 | 0.0000 | 691,297.0783 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Mid Rise | 580,623.61 | 557,922.53 | 511647.27 | 1,939,325,411 | 1,939,325,411 |
| Total | 580,623.61 | 557,922.53 | 511,647.27 | 1,939,325,411 | 1,939,325,411 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.565475 | 0.033834 | 0.192058 | 0.100675 | 0.009211 | 0.004032 | 0.016699 | 0.069908 | 0.001423 | 0.001062 | 0.004327 | 0.000756 | 0.000539 |

# 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 | 2,287.8421 | 2,287.8421 | 0.0945 | 0.0195 | 2,296.0269 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2,287.8421 | 2,287.8421 | 0.0945 | 0.0195 | 2,296.0269 |
| NaturalGas Mitigated | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 1,241.0444 | 1,241.0444 | 0.0238 | 0.0228 | 1,248.4193 |
| NaturalGas Unmitigated | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 1,241.0444 | 1,241.0444 | 0.0238 | 0.0228 | 1,248.4193 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Mid Rise | 2.32563e+007 | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 1,241.0444 | 1,241.0444 | 0.0238 | 0.0228 | 1,248.4193 |
| **Total** | | **0.1254** | **1.0716** | **0.4560** | **6.8400e-003** | | **0.0866** | **0.0866** | | **0.0866** | **0.0866** | **0.0000** | **1,241.0444** | **1,241.0444** | **0.0238** | **0.0228** | **1,248.4193** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Mid Rise | 2.32563e+007 | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 1,241.0444 | 1,241.0444 | 0.0238 | 0.0228 | 1,248.4193 |
| **Total** | | **0.1254** | **1.0716** | **0.4560** | **6.8400e-003** | | **0.0866** | **0.0866** | | **0.0866** | **0.0866** | **0.0000** | **1,241.0444** | **1,241.0444** | **0.0238** | **0.0228** | **1,248.4193** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Mid Rise | 7.18044e+006 | 2,287.8421 | 0.0945 | 0.0195 | 2,296.0269 |
| **Total** | | **2,287.8421** | **0.0945** | **0.0195** | **2,296.0269** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Mid Rise | 7.18044e+006 | 2,287.8421 | 0.0945 | 0.0195 | 2,296.0269 |
| **Total** | | **2,287.8421** | **0.0945** | **0.0195** | **2,296.0269** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 11.8043 | 0.5941 | 26.1476 | 0.0264 | | 1.5909 | 1.5909 | | 1.5909 | 1.5909 | 166.9764 | 347.3524 | 514.3288 | 0.5232 | 0.0113 | 530.7852 |
| Unmitigated | 11.8043 | 0.5941 | 26.1476 | 0.0264 | | 1.5909 | 1.5909 | | 1.5909 | 1.5909 | 166.9764 | 347.3524 | 514.3288 | 0.5232 | 0.0113 | 530.7852 |

## 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 | 0.4918 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 5.6804 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 5.1490 | 0.4077 | 9.9930 | 0.0255 | | 1.5010 | 1.5010 | | 1.5010 | 1.5010 | 166.9764 | 320.8712 | 487.8476 | 0.4980 | 0.0113 | 503.6738 |
| Landscaping | 0.4830 | 0.1864 | 16.1545 | 8.6000e-004 | | 0.0899 | 0.0899 | | 0.0899 | 0.0899 | 0.0000 | 26.4812 | 26.4812 | 0.0252 | 0.0000 | 27.1114 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **11.8043** | **0.5941** | **26.1476** | **0.0264** | | **1.5909** | **1.5909** | | **1.5909** | **1.5909** | **166.9764** | **347.3524** | **514.3288** | **0.5232** | **0.0113** | **530.7852** |

**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 | 0.4918 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 5.6804 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 5.1490 | 0.4077 | 9.9930 | 0.0255 | | 1.5010 | 1.5010 | | 1.5010 | 1.5010 | 166.9764 | 320.8712 | 487.8476 | 0.4980 | 0.0113 | 503.6738 |
| Landscaping | 0.4830 | 0.1864 | 16.1545 | 8.6000e-004 | | 0.0899 | 0.0899 | | 0.0899 | 0.0899 | 0.0000 | 26.4812 | 26.4812 | 0.0252 | 0.0000 | 27.1114 |
| **Total** | **11.8043** | **0.5941** | **26.1476** | **0.0264** | | **1.5909** | **1.5909** | | **1.5909** | **1.5909** | **166.9764** | **347.3524** | **514.3288** | **0.5232** | **0.0113** | **530.7852** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| Unmitigated | 685.9916 | 3.3644 | 0.0844 | 795.2487 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Mid Rise | 102.422 / 64.5705 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | | **685.9916** | **3.3644** | **0.0844** | **795.2487** |

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Mid Rise | 102.422 / 64.5705 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | | **685.9916** | **3.3644** | **0.0844** | **795.2487** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| Unmitigated | 146.7868 | 8.6749 | 0.0000 | 363.6582 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Mid Rise | 723.12 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| **Total** | | **146.7868** | **8.6749** | **0.0000** | **363.6582** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|

| Land Use | tons | MT/yr | | | |
|---|---|---|---|---|---|
| Apartments Mid Rise | 723.12 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| **Total** | | **146.7868** | **8.6749** | **0.0000** | **363.6582** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

## 11.0 Vegetation

# City of Murrieta General Plan Update - Existing VMT

**Riverside-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Apartments Mid Rise | 1,572.00 | Dwelling Unit | 41.37 | 1,572,000.00 | 4496 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2035 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Adjusted trip rate to meet annual VMT provided by VRPA

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblVehicleTrips | ST_TR | 6.39 | 354.91 |
| tblVehicleTrips | SU_TR | 5.86 | 325.48 |
| tblVehicleTrips | WD_TR | 6.65 | 369.35 |

# 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 4.8490 | 54.5878 | 34.2653 | 0.0643 | 18.2675 | 2.3916 | 20.6591 | 9.9840 | 2.2003 | 12.1843 | 0.0000 | 6,367.5239 | 6,367.5239 | 1.9490 | 0.0000 | 6,416.2491 |
| 2020 | 8.3486 | 50.2577 | 65.6548 | 0.1960 | 13.7289 | 2.1753 | 15.0209 | 3.6654 | 2.0012 | 5.6570 | 0.0000 | 19,649.6807 | 19,649.6807 | 1.9481 | 0.0000 | 19,681.9185 |
| 2021 | 7.6599 | 36.0361 | 61.2003 | 0.1914 | 13.7289 | 1.0628 | 14.7916 | 3.6654 | 0.9982 | 4.6636 | 0.0000 | 19,196.9614 | 19,196.9614 | 1.2318 | 0.0000 | 19,227.7569 |
| 2022 | 7.0919 | 33.0348 | 57.5457 | 0.1866 | 13.7288 | 0.9065 | 14.6353 | 3.6654 | 0.8518 | 4.5171 | 0.0000 | 18,718.4537 | 18,718.4537 | 1.1811 | 0.0000 | 18,747.9819 |
| 2023 | 179.9749 | 10.2245 | 15.0563 | 0.0254 | 2.5262 | 0.5111 | 2.6111 | 0.6700 | 0.4703 | 0.7538 | 0.0000 | 2,511.7544 | 2,511.7544 | 0.7171 | 0.0000 | 2,513.3319 |
| **Maximum** | **179.9749** | **54.5878** | **65.6548** | **0.1960** | **18.2675** | **2.3916** | **20.6591** | **9.9840** | **2.2003** | **12.1843** | **0.0000** | **19,649.6807** | **19,649.6807** | **1.9490** | **0.0000** | **19,681.9185** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 4.8490 | 54.5878 | 34.2653 | 0.0643 | 18.2675 | 2.3916 | 20.6591 | 9.9840 | 2.2003 | 12.1843 | 0.0000 | 6,367.5239 | 6,367.5239 | 1.9490 | 0.0000 | 6,416.2491 |
| 2020 | 8.3486 | 50.2577 | 65.6548 | 0.1960 | 13.7289 | 2.1753 | 15.0209 | 3.6654 | 2.0012 | 5.6570 | 0.0000 | 19,649.6807 | 19,649.6807 | 1.9481 | 0.0000 | 19,681.9185 |
| 2021 | 7.6599 | 36.0361 | 61.2003 | 0.1914 | 13.7289 | 1.0628 | 14.7916 | 3.6654 | 0.9982 | 4.6636 | 0.0000 | 19,196.9614 | 19,196.9614 | 1.2318 | 0.0000 | 19,227.7569 |
| 2022 | 7.0919 | 33.0348 | 57.5457 | 0.1866 | 13.7288 | 0.9065 | 14.6353 | 3.6654 | 0.8518 | 4.5171 | 0.0000 | 18,718.4537 | 18,718.4537 | 1.1811 | 0.0000 | 18,747.9819 |
| 2023 | 179.9749 | 10.2245 | 15.0563 | 0.0254 | 2.5262 | 0.5111 | 2.6111 | 0.6700 | 0.4703 | 0.7538 | 0.0000 | 2,511.7544 | 2,511.7544 | 0.7171 | 0.0000 | 2,513.3319 |
| **Maximum** | **179.9749** | **54.5878** | **65.6548** | **0.1960** | **18.2675** | **2.3916** | **20.6591** | **9.9840** | **2.2003** | **12.1843** | **0.0000** | **19,649.6807** | **19,649.6807** | **1.9490** | **0.0000** | **19,681.9185** |

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

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 449.6052 | 34.1074 | 928.6796 | 2.0463 | | 120.8017 | 120.8017 | | 120.8017 | 120.8017 | 14,724.7957 | 28,529.5242 | 43,254.3199 | 44.1345 | 0.9994 | 44,655.5077 |
| Energy | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| Mobile | 594.3480 | 4,620.4225 | 7,189.4395 | 43.8958 | 4,224.1174 | 16.8461 | 4,240.9635 | 1,129.0321 | 15.7067 | 1,144.7388 | | 4,510,382.1963 | 4,510,382.1963 | 153.8749 | | 4,514,229.0693 |
| **Total** | **1,044.6403** | **4,660.4017** | **8,120.6178** | **45.9796** | **4,224.1174** | **138.1225** | **4,362.2399** | **1,129.0321** | **136.9831** | **1,266.0152** | **14,724.7957** | **4,546,407.7057** | **4,561,132.5014** | **198.1531** | **1.1368** | **4,566,425.1070** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 449.6052 | 34.1074 | 928.6796 | 2.0463 | | 120.8017 | 120.8017 | | 120.8017 | 120.8017 | 14,724.7957 | 28,529.5242 | 43,254.3199 | 44.1345 | 0.9994 | 44,655.5077 |
| Energy | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| Mobile | 594.3480 | 4,620.4225 | 7,189.4395 | 43.8958 | 4,224.1174 | 16.8461 | 4,240.9635 | 1,129.0321 | 15.7067 | 1,144.7388 | | 4,510,382.1963 | 4,510,382.1963 | 153.8749 | | 4,514,229.0693 |
| **Total** | **1,044.6403** | **4,660.4017** | **8,120.6178** | **45.9796** | **4,224.1174** | **138.1225** | **4,362.2399** | **1,129.0321** | **136.9831** | **1,266.0152** | **14,724.7957** | **4,546,407.7057** | **4,561,132.5014** | **198.1531** | **1.1368** | **4,566,425.1070** |

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

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 7/29/2019 | 10/4/2019 | 5 | 50 | |
| 2 | Site Preparation | Site Preparation | 10/5/2019 | 11/15/2019 | 5 | 30 | |
| 3 | Grading | Grading | 11/16/2019 | 2/28/2020 | 5 | 75 | |
| 4 | Building Construction | Building Construction | 2/29/2020 | 12/30/2022 | 5 | 740 | |
| 5 | Paving | Paving | 12/31/2022 | 3/17/2023 | 5 | 55 | |
| 6 | Architectural Coating | Architectural Coating | 3/18/2023 | 6/2/2023 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 3,183,300; Residential Outdoor: 1,061,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |

| | | | | | |
|---|---|---|---|---|---|
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,132.00 | 168.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 226.00 | 0.00 | 0.00 | 14.70 | 6.90 | 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.5134 | 35.7830 | 22.0600 | 0.0388 | | 1.7949 | 1.7949 | | 1.6697 | 1.6697 | | 3,816.8994 | 3,816.8994 | 1.0618 | | 3,843.4451 |
| **Total** | **3.5134** | **35.7830** | **22.0600** | **0.0388** | | **1.7949** | **1.7949** | | **1.6697** | **1.6697** | | **3,816.8994** | **3,816.8994** | **1.0618** | | **3,843.4451** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0826 | 0.0507 | 0.6664 | 1.7100e-003 | 0.1677 | 1.0300e-003 | 0.1687 | 0.0445 | 9.5000e-004 | 0.0454 | | 170.6284 | 170.6284 | 4.7800e-003 | | 170.7478 |
| **Total** | **0.0826** | **0.0507** | **0.6664** | **1.7100e-003** | **0.1677** | **1.0300e-003** | **0.1687** | **0.0445** | **9.5000e-004** | **0.0454** | | **170.6284** | **170.6284** | **4.7800e-003** | | **170.7478** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.5134 | 35.7830 | 22.0600 | 0.0388 | | 1.7949 | 1.7949 | | 1.6697 | 1.6697 | 0.0000 | 3,816.8994 | 3,816.8994 | 1.0618 | | 3,843.4451 |
| **Total** | **3.5134** | **35.7830** | **22.0600** | **0.0388** | | **1.7949** | **1.7949** | | **1.6697** | **1.6697** | **0.0000** | **3,816.8994** | **3,816.8994** | **1.0618** | | **3,843.4451** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0826 | 0.0507 | 0.6664 | 1.7100e-003 | 0.1677 | 1.0300e-003 | 0.1687 | 0.0445 | 9.5000e-004 | 0.0454 | | 170.6284 | 170.6284 | 4.7800e-003 | | 170.7478 |
| **Total** | **0.0826** | **0.0507** | **0.6664** | **1.7100e-003** | **0.1677** | **1.0300e-003** | **0.1687** | **0.0445** | **9.5000e-004** | **0.0454** | | **170.6284** | **170.6284** | **4.7800e-003** | | **170.7478** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.3350 | 45.5727 | 22.0630 | 0.0380 | | 2.3904 | 2.3904 | | 2.1991 | 2.1991 | | 3,766.4529 | 3,766.4529 | 1.1917 | | 3,796.2445 |
| **Total** | **4.3350** | **45.5727** | **22.0630** | **0.0380** | **18.0663** | **2.3904** | **20.4566** | **9.9307** | **2.1991** | **12.1298** | | **3,766.4529** | **3,766.4529** | **1.1917** | | **3,796.2445** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0991 | 0.0608 | 0.7997 | 2.0600e-003 | 0.2012 | 1.2400e-003 | 0.2024 | 0.0534 | 1.1400e-003 | 0.0545 | | 204.7540 | 204.7540 | 5.7300e-003 | | 204.8973 |
| **Total** | **0.0991** | **0.0608** | **0.7997** | **2.0600e-003** | **0.2012** | **1.2400e-003** | **0.2024** | **0.0534** | **1.1400e-003** | **0.0545** | | **204.7540** | **204.7540** | **5.7300e-003** | | **204.8973** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.3350 | 45.5727 | 22.0630 | 0.0380 | | 2.3904 | 2.3904 | | 2.1991 | 2.1991 | 0.0000 | 3,766.4529 | 3,766.4529 | 1.1917 | | 3,796.2445 |
| **Total** | **4.3350** | **45.5727** | **22.0630** | **0.0380** | **18.0663** | **2.3904** | **20.4566** | **9.9307** | **2.1991** | **12.1298** | **0.0000** | **3,766.4529** | **3,766.4529** | **1.1917** | | **3,796.2445** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0991 | 0.0608 | 0.7997 | 2.0600e-003 | 0.2012 | 1.2400e-003 | 0.2024 | 0.0534 | 1.1400e-003 | 0.0545 | | 204.7540 | 204.7540 | 5.7300e-003 | | 204.8973 |
| **Total** | **0.0991** | **0.0608** | **0.7997** | **2.0600e-003** | **0.2012** | **1.2400e-003** | **0.2024** | **0.0534** | **1.1400e-003** | **0.0545** | | **204.7540** | **204.7540** | **5.7300e-003** | | **204.8973** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.7389 | 54.5202 | 33.3768 | 0.0620 | | 2.3827 | 2.3827 | | 2.1920 | 2.1920 | | 6,140.0195 | 6,140.0195 | 1.9426 | | 6,188.5854 |
| **Total** | **4.7389** | **54.5202** | **33.3768** | **0.0620** | **8.6733** | **2.3827** | **11.0560** | **3.5965** | **2.1920** | **5.7885** | | **6,140.0195** | **6,140.0195** | **1.9426** | | **6,188.5854** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1101 | 0.0676 | 0.8885 | 2.2900e-003 | 0.2236 | 1.3800e-003 | 0.2249 | 0.0593 | 1.2700e-003 | 0.0606 | | 227.5045 | 227.5045 | 6.3700e-003 | | 227.6637 |
| **Total** | **0.1101** | **0.0676** | **0.8885** | **2.2900e-003** | **0.2236** | **1.3800e-003** | **0.2249** | **0.0593** | **1.2700e-003** | **0.0606** | | **227.5045** | **227.5045** | **6.3700e-003** | | **227.6637** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.7389 | 54.5202 | 33.3768 | 0.0620 | | 2.3827 | 2.3827 | | 2.1920 | 2.1920 | 0.0000 | 6,140.0195 | 6,140.0195 | 1.9426 | | 6,188.5854 |
| **Total** | **4.7389** | **54.5202** | **33.3768** | **0.0620** | **8.6733** | **2.3827** | **11.0560** | **3.5965** | **2.1920** | **5.7885** | **0.0000** | **6,140.0195** | **6,140.0195** | **1.9426** | | **6,188.5854** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1101 | 0.0676 | 0.8885 | 2.2900e-003 | 0.2236 | 1.3800e-003 | 0.2249 | 0.0593 | 1.2700e-003 | 0.0606 | | 227.5045 | 227.5045 | 6.3700e-003 | | 227.6637 |
| **Total** | **0.1101** | **0.0676** | **0.8885** | **2.2900e-003** | **0.2236** | **1.3800e-003** | **0.2249** | **0.0593** | **1.2700e-003** | **0.0606** | | **227.5045** | **227.5045** | **6.3700e-003** | | **227.6637** |

## 3.4 Grading - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4501 | 50.1975 | 31.9583 | 0.0620 | | 2.1739 | 2.1739 | | 2.0000 | 2.0000 | | 6,005.8653 | 6,005.8653 | 1.9424 | | 6,054.4257 |
| **Total** | **4.4501** | **50.1975** | **31.9583** | **0.0620** | **8.6733** | **2.1739** | **10.8472** | **3.5965** | **2.0000** | **5.5965** | | **6,005.8653** | **6,005.8653** | **1.9424** | | **6,054.4257** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1018 | 0.0602 | 0.8064 | 2.2100e-003 | 0.2236 | 1.3500e-003 | 0.2249 | 0.0593 | 1.2500e-003 | 0.0605 | | 220.3189 | 220.3189 | 5.6500e-003 | | 220.4601 |
| **Total** | **0.1018** | **0.0602** | **0.8064** | **2.2100e-003** | **0.2236** | **1.3500e-003** | **0.2249** | **0.0593** | **1.2500e-003** | **0.0605** | | **220.3189** | **220.3189** | **5.6500e-003** | | **220.4601** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4501 | 50.1975 | 31.9583 | 0.0620 | | 2.1739 | 2.1739 | | 2.0000 | 2.0000 | 0.0000 | 6,005.8653 | 6,005.8653 | 1.9424 | | 6,054.4257 |
| **Total** | **4.4501** | **50.1975** | **31.9583** | **0.0620** | **8.6733** | **2.1739** | **10.8472** | **3.5965** | **2.0000** | **5.5965** | **0.0000** | **6,005.8653** | **6,005.8653** | **1.9424** | | **6,054.4257** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1018 | 0.0602 | 0.8064 | 2.2100e-003 | 0.2236 | 1.3500e-003 | 0.2249 | 0.0593 | 1.2500e-003 | 0.0605 | | 220.3189 | 220.3189 | 5.6500e-003 | | 220.4601 |
| **Total** | **0.1018** | **0.0602** | **0.8064** | **2.2100e-003** | **0.2236** | **1.3500e-003** | **0.2249** | **0.0593** | **1.2500e-003** | **0.0605** | | **220.3189** | **220.3189** | **5.6500e-003** | | **220.4601** |

## 3.5 Building Construction - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.1198 | 19.1860 | 16.8485 | 0.0269 | | 1.1171 | 1.1171 | | 1.0503 | 1.0503 | | 2,553.0631 | 2,553.0631 | 0.6229 | | 2,568.6345 |
| **Total** | **2.1198** | **19.1860** | **16.8485** | **0.0269** | | **1.1171** | **1.1171** | | **1.0503** | **1.0503** | | **2,553.0631** | **2,553.0631** | **0.6229** | | **2,568.6345** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.4683 | 17.2858 | 3.1623 | 0.0439 | 1.0758 | 0.0983 | 1.1741 | 0.3098 | 0.0941 | 0.4038 | | 4,626.5675 | 4,626.5675 | 0.3470 | | 4,635.2429 |
| Worker | 5.7605 | 3.4068 | 45.6439 | 0.1252 | 12.6531 | 0.0766 | 12.7297 | 3.3557 | 0.0706 | 3.4262 | | 12,470.0502 | 12,470.0502 | 0.3196 | | 12,478.0411 |
| **Total** | **6.2288** | **20.6926** | **48.8063** | **0.1691** | **13.7289** | **0.1749** | **13.9038** | **3.6654** | **0.1646** | **3.8300** | | **17,096.6177** | **17,096.6177** | **0.6667** | | **17,113.2840** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.1198 | 19.1860 | 16.8485 | 0.0269 | | 1.1171 | 1.1171 | | 1.0503 | 1.0503 | 0.0000 | 2,553.0631 | 2,553.0631 | 0.6229 | | 2,568.6345 |
| **Total** | **2.1198** | **19.1860** | **16.8485** | **0.0269** | | **1.1171** | **1.1171** | | **1.0503** | **1.0503** | **0.0000** | **2,553.0631** | **2,553.0631** | **0.6229** | | **2,568.6345** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.4683 | 17.2858 | 3.1623 | 0.0439 | 1.0758 | 0.0983 | 1.1741 | 0.3098 | 0.0941 | 0.4038 | | 4,626.5675 | 4,626.5675 | 0.3470 | | 4,635.2429 |
| Worker | 5.7605 | 3.4068 | 45.6439 | 0.1252 | 12.6531 | 0.0766 | 12.7297 | 3.3557 | 0.0706 | 3.4262 | | 12,470.0502 | 12,470.0502 | 0.3196 | | 12,478.0411 |
| **Total** | **6.2288** | **20.6926** | **48.8063** | **0.1691** | **13.7289** | **0.1749** | **13.9038** | **3.6654** | **0.1646** | **3.8300** | | **17,096.6177** | **17,096.6177** | **0.6667** | | **17,113.2840** |

## 3.5 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.9009 | 17.4321 | 16.5752 | 0.0269 | | 0.9586 | 0.9586 | | 0.9013 | 0.9013 | | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **1.9009** | **17.4321** | **16.5752** | **0.0269** | | **0.9586** | **0.9586** | | **0.9013** | **0.9013** | | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3922 | 15.5466 | 2.7738 | 0.0435 | 1.0758 | 0.0296 | 1.1053 | 0.3097 | 0.0283 | 0.3380 | | 4,590.6172 | 4,590.6172 | 0.3284 | | 4,598.8275 |
| Worker | 5.3668 | 3.0574 | 41.8514 | 0.1210 | 12.6531 | 0.0746 | 12.7277 | 3.3557 | 0.0687 | 3.4243 | | 12,052.9803 | 12,052.9803 | 0.2874 | | 12,060.1652 |
| **Total** | **5.7590** | **18.6040** | **44.6251** | **0.1645** | **13.7289** | **0.1041** | **13.8330** | **3.6654** | **0.0969** | **3.7623** | | **16,643.5975** | **16,643.5975** | **0.6158** | | **16,658.9927** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.9009 | 17.4321 | 16.5752 | 0.0269 | | 0.9586 | 0.9586 | | 0.9013 | 0.9013 | 0.0000 | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **1.9009** | **17.4321** | **16.5752** | **0.0269** | | **0.9586** | **0.9586** | | **0.9013** | **0.9013** | **0.0000** | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3922 | 15.5466 | 2.7738 | 0.0435 | 1.0758 | 0.0296 | 1.1053 | 0.3097 | 0.0283 | 0.3380 | | 4,590.6172 | 4,590.6172 | 0.3284 | | 4,598.8275 |
| Worker | 5.3668 | 3.0574 | 41.8514 | 0.1210 | 12.6531 | 0.0746 | 12.7277 | 3.3557 | 0.0687 | 3.4243 | | 12,052.9803 | 12,052.9803 | 0.2874 | | 12,060.1652 |
| **Total** | **5.7590** | **18.6040** | **44.6251** | **0.1645** | **13.7289** | **0.1041** | **13.8330** | **3.6654** | **0.0969** | **3.7623** | | **16,643.5975** | **16,643.5975** | **0.6158** | | **16,658.9927** |

## 3.5 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3657 | 14.6677 | 2.5799 | 0.0431 | 1.0757 | 0.0249 | 1.1006 | 0.3097 | 0.0238 | 0.3335 | | 4,551.5430 | 4,551.5430 | 0.3110 | | 4,559.3188 |
| Worker | 5.0199 | 2.7515 | 38.6023 | 0.1165 | 12.6531 | 0.0726 | 12.7257 | 3.3557 | 0.0668 | 3.4225 | | 11,612.5772 | 11,612.5772 | 0.2582 | | 11,619.0309 |
| **Total** | **5.3856** | **17.4192** | **41.1823** | **0.1597** | **13.7288** | **0.0975** | **13.8263** | **3.6654** | **0.0906** | **3.7560** | | **16,164.1202** | **16,164.1202** | **0.5692** | | **16,178.3497** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3657 | 14.6677 | 2.5799 | 0.0431 | 1.0757 | 0.0249 | 1.1006 | 0.3097 | 0.0238 | 0.3335 | | 4,551.5430 | 4,551.5430 | 0.3110 | | 4,559.3188 |
| Worker | 5.0199 | 2.7515 | 38.6023 | 0.1165 | 12.6531 | 0.0726 | 12.7257 | 3.3557 | 0.0668 | 3.4225 | | 11,612.5772 | 11,612.5772 | 0.2582 | | 11,619.0309 |
| **Total** | **5.3856** | **17.4192** | **41.1823** | **0.1597** | **13.7288** | **0.0975** | **13.8263** | **3.6654** | **0.0906** | **3.7560** | | **16,164.1202** | **16,164.1202** | **0.5692** | | **16,178.3497** |

## 3.6 Paving - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1028 | 11.1249 | 14.5805 | 0.0228 | | 0.5679 | 0.5679 | | 0.5225 | 0.5225 | | 2,207.6603 | 2,207.6603 | 0.7140 | | 2,225.5104 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1028** | **11.1249** | **14.5805** | **0.0228** | | **0.5679** | **0.5679** | | **0.5225** | **0.5225** | | **2,207.6603** | **2,207.6603** | **0.7140** | | **2,225.5104** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0665 | 0.0365 | 0.5115 | 1.5400e-003 | 0.1677 | 9.6000e-004 | 0.1686 | 0.0445 | 8.9000e-004 | 0.0454 | | 153.8769 | 153.8769 | 3.4200e-003 | | 153.9624 |
| **Total** | **0.0665** | **0.0365** | **0.5115** | **1.5400e-003** | **0.1677** | **9.6000e-004** | **0.1686** | **0.0445** | **8.9000e-004** | **0.0454** | | **153.8769** | **153.8769** | **3.4200e-003** | | **153.9624** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1028 | 11.1249 | 14.5805 | 0.0228 | | 0.5679 | 0.5679 | | 0.5225 | 0.5225 | 0.0000 | 2,207.6603 | 2,207.6603 | 0.7140 | | 2,225.5104 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1028** | **11.1249** | **14.5805** | **0.0228** | | **0.5679** | **0.5679** | | **0.5225** | **0.5225** | **0.0000** | **2,207.6603** | **2,207.6603** | **0.7140** | | **2,225.5104** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0665 | 0.0365 | 0.5115 | 1.5400e-003 | 0.1677 | 9.6000e-004 | 0.1686 | 0.0445 | 8.9000e-004 | 0.0454 | | 153.8769 | 153.8769 | 3.4200e-003 | | 153.9624 |
| **Total** | **0.0665** | **0.0365** | **0.5115** | **1.5400e-003** | **0.1677** | **9.6000e-004** | **0.1686** | **0.0445** | **8.9000e-004** | **0.0454** | | **153.8769** | **153.8769** | **3.4200e-003** | | **153.9624** |

## 3.6 Paving - 2023

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0624 | 0.0329 | 0.4721 | 1.4900e-003 | 0.1677 | 9.4000e-004 | 0.1686 | 0.0445 | 8.6000e-004 | 0.0453 | | 148.0292 | 148.0292 | 3.0700e-003 | | 148.1059 |
| **Total** | **0.0624** | **0.0329** | **0.4721** | **1.4900e-003** | **0.1677** | **9.4000e-004** | **0.1686** | **0.0445** | **8.6000e-004** | **0.0453** | | **148.0292** | **148.0292** | **3.0700e-003** | | **148.1059** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0624 | 0.0329 | 0.4721 | 1.4900e-003 | 0.1677 | 9.4000e-004 | 0.1686 | 0.0445 | 8.6000e-004 | 0.0453 | | 148.0292 | 148.0292 | 3.0700e-003 | | 148.1059 |
| **Total** | **0.0624** | **0.0329** | **0.4721** | **1.4900e-003** | **0.1677** | **9.4000e-004** | **0.1686** | **0.0445** | **8.6000e-004** | **0.0453** | | **148.0292** | **148.0292** | **3.0700e-003** | | **148.1059** |

## 3.7 Architectural Coating - 2023

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 178.8436 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **179.0352** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.9397 | 0.4954 | 7.1125 | 0.0224 | 2.5262 | 0.0142 | 2.5403 | 0.6700 | 0.0130 | 0.6830 | | 2,230.3063 | 2,230.3063 | 0.0463 | | 2,231.4628 |
| **Total** | **0.9397** | **0.4954** | **7.1125** | **0.0224** | **2.5262** | **0.0142** | **2.5403** | **0.6700** | **0.0130** | **0.6830** | | **2,230.3063** | **2,230.3063** | **0.0463** | | **2,231.4628** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 178.8436 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | 0.0000 | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **179.0352** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | **0.0000** | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.9397 | 0.4954 | 7.1125 | 0.0224 | 2.5262 | 0.0142 | 2.5403 | 0.6700 | 0.0130 | 0.6830 | | 2,230.3063 | 2,230.3063 | 0.0463 | | 2,231.4628 |
| **Total** | **0.9397** | **0.4954** | **7.1125** | **0.0224** | **2.5262** | **0.0142** | **2.5403** | **0.6700** | **0.0130** | **0.6830** | | **2,230.3063** | **2,230.3063** | **0.0463** | | **2,231.4628** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 594.3480 | 4,620.4225 | 7,189.4395 | 43.8958 | 4,224.1174 | 16.8461 | 4,240.9635 | 1,129.0321 | 15.7067 | 1,144.7388 | | 4,510,382.1963 | 4,510,382.1963 | 153.8749 | | 4,514,229.0693 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unmitigated | 594.3480 | 4,620.4225 | 7,189.4395 | 43.8958 | 4,224.1174 | 16.8461 | 4,240.9635 | 1,129.0321 | 15.7067 | 1,144.7388 | | 4,510,382.1963 | 4,510,382.1963 | 153.8749 | | 4,514,229.0693 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Mid Rise | 580,623.61 | 557,922.53 | 511647.27 | 1,939,325,411 | 1,939,325,411 |
| Total | 580,623.61 | 557,922.53 | 511,647.27 | 1,939,325,411 | 1,939,325,411 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.565475 | 0.033834 | 0.192058 | 0.100675 | 0.009211 | 0.004032 | 0.016699 | 0.069908 | 0.001423 | 0.001062 | 0.004327 | 0.000756 | 0.000539 |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| NaturalGas Unmitigated | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Mid Rise | 63715.9 | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| **Total** | | **0.6871** | **5.8719** | **2.4987** | **0.0375** | | **0.4748** | **0.4748** | | **0.4748** | **0.4748** | | **7,495.9851** | **7,495.9851** | **0.1437** | **0.1374** | **7,540.5300** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Mid Rise | 63.7159 | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| **Total** | | **0.6871** | **5.8719** | **2.4987** | **0.0375** | | **0.4748** | **0.4748** | | **0.4748** | **0.4748** | | **7,495.9851** | **7,495.9851** | **0.1437** | **0.1374** | **7,540.5300** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 449.6052 | 34.1074 | 928.6796 | 2.0463 | | 120.8017 | 120.8017 | | 120.8017 | 120.8017 | 14,724.7957 | 28,529.5242 | 43,254.3199 | 44.1345 | 0.9994 | 44,655.5077 |
| Unmitigated | 449.6052 | 34.1074 | 928.6796 | 2.0463 | | 120.8017 | 120.8017 | | 120.8017 | 120.8017 | 14,724.7957 | 28,529.5242 | 43,254.3199 | 44.1345 | 0.9994 | 44,655.5077 |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.6949 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 31.1256 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 411.9206 | 32.6164 | 799.4435 | 2.0395 | | 120.0824 | 120.0824 | | 120.0824 | 120.0824 | 14,724.7957 | 28,296.0000 | 43,020.7957 | 43.9122 | 0.9994 | 44,416.4259 |
| Landscaping | 3.8641 | 1.4910 | 129.2361 | 6.8500e-003 | | 0.7192 | 0.7192 | | 0.7192 | 0.7192 | | 233.5242 | 233.5242 | 0.2223 | | 239.0818 |
| **Total** | **449.6052** | **34.1074** | **928.6796** | **2.0463** | | **120.8017** | **120.8017** | | **120.8017** | **120.8017** | **14,724.7957** | **28,529.5242** | **43,254.3199** | **44.1345** | **0.9994** | **44,655.5077** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.6949 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 31.1256 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 411.9206 | 32.6164 | 799.4435 | 2.0395 | | 120.0824 | 120.0824 | | 120.0824 | 120.0824 | 14,724.7957 | 28,296.0000 | 43,020.7957 | 43.9122 | 0.9994 | 44,416.4259 |
| Landscaping | 3.8641 | 1.4910 | 129.2361 | 6.8500e-003 | | 0.7192 | 0.7192 | | 0.7192 | 0.7192 | | 233.5242 | 233.5242 | 0.2223 | | 239.0818 |
| **Total** | **449.6052** | **34.1074** | **928.6796** | **2.0463** | | **120.8017** | **120.8017** | | **120.8017** | **120.8017** | **14,724.7957** | **28,529.5242** | **43,254.3199** | **44.1345** | **0.9994** | **44,655.5077** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

## 11.0 Vegetation

# Proposed VMT Operations CalEEMod Output

# City of Murrieta General Plan Update - GP Update Proposed VMT

**Riverside-South Coast County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Apartments Mid Rise | 1,572.00 | Dwelling Unit | 41.37 | 1,572,000.00 | 4496 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2035 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Adjusted trip rate to meet annual VMT provided by VRPA

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblVehicleTrips | ST_TR | 6.39 | 349.00 |
| tblVehicleTrips | SU_TR | 5.86 | 320.06 |
| tblVehicleTrips | WD_TR | 6.65 | 363.21 |

# 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2019 | 0.2335 | 2.4540 | 1.4531 | 2.6300e-003 | 0.4774 | 0.1189 | 0.5963 | 0.2155 | 0.1099 | 0.3253 | 0.0000 | 236.1047 | 236.1047 | 0.0688 | 0.0000 | 237.8233 |
| 2020 | 0.9517 | 5.4941 | 7.1833 | 0.0217 | 1.7122 | 0.1883 | 1.9005 | 0.4785 | 0.1761 | 0.6546 | 0.0000 | 1,966.9150 | 1,966.9150 | 0.1646 | 0.0000 | 1,971.0289 |
| 2021 | 0.9337 | 4.7460 | 7.2068 | 0.0236 | 1.7622 | 0.1387 | 1.9009 | 0.4711 | 0.1303 | 0.6014 | 0.0000 | 2,150.2307 | 2,150.2307 | 0.1443 | 0.0000 | 2,153.8386 |
| 2022 | 0.8616 | 4.3311 | 6.7598 | 0.0230 | 1.7554 | 0.1179 | 1.8733 | 0.4693 | 0.1108 | 0.5801 | 0.0000 | 2,089.7914 | 2,089.7914 | 0.1381 | 0.0000 | 2,093.2431 |
| 2023 | 4.9769 | 0.3316 | 0.6280 | 1.3100e-003 | 0.0728 | 0.0164 | 0.0892 | 0.0193 | 0.0152 | 0.0346 | 0.0000 | 116.6998 | 116.6998 | 0.0193 | 0.0000 | 117.1833 |
| **Maximum** | **4.9769** | **5.4941** | **7.2068** | **0.0236** | **1.7622** | **0.1883** | **1.9009** | **0.4785** | **0.1761** | **0.6546** | **0.0000** | **2,150.2307** | **2,150.2307** | **0.1646** | **0.0000** | **2,153.8386** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2019 | 0.2335 | 2.4540 | 1.4531 | 2.6300e-003 | 0.4774 | 0.1189 | 0.5963 | 0.2155 | 0.1099 | 0.3253 | 0.0000 | 236.1044 | 236.1044 | 0.0688 | 0.0000 | 237.8231 |
| 2020 | 0.9517 | 5.4941 | 7.1833 | 0.0217 | 1.7122 | 0.1883 | 1.9005 | 0.4785 | 0.1761 | 0.6546 | 0.0000 | 1,966.9145 | 1,966.9145 | 0.1646 | 0.0000 | 1,971.0285 |
| 2021 | 0.9337 | 4.7459 | 7.2068 | 0.0236 | 1.7622 | 0.1387 | 1.9009 | 0.4711 | 0.1303 | 0.6014 | 0.0000 | 2,150.2303 | 2,150.2303 | 0.1443 | 0.0000 | 2,153.8383 |
| 2022 | 0.8616 | 4.3311 | 6.7598 | 0.0230 | 1.7554 | 0.1179 | 1.8733 | 0.4693 | 0.1108 | 0.5801 | 0.0000 | 2,089.7911 | 2,089.7911 | 0.1381 | 0.0000 | 2,093.2427 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2023 | 4.9769 | 0.3316 | 0.6280 | 1.3100e-003 | 0.0728 | 0.0164 | 0.0892 | 0.0193 | 0.0152 | 0.0346 | 0.0000 | 116.6997 | 116.6997 | 0.0193 | 0.0000 | 117.1832 |
| **Maximum** | **4.9769** | **5.4941** | **7.2068** | **0.0236** | **1.7622** | **0.1883** | **1.9009** | **0.4785** | **0.1761** | **0.6546** | **0.0000** | **2,150.2303** | **2,150.2303** | **0.1646** | **0.0000** | **2,153.8383** |

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

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 7-29-2019 | 10-28-2019 | 1.3867 | 1.3867 |
| 2 | 10-29-2019 | 1-28-2020 | 1.8464 | 1.8464 |
| 3 | 1-29-2020 | 4-28-2020 | 1.6395 | 1.6395 |
| 4 | 4-29-2020 | 7-28-2020 | 1.5674 | 1.5674 |
| 5 | 7-29-2020 | 10-28-2020 | 1.5839 | 1.5839 |
| 6 | 10-29-2020 | 1-28-2021 | 1.5367 | 1.5367 |
| 7 | 1-29-2021 | 4-28-2021 | 1.4022 | 1.4022 |
| 8 | 4-29-2021 | 7-28-2021 | 1.4201 | 1.4201 |
| 9 | 7-29-2021 | 10-28-2021 | 1.4347 | 1.4347 |
| 10 | 10-29-2021 | 1-28-2022 | 1.3965 | 1.3965 |
| 11 | 1-29-2022 | 4-28-2022 | 1.2874 | 1.2874 |
| 12 | 4-29-2022 | 7-28-2022 | 1.3041 | 1.3041 |
| 13 | 7-29-2022 | 10-28-2022 | 1.3174 | 1.3174 |
| 14 | 10-29-2022 | 1-28-2023 | 1.0180 | 1.0180 |
| 15 | 1-29-2023 | 4-28-2023 | 2.9207 | 2.9207 |
| 16 | 4-29-2023 | 7-28-2023 | 2.2722 | 2.2722 |
| | | Highest | 2.9207 | 2.9207 |

## 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 | 11.8043 | 0.5941 | 26.1476 | 0.0264 | | 1.5909 | 1.5909 | | 1.5909 | 1.5909 | 166.9764 | 347.3524 | 514.3288 | 0.5232 | 0.0113 | 530.7852 |
| Energy | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 3,528.8865 | 3,528.8865 | 0.1182 | 0.0423 | 3,544.4462 |
| Mobile | 88.5135 | 811.5865 | 1,120.3138 | 7.2770 | 726.8575 | 2.9487 | 729.8062 | 194.5401 | 2.7494 | 197.2894 | 0.0000 | 679,180.8759 | 679,180.8759 | 24.5946 | 0.0000 | 679,795.7406 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 146.7868 | 0.0000 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 32.4938 | 653.4978 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | **100.4432** | **813.2522** | **1,146.9174** | **7.3102** | **726.8575** | **4.6263** | **731.4838** | **194.5401** | **4.4270** | **198.9670** | **346.2570** | **683,710.6126** | **684,056.8696** | **37.2753** | **0.1380** | **685,029.8789** |

## 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 | 11.8043 | 0.5941 | 26.1476 | 0.0264 | | 1.5909 | 1.5909 | | 1.5909 | 1.5909 | 166.9764 | 347.3524 | 514.3288 | 0.5232 | 0.0113 | 530.7852 |
| Energy | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 3,528.8865 | 3,528.8865 | 0.1182 | 0.0423 | 3,544.4462 |
| Mobile | 88.5135 | 811.5865 | 1,120.3138 | 7.2770 | 726.8575 | 2.9487 | 729.8062 | 194.5401 | 2.7494 | 197.2894 | 0.0000 | 679,180.8759 | 679,180.8759 | 24.5946 | 0.0000 | 679,795.7406 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 146.7868 | 0.0000 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 32.4938 | 653.4978 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | **100.4432** | **813.2522** | **1,146.9174** | **7.3102** | **726.8575** | **4.6263** | **731.4838** | **194.5401** | **4.4270** | **198.9670** | **346.2570** | **683,710.6126** | **684,056.8696** | **37.2753** | **0.1380** | **685,029.8789** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 7/29/2019 | 10/4/2019 | 5 | 50 | |
| 2 | Site Preparation | Site Preparation | 10/5/2019 | 11/15/2019 | 5 | 30 | |
| 3 | Grading | Grading | 11/16/2019 | 2/28/2020 | 5 | 75 | |
| 4 | Building Construction | Building Construction | 2/29/2020 | 12/30/2022 | 5 | 740 | |
| 5 | Paving | Paving | 12/31/2022 | 3/17/2023 | 5 | 55 | |
| 6 | Architectural Coating | Architectural Coating | 3/18/2023 | 6/2/2023 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 3,183,300; Residential Outdoor: 1,061,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |

| | | | | | |
|---|---|---|---|---|---|
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,132.00 | 168.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 226.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2019

**Unmitigated Construction On-Site**

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

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.0878 | 0.8946 | 0.5515 | 9.7000e-004 | | 0.0449 | 0.0449 | | 0.0417 | 0.0417 | 0.0000 | 86.5658 | 86.5658 | 0.0241 | 0.0000 | 87.1679 |
| **Total** | **0.0878** | **0.8946** | **0.5515** | **9.7000e-004** | | **0.0449** | **0.0449** | | **0.0417** | **0.0417** | **0.0000** | **86.5658** | **86.5658** | **0.0241** | **0.0000** | **87.1679** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.8600e-003 | 1.3600e-003 | 0.0142 | 4.0000e-005 | 4.1200e-003 | 3.0000e-005 | 4.1500e-003 | 1.0900e-003 | 2.0000e-005 | 1.1200e-003 | 0.0000 | 3.5610 | 3.5610 | 1.0000e-004 | 0.0000 | 3.5635 |
| **Total** | **1.8600e-003** | **1.3600e-003** | **0.0142** | **4.0000e-005** | **4.1200e-003** | **3.0000e-005** | **4.1500e-003** | **1.0900e-003** | **2.0000e-005** | **1.1200e-003** | **0.0000** | **3.5610** | **3.5610** | **1.0000e-004** | **0.0000** | **3.5635** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0878 | 0.8946 | 0.5515 | 9.7000e-004 | | 0.0449 | 0.0449 | | 0.0417 | 0.0417 | 0.0000 | 86.5657 | 86.5657 | 0.0241 | 0.0000 | 87.1678 |
| **Total** | **0.0878** | **0.8946** | **0.5515** | **9.7000e-004** | | **0.0449** | **0.0449** | | **0.0417** | **0.0417** | **0.0000** | **86.5657** | **86.5657** | **0.0241** | **0.0000** | **87.1678** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.8600e-003 | 1.3600e-003 | 0.0142 | 4.0000e-005 | 4.1200e-003 | 3.0000e-005 | 4.1500e-003 | 1.0900e-003 | 2.0000e-005 | 1.1200e-003 | 0.0000 | 3.5610 | 3.5610 | 1.0000e-004 | 0.0000 | 3.5635 |
| **Total** | **1.8600e-003** | **1.3600e-003** | **0.0142** | **4.0000e-005** | **4.1200e-003** | **3.0000e-005** | **4.1500e-003** | **1.0900e-003** | **2.0000e-005** | **1.1200e-003** | **0.0000** | **3.5610** | **3.5610** | **1.0000e-004** | **0.0000** | **3.5635** |

## 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 | | | | | 0.2710 | 0.0000 | 0.2710 | 0.1490 | 0.0000 | 0.1490 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0650 | 0.6836 | 0.3310 | 5.7000e-004 | | 0.0359 | 0.0359 | | 0.0330 | 0.0330 | 0.0000 | 51.2530 | 51.2530 | 0.0162 | 0.0000 | 51.6584 |
| **Total** | **0.0650** | **0.6836** | **0.3310** | **5.7000e-004** | **0.2710** | **0.0359** | **0.3069** | **0.1490** | **0.0330** | **0.1820** | **0.0000** | **51.2530** | **51.2530** | **0.0162** | **0.0000** | **51.6584** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.3400e-003 | 9.8000e-004 | 0.0102 | 3.0000e-005 | 2.9700e-003 | 2.0000e-005 | 2.9900e-003 | 7.9000e-004 | 2.0000e-005 | 8.1000e-004 | 0.0000 | 2.5639 | 2.5639 | 7.0000e-005 | 0.0000 | 2.5657 |
| **Total** | **1.3400e-003** | **9.8000e-004** | **0.0102** | **3.0000e-005** | **2.9700e-003** | **2.0000e-005** | **2.9900e-003** | **7.9000e-004** | **2.0000e-005** | **8.1000e-004** | **0.0000** | **2.5639** | **2.5639** | **7.0000e-005** | **0.0000** | **2.5657** |

## 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 | | | | | 0.2710 | 0.0000 | 0.2710 | 0.1490 | 0.0000 | 0.1490 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0650 | 0.6836 | 0.3309 | 5.7000e-004 | | 0.0359 | 0.0359 | | 0.0330 | 0.0330 | 0.0000 | 51.2530 | 51.2530 | 0.0162 | 0.0000 | 51.6584 |
| **Total** | **0.0650** | **0.6836** | **0.3309** | **5.7000e-004** | **0.2710** | **0.0359** | **0.3069** | **0.1490** | **0.0330** | **0.1820** | **0.0000** | **51.2530** | **51.2530** | **0.0162** | **0.0000** | **51.6584** |

## Mitigated Construction Off-Site

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.3400e-003 | 9.8000e-004 | 0.0102 | 3.0000e-005 | 2.9700e-003 | 2.0000e-005 | 2.9900e-003 | 7.9000e-004 | 2.0000e-005 | 8.1000e-004 | 0.0000 | 2.5639 | 2.5639 | 7.0000e-005 | 0.0000 | 2.5657 |
| **Total** | **1.3400e-003** | **9.8000e-004** | **0.0102** | **3.0000e-005** | **2.9700e-003** | **2.0000e-005** | **2.9900e-003** | **7.9000e-004** | **2.0000e-005** | **8.1000e-004** | **0.0000** | **2.5639** | **2.5639** | **7.0000e-005** | **0.0000** | **2.5657** |

## 3.4 Grading - 2019

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1958 | 0.0000 | 0.1958 | 0.0637 | 0.0000 | 0.0637 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0758 | 0.8723 | 0.5340 | 9.9000e-004 | | 0.0381 | 0.0381 | | 0.0351 | 0.0351 | 0.0000 | 89.1221 | 89.1221 | 0.0282 | 0.0000 | 89.8270 |
| **Total** | **0.0758** | **0.8723** | **0.5340** | **9.9000e-004** | **0.1958** | **0.0381** | **0.2339** | **0.0637** | **0.0351** | **0.0988** | **0.0000** | **89.1221** | **89.1221** | **0.0282** | **0.0000** | **89.8270** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5900e-003 | 1.1600e-003 | 0.0121 | 3.0000e-005 | 3.5200e-003 | 2.0000e-005 | 3.5400e-003 | 9.3000e-004 | 2.0000e-005 | 9.5000e-004 | 0.0000 | 3.0388 | 3.0388 | 8.0000e-005 | 0.0000 | 3.0408 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **1.5900e-003** | **1.1600e-003** | **0.0121** | **3.0000e-005** | **3.5200e-003** | **2.0000e-005** | **3.5400e-003** | **9.3000e-004** | **2.0000e-005** | **9.5000e-004** | **0.0000** | **3.0388** | **3.0388** | **8.0000e-005** | **0.0000** | **3.0408** |

## 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 | | | | | 0.1958 | 0.0000 | 0.1958 | 0.0637 | 0.0000 | 0.0637 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0758 | 0.8723 | 0.5340 | 9.9000e-004 | | 0.0381 | 0.0381 | | 0.0351 | 0.0351 | 0.0000 | 89.1220 | 89.1220 | 0.0282 | 0.0000 | 89.8269 |
| **Total** | **0.0758** | **0.8723** | **0.5340** | **9.9000e-004** | **0.1958** | **0.0381** | **0.2339** | **0.0637** | **0.0351** | **0.0988** | **0.0000** | **89.1220** | **89.1220** | **0.0282** | **0.0000** | **89.8269** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5900e-003 | 1.1600e-003 | 0.0121 | 3.0000e-005 | 3.5200e-003 | 2.0000e-005 | 3.5400e-003 | 9.3000e-004 | 2.0000e-005 | 9.5000e-004 | 0.0000 | 3.0388 | 3.0388 | 8.0000e-005 | 0.0000 | 3.0408 |
| **Total** | **1.5900e-003** | **1.1600e-003** | **0.0121** | **3.0000e-005** | **3.5200e-003** | **2.0000e-005** | **3.5400e-003** | **9.3000e-004** | **2.0000e-005** | **9.5000e-004** | **0.0000** | **3.0388** | **3.0388** | **8.0000e-005** | **0.0000** | **3.0408** |

# 3.4 Grading - 2020

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.2289 | 0.0000 | 0.2289 | 0.0819 | 0.0000 | 0.0819 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0957 | 1.0793 | 0.6871 | 1.3300e-003 | | 0.0467 | 0.0467 | | 0.0430 | 0.0430 | 0.0000 | 117.1412 | 117.1412 | 0.0379 | 0.0000 | 118.0884 |
| **Total** | **0.0957** | **1.0793** | **0.6871** | **1.3300e-003** | **0.2289** | **0.0467** | **0.2756** | **0.0819** | **0.0430** | **0.1249** | **0.0000** | **117.1412** | **117.1412** | **0.0379** | **0.0000** | **118.0884** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.9800e-003 | 1.3800e-003 | 0.0148 | 4.0000e-005 | 4.7300e-003 | 3.0000e-005 | 4.7600e-003 | 1.2600e-003 | 3.0000e-005 | 1.2800e-003 | 0.0000 | 3.9543 | 3.9543 | 1.0000e-004 | 0.0000 | 3.9567 |
| **Total** | **1.9800e-003** | **1.3800e-003** | **0.0148** | **4.0000e-005** | **4.7300e-003** | **3.0000e-005** | **4.7600e-003** | **1.2600e-003** | **3.0000e-005** | **1.2800e-003** | **0.0000** | **3.9543** | **3.9543** | **1.0000e-004** | **0.0000** | **3.9567** |

## 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 | | | | | 0.2289 | 0.0000 | 0.2289 | 0.0819 | 0.0000 | 0.0819 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0957 | 1.0793 | 0.6871 | 1.3300e-003 | | 0.0467 | 0.0467 | | 0.0430 | 0.0430 | 0.0000 | 117.1411 | 117.1411 | 0.0379 | 0.0000 | 118.0882 |
| **Total** | **0.0957** | **1.0793** | **0.6871** | **1.3300e-003** | **0.2289** | **0.0467** | **0.2756** | **0.0819** | **0.0430** | **0.1249** | **0.0000** | **117.1411** | **117.1411** | **0.0379** | **0.0000** | **118.0882** |

## Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.9800e-003 | 1.3800e-003 | 0.0148 | 4.0000e-005 | 4.7300e-003 | 3.0000e-005 | 4.7600e-003 | 1.2600e-003 | 3.0000e-005 | 1.2800e-003 | 0.0000 | 3.9543 | 3.9543 | 1.0000e-004 | 0.0000 | 3.9567 |
| **Total** | **1.9800e-003** | **1.3800e-003** | **0.0148** | **4.0000e-005** | **4.7300e-003** | **3.0000e-005** | **4.7600e-003** | **1.2600e-003** | **3.0000e-005** | **1.2800e-003** | **0.0000** | **3.9543** | **3.9543** | **1.0000e-004** | **0.0000** | **3.9567** |

# 3.5 Building Construction - 2020

## Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2321 | 2.1009 | 1.8449 | 2.9500e-003 | | 0.1223 | 0.1223 | | 0.1150 | 0.1150 | 0.0000 | 253.6129 | 253.6129 | 0.0619 | 0.0000 | 255.1598 |
| **Total** | **0.2321** | **2.1009** | **1.8449** | **2.9500e-003** | | **0.1223** | **0.1223** | | **0.1150** | **0.1150** | **0.0000** | **253.6129** | **253.6129** | **0.0619** | **0.0000** | **255.1598** |

## 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 | 0.0523 | 1.9134 | 0.3743 | 4.7300e-003 | 0.1162 | 0.0108 | 0.1270 | 0.0335 | 0.0104 | 0.0439 | 0.0000 | 452.3350 | 452.3350 | 0.0362 | 0.0000 | 453.2389 |
| Worker | 0.5697 | 0.3992 | 4.2622 | 0.0126 | 1.3624 | 8.3900e-003 | 1.3708 | 0.3618 | 7.7300e-003 | 0.3695 | 0.0000 | 1,139.8716 | 1,139.8716 | 0.0285 | 0.0000 | 1,140.5852 |
| **Total** | **0.6220** | **2.3126** | **4.6365** | **0.0173** | **1.4786** | **0.0192** | **1.4978** | **0.3953** | **0.0181** | **0.4134** | **0.0000** | **1,592.2066** | **1,592.2066** | **0.0647** | **0.0000** | **1,593.8241** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2321 | 2.1009 | 1.8449 | 2.9500e-003 | | 0.1223 | 0.1223 | | 0.1150 | 0.1150 | 0.0000 | 253.6126 | 253.6126 | 0.0619 | 0.0000 | 255.1594 |
| **Total** | **0.2321** | **2.1009** | **1.8449** | **2.9500e-003** | | **0.1223** | **0.1223** | | **0.1150** | **0.1150** | **0.0000** | **253.6126** | **253.6126** | **0.0619** | **0.0000** | **255.1594** |

## 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 | 0.0523 | 1.9134 | 0.3743 | 4.7300e-003 | 0.1162 | 0.0108 | 0.1270 | 0.0335 | 0.0104 | 0.0439 | 0.0000 | 452.3350 | 452.3350 | 0.0362 | 0.0000 | 453.2389 |
| Worker | 0.5697 | 0.3992 | 4.2622 | 0.0126 | 1.3624 | 8.3900e-003 | 1.3708 | 0.3618 | 7.7300e-003 | 0.3695 | 0.0000 | 1,139.8716 | 1,139.8716 | 0.0285 | 0.0000 | 1,140.5852 |
| **Total** | **0.6220** | **2.3126** | **4.6365** | **0.0173** | **1.4786** | **0.0192** | **1.4978** | **0.3953** | **0.0181** | **0.4134** | **0.0000** | **1,592.2066** | **1,592.2066** | **0.0647** | **0.0000** | **1,593.8241** |

## 3.5 Building Construction - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2481 | 2.2749 | 2.1631 | 3.5100e-003 | | 0.1251 | 0.1251 | | 0.1176 | 0.1176 | 0.0000 | 302.2867 | 302.2867 | 0.0729 | 0.0000 | 304.1099 |
| **Total** | **0.2481** | **2.2749** | **2.1631** | **3.5100e-003** | | **0.1251** | **0.1251** | | **0.1176** | **0.1176** | **0.0000** | **302.2867** | **302.2867** | **0.0729** | **0.0000** | **304.1099** |

### 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 | 0.0523 | 2.0443 | 0.3933 | 5.5900e-003 | 0.1385 | 3.9100e-003 | 0.1424 | 0.0400 | 3.7400e-003 | 0.0437 | 0.0000 | 534.8868 | 534.8868 | 0.0408 | 0.0000 | 535.9069 |
| Worker | 0.6334 | 0.4268 | 4.6505 | 0.0145 | 1.6237 | 9.7300e-003 | 1.6334 | 0.4312 | 8.9600e-003 | 0.4401 | 0.0000 | 1,313.0572 | 1,313.0572 | 0.0306 | 0.0000 | 1,313.8218 |
| **Total** | **0.6857** | **2.4711** | **5.0438** | **0.0201** | **1.7622** | **0.0136** | **1.7758** | **0.4711** | **0.0127** | **0.4838** | **0.0000** | **1,847.9440** | **1,847.9440** | **0.0714** | **0.0000** | **1,849.7288** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2481 | 2.2749 | 2.1631 | 3.5100e-003 | | 0.1251 | 0.1251 | | 0.1176 | 0.1176 | 0.0000 | 302.2863 | 302.2863 | 0.0729 | 0.0000 | 304.1095 |
| **Total** | **0.2481** | **2.2749** | **2.1631** | **3.5100e-003** | | **0.1251** | **0.1251** | | **0.1176** | **0.1176** | **0.0000** | **302.2863** | **302.2863** | **0.0729** | **0.0000** | **304.1095** |

## 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 | 0.0523 | 2.0443 | 0.3933 | 5.5900e-003 | 0.1385 | 3.9100e-003 | 0.1424 | 0.0400 | 3.7400e-003 | 0.0437 | 0.0000 | 534.8868 | 534.8868 | 0.0408 | 0.0000 | 535.9069 |
| Worker | 0.6334 | 0.4268 | 4.6505 | 0.0145 | 1.6237 | 9.7300e-003 | 1.6334 | 0.4312 | 8.9600e-003 | 0.4401 | 0.0000 | 1,313.0572 | 1,313.0572 | 0.0306 | 0.0000 | 1,313.8218 |
| **Total** | **0.6857** | **2.4711** | **5.0438** | **0.0201** | **1.7622** | **0.0136** | **1.7758** | **0.4711** | **0.0127** | **0.4838** | **0.0000** | **1,847.9440** | **1,847.9440** | **0.0714** | **0.0000** | **1,849.7288** |

## 3.5 Building Construction - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2218 | 2.0300 | 2.1272 | 3.5000e-003 | | 0.1052 | 0.1052 | | 0.0990 | 0.0990 | 0.0000 | 301.2428 | 301.2428 | 0.0722 | 0.0000 | 303.0471 |
| **Total** | **0.2218** | **2.0300** | **2.1272** | **3.5000e-003** | | **0.1052** | **0.1052** | | **0.0990** | **0.0990** | **0.0000** | **301.2428** | **301.2428** | **0.0722** | **0.0000** | **303.0471** |

### 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 | 0.0486 | 1.9185 | 0.3649 | 5.5200e-003 | 0.1379 | 3.2800e-003 | 0.1412 | 0.0398 | 3.1300e-003 | 0.0429 | 0.0000 | 528.2540 | 528.2540 | 0.0385 | 0.0000 | 529.2168 |
| Worker | 0.5912 | 0.3825 | 4.2676 | 0.0139 | 1.6175 | 9.4400e-003 | 1.6269 | 0.4295 | 8.6900e-003 | 0.4382 | 0.0000 | 1,260.2946 | 1,260.2946 | 0.0274 | 0.0000 | 1,260.9792 |
| **Total** | **0.6398** | **2.3011** | **4.6326** | **0.0195** | **1.7554** | **0.0127** | **1.7681** | **0.4693** | **0.0118** | **0.4811** | **0.0000** | **1,788.5486** | **1,788.5486** | **0.0659** | **0.0000** | **1,790.1960** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2218 | 2.0300 | 2.1272 | 3.5000e-003 | | 0.1052 | 0.1052 | | 0.0990 | 0.0990 | 0.0000 | 301.2425 | 301.2425 | 0.0722 | 0.0000 | 303.0467 |
| **Total** | **0.2218** | **2.0300** | **2.1272** | **3.5000e-003** | | **0.1052** | **0.1052** | | **0.0990** | **0.0990** | **0.0000** | **301.2425** | **301.2425** | **0.0722** | **0.0000** | **303.0467** |

**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 | 0.0486 | 1.9185 | 0.3649 | 5.5200e-003 | 0.1379 | 3.2800e-003 | 0.1412 | 0.0398 | 3.1300e-003 | 0.0429 | 0.0000 | 528.2540 | 528.2540 | 0.0385 | 0.0000 | 529.2168 |
| Worker | 0.5912 | 0.3825 | 4.2676 | 0.0139 | 1.6175 | 9.4400e-003 | 1.6269 | 0.4295 | 8.6900e-003 | 0.4382 | 0.0000 | 1,260.2946 | 1,260.2946 | 0.0274 | 0.0000 | 1,260.9792 |
| **Total** | **0.6398** | **2.3011** | **4.6326** | **0.0195** | **1.7554** | **0.0127** | **1.7681** | **0.4693** | **0.0118** | **0.4811** | **0.0000** | **1,788.5486** | **1,788.5486** | **0.0659** | **0.0000** | **1,790.1960** |

## 3.6 Paving - 2022

**Unmitigated Construction On-Site**

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 3.6 Paving - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0284 | 0.2803 | 0.4011 | 6.3000e-004 | | 0.0140 | 0.0140 | | 0.0129 | 0.0129 | 0.0000 | 55.0739 | 55.0739 | 0.0178 | 0.0000 | 55.5192 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0284** | **0.2803** | **0.4011** | **6.3000e-004** | | **0.0140** | **0.0140** | | **0.0129** | **0.0129** | **0.0000** | **55.0739** | **55.0739** | **0.0178** | **0.0000** | **55.5192** |

**Unmitigated Construction Off-Site**

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

| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5600e-003 | 9.7000e-004 | 0.0110 | 4.0000e-005 | 4.5300e-003 | 3.0000e-005 | 4.5600e-003 | 1.2000e-003 | 2.0000e-005 | 1.2300e-003 | 0.0000 | 3.3986 | 3.3986 | 7.0000e-005 | 0.0000 | 3.4003 |
| **Total** | **1.5600e-003** | **9.7000e-004** | **0.0110** | **4.0000e-005** | **4.5300e-003** | **3.0000e-005** | **4.5600e-003** | **1.2000e-003** | **2.0000e-005** | **1.2300e-003** | **0.0000** | **3.3986** | **3.3986** | **7.0000e-005** | **0.0000** | **3.4003** |

## Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0284 | 0.2803 | 0.4011 | 6.3000e-004 | | 0.0140 | 0.0140 | | 0.0129 | 0.0129 | 0.0000 | 55.0738 | 55.0738 | 0.0178 | 0.0000 | 55.5191 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0284** | **0.2803** | **0.4011** | **6.3000e-004** | | **0.0140** | **0.0140** | | **0.0129** | **0.0129** | **0.0000** | **55.0738** | **55.0738** | **0.0178** | **0.0000** | **55.5191** |

## Mitigated Construction Off-Site

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

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 1.5600e-003 | 9.7000e-004 | 0.0110 | 4.0000e-005 | 4.5300e-003 | 3.0000e-005 | 4.5600e-003 | 1.2000e-003 | 2.0000e-005 | 1.2300e-003 | 0.0000 | 3.3986 | 3.3986 | 7.0000e-005 | 0.0000 | 3.4003 |
| **Total** | **1.5600e-003** | **9.7000e-004** | **0.0110** | **4.0000e-005** | **4.5300e-003** | **3.0000e-005** | **4.5600e-003** | **1.2000e-003** | **2.0000e-005** | **1.2300e-003** | **0.0000** | **3.3986** | **3.3986** | **7.0000e-005** | **0.0000** | **3.4003** |

## 3.7 Architectural Coating - 2023

### 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 | 4.9182 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.2700e-003 | 0.0358 | 0.0498 | 8.0000e-005 | | 1.9500e-003 | 1.9500e-003 | | 1.9500e-003 | 1.9500e-003 | 0.0000 | 7.0215 | 7.0215 | 4.2000e-004 | 0.0000 | 7.0320 |
| **Total** | **4.9235** | **0.0358** | **0.0498** | **8.0000e-005** | | **1.9500e-003** | **1.9500e-003** | | **1.9500e-003** | **1.9500e-003** | **0.0000** | **7.0215** | **7.0215** | **4.2000e-004** | **0.0000** | **7.0320** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0235 | 0.0146 | 0.1661 | 5.7000e-004 | 0.0683 | 3.9000e-004 | 0.0687 | 0.0181 | 3.6000e-004 | 0.0185 | 0.0000 | 51.2059 | 51.2059 | 1.0400e-003 | 0.0000 | 51.2318 |
| **Total** | **0.0235** | **0.0146** | **0.1661** | **5.7000e-004** | **0.0683** | **3.9000e-004** | **0.0687** | **0.0181** | **3.6000e-004** | **0.0185** | **0.0000** | **51.2059** | **51.2059** | **1.0400e-003** | **0.0000** | **51.2318** |

**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 | 4.9182 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.2700e-003 | 0.0358 | 0.0498 | 8.0000e-005 | | 1.9500e-003 | 1.9500e-003 | | 1.9500e-003 | 1.9500e-003 | 0.0000 | 7.0214 | 7.0214 | 4.2000e-004 | 0.0000 | 7.0319 |
| **Total** | **4.9235** | **0.0358** | **0.0498** | **8.0000e-005** | | **1.9500e-003** | **1.9500e-003** | | **1.9500e-003** | **1.9500e-003** | **0.0000** | **7.0214** | **7.0214** | **4.2000e-004** | **0.0000** | **7.0319** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0235 | 0.0146 | 0.1661 | 5.7000e-004 | 0.0683 | 3.9000e-004 | 0.0687 | 0.0181 | 3.6000e-004 | 0.0185 | 0.0000 | 51.2059 | 51.2059 | 1.0400e-003 | 0.0000 | 51.2318 |
| **Total** | **0.0235** | **0.0146** | **0.1661** | **5.7000e-004** | **0.0683** | **3.9000e-004** | **0.0687** | **0.0181** | **3.6000e-004** | **0.0185** | **0.0000** | **51.2059** | **51.2059** | **1.0400e-003** | **0.0000** | **51.2318** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 88.5135 | 811.5865 | 1,120.3138 | 7.2770 | 726.8575 | 2.9487 | 729.8062 | 194.5401 | 2.7494 | 197.2894 | 0.0000 | 679,180.8759 | 679,180.8759 | 24.5946 | 0.0000 | 679,795.7406 |
| Unmitigated | 88.5135 | 811.5865 | 1,120.3138 | 7.2770 | 726.8575 | 2.9487 | 729.8062 | 194.5401 | 2.7494 | 197.2894 | 0.0000 | 679,180.8759 | 679,180.8759 | 24.5946 | 0.0000 | 679,795.7406 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Mid Rise | 570,966.12 | 548,628.00 | 503134.32 | 1,907,060,214 | 1,907,060,214 |
| Total | 570,966.12 | 548,628.00 | 503,134.32 | 1,907,060,214 | 1,907,060,214 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.565475 | 0.033834 | 0.192058 | 0.100675 | 0.009211 | 0.004032 | 0.016699 | 0.069908 | 0.001423 | 0.001062 | 0.004327 | 0.000756 | 0.000539 |

# 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 | 2,287.8421 | 2,287.8421 | 0.0945 | 0.0195 | 2,296.0269 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2,287.8421 | 2,287.8421 | 0.0945 | 0.0195 | 2,296.0269 |
| NaturalGas Mitigated | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 1,241.0444 | 1,241.0444 | 0.0238 | 0.0228 | 1,248.4193 |
| NaturalGas Unmitigated | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 1,241.0444 | 1,241.0444 | 0.0238 | 0.0228 | 1,248.4193 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Mid Rise | 2.32563e+007 | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 1,241.0444 | 1,241.0444 | 0.0238 | 0.0228 | 1,248.4193 |
| **Total** | | **0.1254** | **1.0716** | **0.4560** | **6.8400e-003** | | **0.0866** | **0.0866** | | **0.0866** | **0.0866** | **0.0000** | **1,241.0444** | **1,241.0444** | **0.0238** | **0.0228** | **1,248.4193** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Mid Rise | 2.32563e+007 | 0.1254 | 1.0716 | 0.4560 | 6.8400e-003 | | 0.0866 | 0.0866 | | 0.0866 | 0.0866 | 0.0000 | 1,241.0444 | 1,241.0444 | 0.0238 | 0.0228 | 1,248.4193 |
| **Total** | | **0.1254** | **1.0716** | **0.4560** | **6.8400e-003** | | **0.0866** | **0.0866** | | **0.0866** | **0.0866** | **0.0000** | **1,241.0444** | **1,241.0444** | **0.0238** | **0.0228** | **1,248.4193** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Mid Rise | 7.18044e+006 | 2,287.8421 | 0.0945 | 0.0195 | 2,296.0269 |
| **Total** | | **2,287.8421** | **0.0945** | **0.0195** | **2,296.0269** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Mid Rise | 7.18044e+006 | 2,287.8421 | 0.0945 | 0.0195 | 2,296.0269 |
| **Total** | | **2,287.8421** | **0.0945** | **0.0195** | **2,296.0269** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 11.8043 | 0.5941 | 26.1476 | 0.0264 | | 1.5909 | 1.5909 | | 1.5909 | 1.5909 | 166.9764 | 347.3524 | 514.3288 | 0.5232 | 0.0113 | 530.7852 |
| Unmitigated | 11.8043 | 0.5941 | 26.1476 | 0.0264 | | 1.5909 | 1.5909 | | 1.5909 | 1.5909 | 166.9764 | 347.3524 | 514.3288 | 0.5232 | 0.0113 | 530.7852 |

## 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 | 0.4918 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 5.6804 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 5.1490 | 0.4077 | 9.9930 | 0.0255 | | 1.5010 | 1.5010 | | 1.5010 | 1.5010 | 166.9764 | 320.8712 | 487.8476 | 0.4980 | 0.0113 | 503.6738 |
| Landscaping | 0.4830 | 0.1864 | 16.1545 | 8.6000e-004 | | 0.0899 | 0.0899 | | 0.0899 | 0.0899 | 0.0000 | 26.4812 | 26.4812 | 0.0252 | 0.0000 | 27.1114 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | **11.8043** | **0.5941** | **26.1476** | **0.0264** | | **1.5909** | **1.5909** | | **1.5909** | **1.5909** | **166.9764** | **347.3524** | **514.3288** | **0.5232** | **0.0113** | **530.7852** |

**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 | 0.4918 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 5.6804 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 5.1490 | 0.4077 | 9.9930 | 0.0255 | | 1.5010 | 1.5010 | | 1.5010 | 1.5010 | 166.9764 | 320.8712 | 487.8476 | 0.4980 | 0.0113 | 503.6738 |
| Landscaping | 0.4830 | 0.1864 | 16.1545 | 8.6000e-004 | | 0.0899 | 0.0899 | | 0.0899 | 0.0899 | 0.0000 | 26.4812 | 26.4812 | 0.0252 | 0.0000 | 27.1114 |
| **Total** | **11.8043** | **0.5941** | **26.1476** | **0.0264** | | **1.5909** | **1.5909** | | **1.5909** | **1.5909** | **166.9764** | **347.3524** | **514.3288** | **0.5232** | **0.0113** | **530.7852** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| Unmitigated | 685.9916 | 3.3644 | 0.0844 | 795.2487 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Mid Rise | 102.422 / 64.5705 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | | **685.9916** | **3.3644** | **0.0844** | **795.2487** |

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Mid Rise | 102.422 / 64.5705 | 685.9916 | 3.3644 | 0.0844 | 795.2487 |
| **Total** | | **685.9916** | **3.3644** | **0.0844** | **795.2487** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| Unmitigated | 146.7868 | 8.6749 | 0.0000 | 363.6582 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Mid Rise | 723.12 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| **Total** | | **146.7868** | **8.6749** | **0.0000** | **363.6582** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|

| Land Use | tons | MT/yr | | | |
|---|---|---|---|---|---|
| Apartments Mid Rise | 723.12 | 146.7868 | 8.6749 | 0.0000 | 363.6582 |
| **Total** | | **146.7868** | **8.6749** | **0.0000** | **363.6582** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

## 11.0 Vegetation

# City of Murrieta General Plan Update - GP Update Proposed VMT

**Riverside-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Apartments Mid Rise | 1,572.00 | Dwelling Unit | 41.37 | 1,572,000.00 | 4496 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2035 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 702.44 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Adjusted trip rate to meet annual VMT provided by VRPA

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblVehicleTrips | ST_TR | 6.39 | 349.00 |
| tblVehicleTrips | SU_TR | 5.86 | 320.06 |
| tblVehicleTrips | WD_TR | 6.65 | 363.21 |

# 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 4.8490 | 54.5878 | 34.2653 | 0.0643 | 18.2675 | 2.3916 | 20.6591 | 9.9840 | 2.2003 | 12.1843 | 0.0000 | 6,367.5239 | 6,367.5239 | 1.9490 | 0.0000 | 6,416.2491 |
| 2020 | 8.3486 | 50.2577 | 65.6548 | 0.1960 | 13.7289 | 2.1753 | 15.0209 | 3.6654 | 2.0012 | 5.6570 | 0.0000 | 19,649.6807 | 19,649.6807 | 1.9481 | 0.0000 | 19,681.9185 |
| 2021 | 7.6599 | 36.0361 | 61.2003 | 0.1914 | 13.7289 | 1.0628 | 14.7916 | 3.6654 | 0.9982 | 4.6636 | 0.0000 | 19,196.9614 | 19,196.9614 | 1.2318 | 0.0000 | 19,227.7569 |
| 2022 | 7.0919 | 33.0348 | 57.5457 | 0.1866 | 13.7288 | 0.9065 | 14.6353 | 3.6654 | 0.8518 | 4.5171 | 0.0000 | 18,718.4537 | 18,718.4537 | 1.1811 | 0.0000 | 18,747.9819 |
| 2023 | 179.9749 | 10.2245 | 15.0563 | 0.0254 | 2.5262 | 0.5111 | 2.6111 | 0.6700 | 0.4703 | 0.7538 | 0.0000 | 2,511.7544 | 2,511.7544 | 0.7171 | 0.0000 | 2,513.3319 |
| **Maximum** | **179.9749** | **54.5878** | **65.6548** | **0.1960** | **18.2675** | **2.3916** | **20.6591** | **9.9840** | **2.2003** | **12.1843** | **0.0000** | **19,649.6807** | **19,649.6807** | **1.9490** | **0.0000** | **19,681.9185** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 4.8490 | 54.5878 | 34.2653 | 0.0643 | 18.2675 | 2.3916 | 20.6591 | 9.9840 | 2.2003 | 12.1843 | 0.0000 | 6,367.5239 | 6,367.5239 | 1.9490 | 0.0000 | 6,416.2491 |
| 2020 | 8.3486 | 50.2577 | 65.6548 | 0.1960 | 13.7289 | 2.1753 | 15.0209 | 3.6654 | 2.0012 | 5.6570 | 0.0000 | 19,649.6807 | 19,649.6807 | 1.9481 | 0.0000 | 19,681.9185 |
| 2021 | 7.6599 | 36.0361 | 61.2003 | 0.1914 | 13.7289 | 1.0628 | 14.7916 | 3.6654 | 0.9982 | 4.6636 | 0.0000 | 19,196.9614 | 19,196.9614 | 1.2318 | 0.0000 | 19,227.7569 |
| 2022 | 7.0919 | 33.0348 | 57.5457 | 0.1866 | 13.7288 | 0.9065 | 14.6353 | 3.6654 | 0.8518 | 4.5171 | 0.0000 | 18,718.4537 | 18,718.4537 | 1.1811 | 0.0000 | 18,747.9819 |
| 2023 | 179.9749 | 10.2245 | 15.0563 | 0.0254 | 2.5262 | 0.5111 | 2.6111 | 0.6700 | 0.4703 | 0.7538 | 0.0000 | 2,511.7544 | 2,511.7544 | 0.7171 | 0.0000 | 2,513.3319 |
| **Maximum** | **179.9749** | **54.5878** | **65.6548** | **0.1960** | **18.2675** | **2.3916** | **20.6591** | **9.9840** | **2.2003** | **12.1843** | **0.0000** | **19,649.6807** | **19,649.6807** | **1.9490** | **0.0000** | **19,681.9185** |

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

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 449.6052 | 34.1074 | 928.6796 | 2.0463 | | 120.8017 | 120.8017 | | 120.8017 | 120.8017 | 14,724.7957 | 28,529.5242 | 43,254.3199 | 44.1345 | 0.9994 | 44,655.5077 |
| Energy | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| Mobile | 584.4622 | 4,543.5712 | 7,069.8579 | 43.1657 | 4,153.8578 | 16.5659 | 4,170.4237 | 1,110.2529 | 15.4455 | 1,125.6984 | | 4,435,361.2053 | 4,435,361.2053 | 151.3155 | | 4,439,144.0934 |
| **Total** | **1,034.7545** | **4,583.5504** | **8,001.0362** | **45.2495** | **4,153.8578** | **137.8423** | **4,291.7001** | **1,110.2529** | **136.7219** | **1,246.9748** | **14,724.7957** | **4,471,386.7146** | **4,486,111.5104** | **195.5937** | **1.1368** | **4,491,340.1311** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 449.6052 | 34.1074 | 928.6796 | 2.0463 | | 120.8017 | 120.8017 | | 120.8017 | 120.8017 | 14,724.7957 | 28,529.5242 | 43,254.3199 | 44.1345 | 0.9994 | 44,655.5077 |
| Energy | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| Mobile | 584.4622 | 4,543.5712 | 7,069.8579 | 43.1657 | 4,153.8578 | 16.5659 | 4,170.4237 | 1,110.2529 | 15.4455 | 1,125.6984 | | 4,435,361.2053 | 4,435,361.2053 | 151.3155 | | 4,439,144.0934 |
| **Total** | **1,034.7545** | **4,583.5504** | **8,001.0362** | **45.2495** | **4,153.8578** | **137.8423** | **4,291.7001** | **1,110.2529** | **136.7219** | **1,246.9748** | **14,724.7957** | **4,471,386.7146** | **4,486,111.5104** | **195.5937** | **1.1368** | **4,491,340.1311** |

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

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 7/29/2019 | 10/4/2019 | 5 | 50 | |
| 2 | Site Preparation | Site Preparation | 10/5/2019 | 11/15/2019 | 5 | 30 | |
| 3 | Grading | Grading | 11/16/2019 | 2/28/2020 | 5 | 75 | |
| 4 | Building Construction | Building Construction | 2/29/2020 | 12/30/2022 | 5 | 740 | |
| 5 | Paving | Paving | 12/31/2022 | 3/17/2023 | 5 | 55 | |
| 6 | Architectural Coating | Architectural Coating | 3/18/2023 | 6/2/2023 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 3,183,300; Residential Outdoor: 1,061,100; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |

| | | | | | |
|---|---|---|---|---|---|
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,132.00 | 168.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 226.00 | 0.00 | 0.00 | 14.70 | 6.90 | 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.5134 | 35.7830 | 22.0600 | 0.0388 | | 1.7949 | 1.7949 | | 1.6697 | 1.6697 | | 3,816.8994 | 3,816.8994 | 1.0618 | | 3,843.4451 |
| **Total** | **3.5134** | **35.7830** | **22.0600** | **0.0388** | | **1.7949** | **1.7949** | | **1.6697** | **1.6697** | | **3,816.8994** | **3,816.8994** | **1.0618** | | **3,843.4451** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0826 | 0.0507 | 0.6664 | 1.7100e-003 | 0.1677 | 1.0300e-003 | 0.1687 | 0.0445 | 9.5000e-004 | 0.0454 | | 170.6284 | 170.6284 | 4.7800e-003 | | 170.7478 |
| **Total** | **0.0826** | **0.0507** | **0.6664** | **1.7100e-003** | **0.1677** | **1.0300e-003** | **0.1687** | **0.0445** | **9.5000e-004** | **0.0454** | | **170.6284** | **170.6284** | **4.7800e-003** | | **170.7478** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.5134 | 35.7830 | 22.0600 | 0.0388 | | 1.7949 | 1.7949 | | 1.6697 | 1.6697 | 0.0000 | 3,816.8994 | 3,816.8994 | 1.0618 | | 3,843.4451 |
| **Total** | **3.5134** | **35.7830** | **22.0600** | **0.0388** | | **1.7949** | **1.7949** | | **1.6697** | **1.6697** | **0.0000** | **3,816.8994** | **3,816.8994** | **1.0618** | | **3,843.4451** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0826 | 0.0507 | 0.6664 | 1.7100e-003 | 0.1677 | 1.0300e-003 | 0.1687 | 0.0445 | 9.5000e-004 | 0.0454 | | 170.6284 | 170.6284 | 4.7800e-003 | | 170.7478 |
| **Total** | **0.0826** | **0.0507** | **0.6664** | **1.7100e-003** | **0.1677** | **1.0300e-003** | **0.1687** | **0.0445** | **9.5000e-004** | **0.0454** | | **170.6284** | **170.6284** | **4.7800e-003** | | **170.7478** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.3350 | 45.5727 | 22.0630 | 0.0380 | | 2.3904 | 2.3904 | | 2.1991 | 2.1991 | | 3,766.4529 | 3,766.4529 | 1.1917 | | 3,796.2445 |
| **Total** | **4.3350** | **45.5727** | **22.0630** | **0.0380** | **18.0663** | **2.3904** | **20.4566** | **9.9307** | **2.1991** | **12.1298** | | **3,766.4529** | **3,766.4529** | **1.1917** | | **3,796.2445** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0991 | 0.0608 | 0.7997 | 2.0600e-003 | 0.2012 | 1.2400e-003 | 0.2024 | 0.0534 | 1.1400e-003 | 0.0545 | | 204.7540 | 204.7540 | 5.7300e-003 | | 204.8973 |
| **Total** | **0.0991** | **0.0608** | **0.7997** | **2.0600e-003** | **0.2012** | **1.2400e-003** | **0.2024** | **0.0534** | **1.1400e-003** | **0.0545** | | **204.7540** | **204.7540** | **5.7300e-003** | | **204.8973** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.3350 | 45.5727 | 22.0630 | 0.0380 | | 2.3904 | 2.3904 | | 2.1991 | 2.1991 | 0.0000 | 3,766.4529 | 3,766.4529 | 1.1917 | | 3,796.2445 |
| **Total** | **4.3350** | **45.5727** | **22.0630** | **0.0380** | **18.0663** | **2.3904** | **20.4566** | **9.9307** | **2.1991** | **12.1298** | **0.0000** | **3,766.4529** | **3,766.4529** | **1.1917** | | **3,796.2445** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0991 | 0.0608 | 0.7997 | 2.0600e-003 | 0.2012 | 1.2400e-003 | 0.2024 | 0.0534 | 1.1400e-003 | 0.0545 | | 204.7540 | 204.7540 | 5.7300e-003 | | 204.8973 |
| **Total** | **0.0991** | **0.0608** | **0.7997** | **2.0600e-003** | **0.2012** | **1.2400e-003** | **0.2024** | **0.0534** | **1.1400e-003** | **0.0545** | | **204.7540** | **204.7540** | **5.7300e-003** | | **204.8973** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.7389 | 54.5202 | 33.3768 | 0.0620 | | 2.3827 | 2.3827 | | 2.1920 | 2.1920 | | 6,140.0195 | 6,140.0195 | 1.9426 | | 6,188.5854 |
| **Total** | **4.7389** | **54.5202** | **33.3768** | **0.0620** | **8.6733** | **2.3827** | **11.0560** | **3.5965** | **2.1920** | **5.7885** | | **6,140.0195** | **6,140.0195** | **1.9426** | | **6,188.5854** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1101 | 0.0676 | 0.8885 | 2.2900e-003 | 0.2236 | 1.3800e-003 | 0.2249 | 0.0593 | 1.2700e-003 | 0.0606 | | 227.5045 | 227.5045 | 6.3700e-003 | | 227.6637 |
| **Total** | **0.1101** | **0.0676** | **0.8885** | **2.2900e-003** | **0.2236** | **1.3800e-003** | **0.2249** | **0.0593** | **1.2700e-003** | **0.0606** | | **227.5045** | **227.5045** | **6.3700e-003** | | **227.6637** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.7389 | 54.5202 | 33.3768 | 0.0620 | | 2.3827 | 2.3827 | | 2.1920 | 2.1920 | 0.0000 | 6,140.0195 | 6,140.0195 | 1.9426 | | 6,188.5854 |
| **Total** | **4.7389** | **54.5202** | **33.3768** | **0.0620** | **8.6733** | **2.3827** | **11.0560** | **3.5965** | **2.1920** | **5.7885** | **0.0000** | **6,140.0195** | **6,140.0195** | **1.9426** | | **6,188.5854** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1101 | 0.0676 | 0.8885 | 2.2900e-003 | 0.2236 | 1.3800e-003 | 0.2249 | 0.0593 | 1.2700e-003 | 0.0606 | | 227.5045 | 227.5045 | 6.3700e-003 | | 227.6637 |
| **Total** | **0.1101** | **0.0676** | **0.8885** | **2.2900e-003** | **0.2236** | **1.3800e-003** | **0.2249** | **0.0593** | **1.2700e-003** | **0.0606** | | **227.5045** | **227.5045** | **6.3700e-003** | | **227.6637** |

## 3.4 Grading - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4501 | 50.1975 | 31.9583 | 0.0620 | | 2.1739 | 2.1739 | | 2.0000 | 2.0000 | | 6,005.8653 | 6,005.8653 | 1.9424 | | 6,054.4257 |
| **Total** | **4.4501** | **50.1975** | **31.9583** | **0.0620** | **8.6733** | **2.1739** | **10.8472** | **3.5965** | **2.0000** | **5.5965** | | **6,005.8653** | **6,005.8653** | **1.9424** | | **6,054.4257** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1018 | 0.0602 | 0.8064 | 2.2100e-003 | 0.2236 | 1.3500e-003 | 0.2249 | 0.0593 | 1.2500e-003 | 0.0605 | | 220.3189 | 220.3189 | 5.6500e-003 | | 220.4601 |
| **Total** | **0.1018** | **0.0602** | **0.8064** | **2.2100e-003** | **0.2236** | **1.3500e-003** | **0.2249** | **0.0593** | **1.2500e-003** | **0.0605** | | **220.3189** | **220.3189** | **5.6500e-003** | | **220.4601** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.4501 | 50.1975 | 31.9583 | 0.0620 | | 2.1739 | 2.1739 | | 2.0000 | 2.0000 | 0.0000 | 6,005.8653 | 6,005.8653 | 1.9424 | | 6,054.4257 |
| **Total** | **4.4501** | **50.1975** | **31.9583** | **0.0620** | **8.6733** | **2.1739** | **10.8472** | **3.5965** | **2.0000** | **5.5965** | **0.0000** | **6,005.8653** | **6,005.8653** | **1.9424** | | **6,054.4257** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.1018 | 0.0602 | 0.8064 | 2.2100e-003 | 0.2236 | 1.3500e-003 | 0.2249 | 0.0593 | 1.2500e-003 | 0.0605 | | 220.3189 | 220.3189 | 5.6500e-003 | | 220.4601 |
| **Total** | **0.1018** | **0.0602** | **0.8064** | **2.2100e-003** | **0.2236** | **1.3500e-003** | **0.2249** | **0.0593** | **1.2500e-003** | **0.0605** | | **220.3189** | **220.3189** | **5.6500e-003** | | **220.4601** |

## 3.5 Building Construction - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.1198 | 19.1860 | 16.8485 | 0.0269 | | 1.1171 | 1.1171 | | 1.0503 | 1.0503 | | 2,553.0631 | 2,553.0631 | 0.6229 | | 2,568.6345 |
| **Total** | **2.1198** | **19.1860** | **16.8485** | **0.0269** | | **1.1171** | **1.1171** | | **1.0503** | **1.0503** | | **2,553.0631** | **2,553.0631** | **0.6229** | | **2,568.6345** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.4683 | 17.2858 | 3.1623 | 0.0439 | 1.0758 | 0.0983 | 1.1741 | 0.3098 | 0.0941 | 0.4038 | | 4,626.5675 | 4,626.5675 | 0.3470 | | 4,635.2429 |
| Worker | 5.7605 | 3.4068 | 45.6439 | 0.1252 | 12.6531 | 0.0766 | 12.7297 | 3.3557 | 0.0706 | 3.4262 | | 12,470.0502 | 12,470.0502 | 0.3196 | | 12,478.0411 |
| **Total** | **6.2288** | **20.6926** | **48.8063** | **0.1691** | **13.7289** | **0.1749** | **13.9038** | **3.6654** | **0.1646** | **3.8300** | | **17,096.6177** | **17,096.6177** | **0.6667** | | **17,113.2840** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.1198 | 19.1860 | 16.8485 | 0.0269 | | 1.1171 | 1.1171 | | 1.0503 | 1.0503 | 0.0000 | 2,553.0631 | 2,553.0631 | 0.6229 | | 2,568.6345 |
| **Total** | **2.1198** | **19.1860** | **16.8485** | **0.0269** | | **1.1171** | **1.1171** | | **1.0503** | **1.0503** | **0.0000** | **2,553.0631** | **2,553.0631** | **0.6229** | | **2,568.6345** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.4683 | 17.2858 | 3.1623 | 0.0439 | 1.0758 | 0.0983 | 1.1741 | 0.3098 | 0.0941 | 0.4038 | | 4,626.5675 | 4,626.5675 | 0.3470 | | 4,635.2429 |
| Worker | 5.7605 | 3.4068 | 45.6439 | 0.1252 | 12.6531 | 0.0766 | 12.7297 | 3.3557 | 0.0706 | 3.4262 | | 12,470.0502 | 12,470.0502 | 0.3196 | | 12,478.0411 |
| **Total** | **6.2288** | **20.6926** | **48.8063** | **0.1691** | **13.7289** | **0.1749** | **13.9038** | **3.6654** | **0.1646** | **3.8300** | | **17,096.6177** | **17,096.6177** | **0.6667** | | **17,113.2840** |

## 3.5 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.9009 | 17.4321 | 16.5752 | 0.0269 | | 0.9586 | 0.9586 | | 0.9013 | 0.9013 | | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **1.9009** | **17.4321** | **16.5752** | **0.0269** | | **0.9586** | **0.9586** | | **0.9013** | **0.9013** | | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3922 | 15.5466 | 2.7738 | 0.0435 | 1.0758 | 0.0296 | 1.1053 | 0.3097 | 0.0283 | 0.3380 | | 4,590.6172 | 4,590.6172 | 0.3284 | | 4,598.8275 |
| Worker | 5.3668 | 3.0574 | 41.8514 | 0.1210 | 12.6531 | 0.0746 | 12.7277 | 3.3557 | 0.0687 | 3.4243 | | 12,052.9803 | 12,052.9803 | 0.2874 | | 12,060.1652 |
| **Total** | **5.7590** | **18.6040** | **44.6251** | **0.1645** | **13.7289** | **0.1041** | **13.8330** | **3.6654** | **0.0969** | **3.7623** | | **16,643.5975** | **16,643.5975** | **0.6158** | | **16,658.9927** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.9009 | 17.4321 | 16.5752 | 0.0269 | | 0.9586 | 0.9586 | | 0.9013 | 0.9013 | 0.0000 | 2,553.3639 | 2,553.3639 | 0.6160 | | 2,568.7643 |
| **Total** | **1.9009** | **17.4321** | **16.5752** | **0.0269** | | **0.9586** | **0.9586** | | **0.9013** | **0.9013** | **0.0000** | **2,553.3639** | **2,553.3639** | **0.6160** | | **2,568.7643** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3922 | 15.5466 | 2.7738 | 0.0435 | 1.0758 | 0.0296 | 1.1053 | 0.3097 | 0.0283 | 0.3380 | | 4,590.6172 | 4,590.6172 | 0.3284 | | 4,598.8275 |
| Worker | 5.3668 | 3.0574 | 41.8514 | 0.1210 | 12.6531 | 0.0746 | 12.7277 | 3.3557 | 0.0687 | 3.4243 | | 12,052.9803 | 12,052.9803 | 0.2874 | | 12,060.1652 |
| **Total** | **5.7590** | **18.6040** | **44.6251** | **0.1645** | **13.7289** | **0.1041** | **13.8330** | **3.6654** | **0.0969** | **3.7623** | | **16,643.5975** | **16,643.5975** | **0.6158** | | **16,658.9927** |

## 3.5 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3657 | 14.6677 | 2.5799 | 0.0431 | 1.0757 | 0.0249 | 1.1006 | 0.3097 | 0.0238 | 0.3335 | | 4,551.5430 | 4,551.5430 | 0.3110 | | 4,559.3188 |
| Worker | 5.0199 | 2.7515 | 38.6023 | 0.1165 | 12.6531 | 0.0726 | 12.7257 | 3.3557 | 0.0668 | 3.4225 | | 11,612.5772 | 11,612.5772 | 0.2582 | | 11,619.0309 |
| **Total** | **5.3856** | **17.4192** | **41.1823** | **0.1597** | **13.7288** | **0.0975** | **13.8263** | **3.6654** | **0.0906** | **3.7560** | | **16,164.1202** | **16,164.1202** | **0.5692** | | **16,178.3497** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| Vendor | 0.3657 | 14.6677 | 2.5799 | 0.0431 | 1.0757 | 0.0249 | 1.1006 | 0.3097 | 0.0238 | 0.3335 | | 4,551.5430 | 4,551.5430 | 0.3110 | | 4,559.3188 |
| Worker | 5.0199 | 2.7515 | 38.6023 | 0.1165 | 12.6531 | 0.0726 | 12.7257 | 3.3557 | 0.0668 | 3.4225 | | 11,612.5772 | 11,612.5772 | 0.2582 | | 11,619.0309 |
| **Total** | **5.3856** | **17.4192** | **41.1823** | **0.1597** | **13.7288** | **0.0975** | **13.8263** | **3.6654** | **0.0906** | **3.7560** | | **16,164.1202** | **16,164.1202** | **0.5692** | | **16,178.3497** |

## 3.6 Paving - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1028 | 11.1249 | 14.5805 | 0.0228 | | 0.5679 | 0.5679 | | 0.5225 | 0.5225 | | 2,207.6603 | 2,207.6603 | 0.7140 | | 2,225.5104 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1028** | **11.1249** | **14.5805** | **0.0228** | | **0.5679** | **0.5679** | | **0.5225** | **0.5225** | | **2,207.6603** | **2,207.6603** | **0.7140** | | **2,225.5104** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0665 | 0.0365 | 0.5115 | 1.5400e-003 | 0.1677 | 9.6000e-004 | 0.1686 | 0.0445 | 8.9000e-004 | 0.0454 | | 153.8769 | 153.8769 | 3.4200e-003 | | 153.9624 |
| **Total** | **0.0665** | **0.0365** | **0.5115** | **1.5400e-003** | **0.1677** | **9.6000e-004** | **0.1686** | **0.0445** | **8.9000e-004** | **0.0454** | | **153.8769** | **153.8769** | **3.4200e-003** | | **153.9624** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1028 | 11.1249 | 14.5805 | 0.0228 | | 0.5679 | 0.5679 | | 0.5225 | 0.5225 | 0.0000 | 2,207.6603 | 2,207.6603 | 0.7140 | | 2,225.5104 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1028** | **11.1249** | **14.5805** | **0.0228** | | **0.5679** | **0.5679** | | **0.5225** | **0.5225** | **0.0000** | **2,207.6603** | **2,207.6603** | **0.7140** | | **2,225.5104** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0665 | 0.0365 | 0.5115 | 1.5400e-003 | 0.1677 | 9.6000e-004 | 0.1686 | 0.0445 | 8.9000e-004 | 0.0454 | | 153.8769 | 153.8769 | 3.4200e-003 | | 153.9624 |
| **Total** | **0.0665** | **0.0365** | **0.5115** | **1.5400e-003** | **0.1677** | **9.6000e-004** | **0.1686** | **0.0445** | **8.9000e-004** | **0.0454** | | **153.8769** | **153.8769** | **3.4200e-003** | | **153.9624** |

## 3.6 Paving - 2023

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0624 | 0.0329 | 0.4721 | 1.4900e-003 | 0.1677 | 9.4000e-004 | 0.1686 | 0.0445 | 8.6000e-004 | 0.0453 | | 148.0292 | 148.0292 | 3.0700e-003 | | 148.1059 |
| **Total** | **0.0624** | **0.0329** | **0.4721** | **1.4900e-003** | **0.1677** | **9.4000e-004** | **0.1686** | **0.0445** | **8.6000e-004** | **0.0453** | | **148.0292** | **148.0292** | **3.0700e-003** | | **148.1059** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.0624 | 0.0329 | 0.4721 | 1.4900e-003 | 0.1677 | 9.4000e-004 | 0.1686 | 0.0445 | 8.6000e-004 | 0.0453 | | 148.0292 | 148.0292 | 3.0700e-003 | | 148.1059 |
| **Total** | **0.0624** | **0.0329** | **0.4721** | **1.4900e-003** | **0.1677** | **9.4000e-004** | **0.1686** | **0.0445** | **8.6000e-004** | **0.0453** | | **148.0292** | **148.0292** | **3.0700e-003** | | **148.1059** |

## 3.7 Architectural Coating - 2023

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 178.8436 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **179.0352** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.9397 | 0.4954 | 7.1125 | 0.0224 | 2.5262 | 0.0142 | 2.5403 | 0.6700 | 0.0130 | 0.6830 | | 2,230.3063 | 2,230.3063 | 0.0463 | | 2,231.4628 |
| **Total** | **0.9397** | **0.4954** | **7.1125** | **0.0224** | **2.5262** | **0.0142** | **2.5403** | **0.6700** | **0.0130** | **0.6830** | | **2,230.3063** | **2,230.3063** | **0.0463** | | **2,231.4628** |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 178.8436 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | 0.0000 | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **179.0352** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | **0.0000** | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| 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 |
| 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 |
| Worker | 0.9397 | 0.4954 | 7.1125 | 0.0224 | 2.5262 | 0.0142 | 2.5403 | 0.6700 | 0.0130 | 0.6830 | | 2,230.3063 | 2,230.3063 | 0.0463 | | 2,231.4628 |
| **Total** | **0.9397** | **0.4954** | **7.1125** | **0.0224** | **2.5262** | **0.0142** | **2.5403** | **0.6700** | **0.0130** | **0.6830** | | **2,230.3063** | **2,230.3063** | **0.0463** | | **2,231.4628** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 584.4622 | 4,543.5712 | 7,069.8579 | 43.1657 | 4,153.8578 | 16.5659 | 4,170.4237 | 1,110.2529 | 15.4455 | 1,125.6984 | | 4,435,361.2053 | 4,435,361.2053 | 151.3155 | | 4,439,144.0934 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unmitigated | 584.4622 | 4,543.5712 | 7,069.8579 | 43.1657 | 4,153.8578 | 16.5659 | 4,170.4237 | 1,110.2529 | 15.4455 | 1,125.6984 | | 4,435,361.2053 | 4,435,361.2053 | 151.3155 | | 4,439,144.0934 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Mid Rise | 570,966.12 | 548,628.00 | 503134.32 | 1,907,060,214 | 1,907,060,214 |
| Total | 570,966.12 | 548,628.00 | 503,134.32 | 1,907,060,214 | 1,907,060,214 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Mid Rise | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 0.565475 | 0.033834 | 0.192058 | 0.100675 | 0.009211 | 0.004032 | 0.016699 | 0.069908 | 0.001423 | 0.001062 | 0.004327 | 0.000756 | 0.000539 |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| NaturalGas Unmitigated | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Mid Rise | 63715.9 | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| **Total** | | **0.6871** | **5.8719** | **2.4987** | **0.0375** | | **0.4748** | **0.4748** | | **0.4748** | **0.4748** | | **7,495.9851** | **7,495.9851** | **0.1437** | **0.1374** | **7,540.5300** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Mid Rise | 63.7159 | 0.6871 | 5.8719 | 2.4987 | 0.0375 | | 0.4748 | 0.4748 | | 0.4748 | 0.4748 | | 7,495.9851 | 7,495.9851 | 0.1437 | 0.1374 | 7,540.5300 |
| **Total** | | **0.6871** | **5.8719** | **2.4987** | **0.0375** | | **0.4748** | **0.4748** | | **0.4748** | **0.4748** | | **7,495.9851** | **7,495.9851** | **0.1437** | **0.1374** | **7,540.5300** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 449.6052 | 34.1074 | 928.6796 | 2.0463 | | 120.8017 | 120.8017 | | 120.8017 | 120.8017 | 14,724.7957 | 28,529.5242 | 43,254.3199 | 44.1345 | 0.9994 | 44,655.5077 |
| Unmitigated | 449.6052 | 34.1074 | 928.6796 | 2.0463 | | 120.8017 | 120.8017 | | 120.8017 | 120.8017 | 14,724.7957 | 28,529.5242 | 43,254.3199 | 44.1345 | 0.9994 | 44,655.5077 |

## 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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.6949 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 31.1256 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 411.9206 | 32.6164 | 799.4435 | 2.0395 | | 120.0824 | 120.0824 | | 120.0824 | 120.0824 | 14,724.7957 | 28,296.0000 | 43,020.7957 | 43.9122 | 0.9994 | 44,416.4259 |
| Landscaping | 3.8641 | 1.4910 | 129.2361 | 6.8500e-003 | | 0.7192 | 0.7192 | | 0.7192 | 0.7192 | | 233.5242 | 233.5242 | 0.2223 | | 239.0818 |
| **Total** | **449.6052** | **34.1074** | **928.6796** | **2.0463** | | **120.8017** | **120.8017** | | **120.8017** | **120.8017** | **14,724.7957** | **28,529.5242** | **43,254.3199** | **44.1345** | **0.9994** | **44,655.5077** |

**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 | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.6949 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 31.1256 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 411.9206 | 32.6164 | 799.4435 | 2.0395 | | 120.0824 | 120.0824 | | 120.0824 | 120.0824 | 14,724.7957 | 28,296.0000 | 43,020.7957 | 43.9122 | 0.9994 | 44,416.4259 |
| Landscaping | 3.8641 | 1.4910 | 129.2361 | 6.8500e-003 | | 0.7192 | 0.7192 | | 0.7192 | 0.7192 | | 233.5242 | 233.5242 | 0.2223 | | 239.0818 |
| **Total** | **449.6052** | **34.1074** | **928.6796** | **2.0463** | | **120.8017** | **120.8017** | | **120.8017** | **120.8017** | **14,724.7957** | **28,529.5242** | **43,254.3199** | **44.1345** | **0.9994** | **44,655.5077** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

## 11.0 Vegetation

# Emissions Calculations

## Emission Estimates

| | ROG | NOx | CO | SOx | PM10 | PM2.5 |
|---|---|---|---|---|---|---|
| **2011 GENERAL PLAN INVENTORY** | | | | | | |
| **Tons/Year** | | | | | | |
| **Area Sources** | | | | | | |
| Natural Gas Combustion | 14.23 | 188.52 | 109.40 | 0.00 | 0.35 | 0.35 |
| Landscaping Equipment | 48.10 | 3.02 | 267.22 | 0.01 | 0.71 | 0.70 |
| Consumer Products | 416.47 | - | - | - | - | - |
| Architectural Coatings | 78.67 | - | - | - | - | - |
| **Subtotal (Area Sources)** | **557.47** | **191.54** | **376.62** | **0.01** | **1.06** | **1.05** |
| **Indirect Sources** | | | | | | |
| Energy Consumption | 4.47 | 514.00 | 0.09 | 53.70 | 17.90 | - |
| Water Conveyance | 0.11 | 12.60 | 2.20 | 1.32 | 0.44 | - |
| **Subtotal (Indirect Sources)** | **4.58** | **526.60** | **2.29** | **55.02** | **18.34** | **0.00** |
| **Mobile Sources (by land use category)** | | | | | | |
| Single Family Housing | 425.40 | 594.36 | 5,090.88 | 5.76 | 992.57 | 193.26 |
| Multifamily Housing | 115.60 | 156.97 | 1,344.52 | 1.52 | 262.14 | 51.04 |
| High School [civic/institutional] | 18.14 | 26.37 | 217.64 | 0.25 | 43.98 | 8.55 |
| City Park | 8.81 | 8.80 | 72.34 | 0.08 | 14.66 | 2.85 |
| Strip Mall | 918.75 | 1,400.62 | 11,486.63 | 13.38 | 2,331.08 | 453.11 |
| Professional Office | 246.53 | 354.02 | 2,972.14 | 3.43 | 593.68 | 115.48 |
| Office Park [business park] | 180.87 | 560.13 | 2,200.81 | 2.53 | 437.33 | 85.09 |
| General Light Industrial | 15.17 | 21.00 | 177.83 | 0.20 | 35.31 | 6.87 |
| **Subtotal (Mobile Sources)** | **1,929.27** | **3,122.27** | **23,562.79** | **27.15** | **4,710.75** | **916.25** |
| **TOTAL** | **2,491.32** | **3,840.41** | **23,941.70** | **82.18** | **4,730.15** | **917.30** |
| | | | | | | |
| **lb/Day** | | | | | | |
| **Area Sources** | | | | | | |
| Natural Gas Combustion | 77.97 | 1,032.99 | 599.45 | 0.00 | 1.92 | 1.92 |
| Landscaping Equipment | 263.56 | 16.55 | 1,464.22 | 0.05 | 3.89 | 3.84 |
| Consumer Products | 2,282.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Architectural Coatings | 431.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Subtotal (Area Sources)** | **3,054.63** | **1,049.53** | **2,063.67** | **0.05** | **5.81** | **5.75** |
| **Indirect Sources** | | | | | | |
| Energy Consumption | 24.49 | 2,816.44 | 0.49 | 294.25 | 98.08 | 0.00 |
| Water Conveyance | 0.60 | 69.04 | 12.05 | 7.23 | 2.41 | 0.00 |
| **Subtotal (Indirect Sources)** | **25.10** | **2,885.48** | **12.55** | **301.48** | **100.49** | **0.00** |
| **Mobile Sources (by land use category)** | | | | | | |
| Single Family Housing | 2,330.96 | 3,256.77 | 27,895.23 | 31.56 | 5,438.74 | 1,058.96 |
| Multifamily Housing | 633.42 | 860.11 | 7,367.23 | 8.33 | 1,436.38 | 279.67 |
| High School [civic/institutional] | 99.40 | 144.49 | 1,192.55 | 1.37 | 240.99 | 46.85 |
| City Park | 48.27 | 48.22 | 396.38 | 0.44 | 80.33 | 15.62 |
| Strip Mall | 5,034.25 | 7,674.63 | 62,940.44 | 73.32 | 12,773.04 | 2,482.79 |
| Professional Office | 1,350.85 | 1,939.84 | 16,285.70 | 18.79 | 3,253.04 | 632.77 |
| Office Park [business park] | 991.07 | 3,069.21 | 12,059.23 | 13.86 | 2,396.33 | 466.25 |
| General Light Industrial | 83.12 | 115.07 | 974.41 | 1.10 | 193.48 | 37.64 |
| **Subtotal (Mobile Sources)** | **10,571.34** | **17,108.33** | **129,111.18** | **148.77** | **25,812.33** | **5,020.55** |
| **TOTAL** | **13,651.07** | **21,043.34** | **131,187.40** | **450.30** | **25,918.63** | **5,026.30** |
| | | | | | | |
| **GENERAL PLAN UPDATE - Residential *Increase*** | | | | | | |
| **lb/Day** | | | | | | |
| | | | | | | |
| Area | 38 | 1 | 129 | 0 | 1 | 1 |
| Energy | 0 | 4 | 2 | 0 | 0 | 0 |
| **TOTAL** | **38** | **6** | **131** | **0** | **1** | **1** |
| | | | | | | |
| **GENERAL PLAN UPDATE - Non-Residential *Decrease*** | | | | | | |
| **lb/Day** | | | | | | |
| | | | | | | |
| Area | 54 | 0 | 0 | 0 | 0 | 0 |
| Energy | 2 | 18 | 15 | 0 | 1 | 1 |
| **TOTAL** | **56** | **18** | **15** | **0** | **1** | **1** |
| TOTAL DECREASE | -56 | -18 | -15 | 0 | -1 | -1 |
| | | | | | | |
| **2011 GENERAL PLAN - Mobile** | | | | | | |
| **lb/Day** | | | | | | |
| | | | | | | |
| Mobile | 594 | 4620 | 7189 | 44 | 4241 | 1145 |
| | | | | | | |
| **GENERAL PLAN UPDATE - Mobile** | | | | | | |
| **lb/Day** | | | | | | |
| | | | | | | |
| Mobile | 584 | 4544 | 7070 | 43 | 4170 | 1126 |
| | | | | | | |
| NET MOBILE EMISSIONS | -10 | -77 | -120 | -1 | -71 | -19 |
| | | | | | | |
| **GENERAL PLAN UPDATE NET TOTAL** | **-27** | **-89** | **-4** | **-1** | **-71** | **-19** |
| **Existing + Net** | **3052** | **3846** | **2072** | **301** | **35** | **-14** |
| SCAQMD Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold exceeded? | no | no | no | no | no | no |