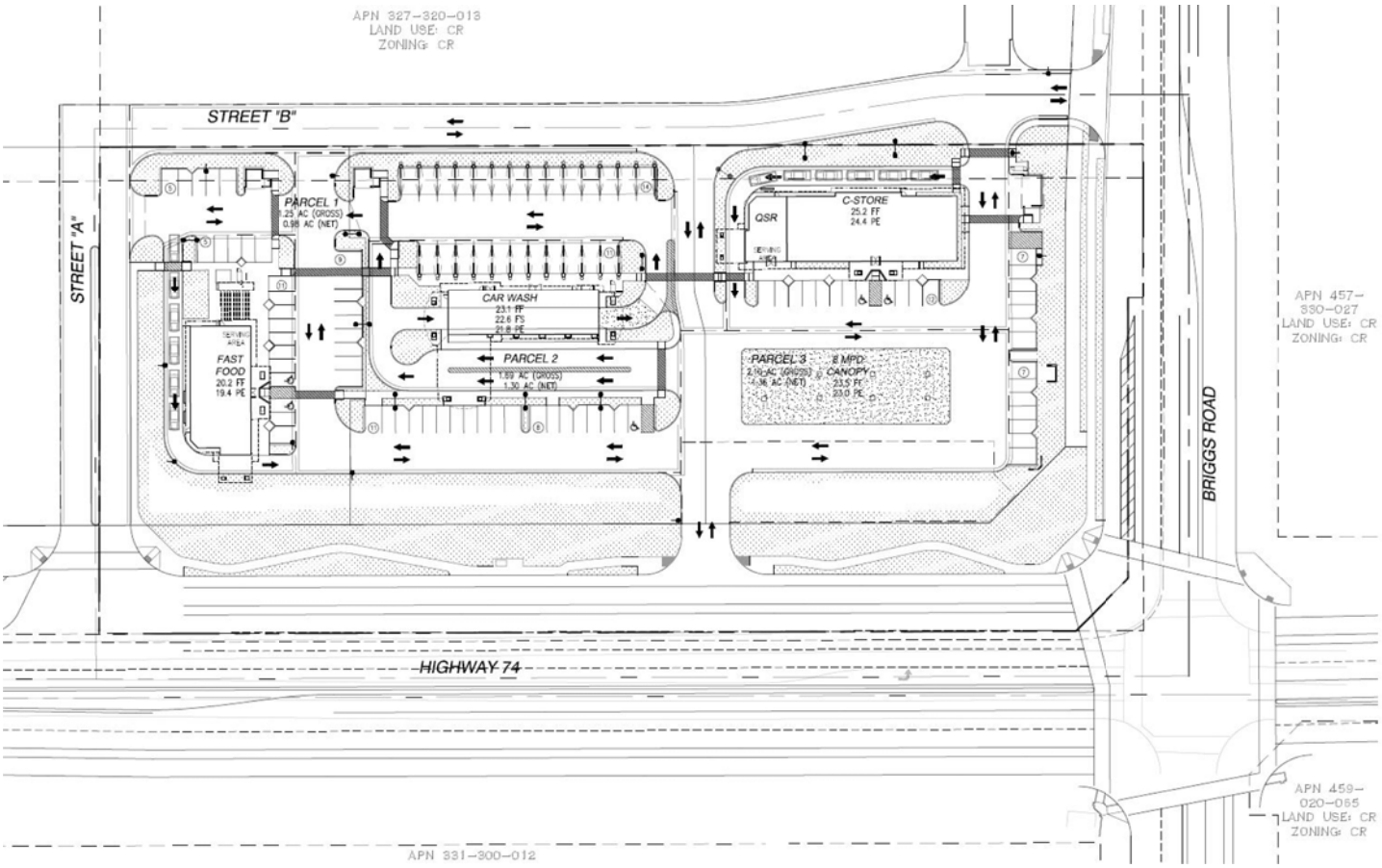
# BRIGGS ROAD AT HIGHWAY 74
# GAS STATION AND COMMERCIAL CENTER
# AIR QUALITY AND GREENHOUSE GAS IMPACT STUDY
## City of Menifee, California



# BRIGGS ROAD AT HIGHWAY 74
# GAS STATION AND COMMERCIAL CENTER
# AIR QUALITY AND GHG IMPACT STUDY
# City of Menifee, California

**Prepared for:**

THE RANCON GROUP
41391 Kalmia Street, Suite 200
Murrieta, CA 92562

**Prepared by:**

RK ENGINEERING GROUP, INC.
4000 Westerly Place, Suite 280
Newport Beach, CA 92660

**Bryan Estrada, AICP, PTP**

**April 25, 2019**

# Table of Contents

# Table of Contents (continued)

# List of Attachments

## Exhibits



## Tables



## Appendices

# 1.0 Introduction

The purpose of this air quality and greenhouse gas (GHG) impact study is to evaluate whether the estimated criteria air pollutant and greenhouse gas emissions generated from the construction and operation of the proposed Briggs Road at Highway 74 Gas Station and Commercial Center (project) would cause significant impacts to air resources. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the California Air Resources Board (CARB) and the South Coast Air Quality Management District (SCAQMD) recommendations for quantification of emissions and evaluation of potential impacts.

## 1.1 Site Location

The project site is located at the northwest corner of Briggs Road and Highway 74 in the City of Menifee, County of Riverside, as indicated in Exhibit A. The project site is approximately 5.04 gross acres in size and is currently vacant. The project site is located within the Menifee North Specific Plan area and the land use designation for the site is Commercial Retail (CR).

Land uses surrounding the site include vacant land zoned for commercial and residential uses to the north, a high school and vacant land zoned for commercial use to the south, vacant land zoned for residential and commercial uses to the east, and vacant land zoned for commercial business park to the west.

The project site is located within the South Coast Air Basin (SCAB), the SCAQMD Hemet/Elsinore General Forecast Area, and the Perris Valley Air Monitoring Area-24.

## 1.2 Project Description

The project will consist of constructing and operating a 16 fueling position gas station with a 4,967 square foot convenience market and a 3,000 square foot car wash. The project will also include one (1) 3,268 square foot free standing fast food restaurant with drive-through and one (1) attached 1,102 square foot fast food restaurant with drive-through located within the convenience market building.

A total of 75 surface parking stalls will be provided on-site. The project is consistent with the City's General Plan and Zoning map. The site plan used in this analysis was provided by THE RANCON GROUP and is illustrated in Exhibit B.

The proposed project land uses are shown in Table 1.

**Table 1**
**Land Use Summary**

| Land Use | Quantity | Metric[1] |
|---|---|---|
| Gasoline/Service Station | 16 | VFP |
| Convenience Market | 4,967 | SF |
| Car Wash | 3,000 | SF |
| Fast Food Restaurant with Drive-Through (Parcel 1) | 3,268 | SF |
| Fast Food Restaurant with Drive-Through (Parcel 3) | 1,102 | SF |
| Parking Lot | 75 | Spaces |

[1] VFP = Vehicle Fueling Positions
SF = Square Feet

Construction of the project is estimated to begin in year 2018 and last approximately 14 months. Construction activities are expected to consist of site preparation, grading, building construction, paving, and architectural coating. The project is expected to export approximately 5,200 cubic yards of soil during the grading phase. The project is expected to be operational by year 2019.

## 1.3 Sensitive Receptors

Sensitive receptors are considered land uses or other types of population groups that are more sensitive to air pollution exposure. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases. For CEQA purposes, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24-hours or longer, such as residencies, hospitals, and schools (etc), as described in the Localized Significance Threshold Methodology (SCAQMD 2008a, page 3-2).

The nearest existing sensitive receptors are the existing Marion V. Ashley Community Center located approximately 750 feet (229 meters) to the north of the site and the existing Heritage High School located approximately 400 feet (121 meters) south of the site. Potential future sensitive receptors include properties zoned for residential land uses that may be located approximately 350 feet (107 meters) north of the project and 250 feet (76 meters) northeast of the project site.

## 1.4 Summary of Analysis Results

Table 2 provides a summary of the CEQA air quality impact analysis results.

**Table 2**
**CEQA Air Quality Impact Criteria**

| Air Quality Impact Criteria | Potentially Significant | Potentially Significant Unless Mitigated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| *Would the project:* | | | | |
| a) Conflict with, or obstruct implementation of, the applicable air quality plan? | | | X | |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | | | X | |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)? | | | X | |
| d) Expose sensitive receptors to substantial pollutant concentrations? | | | X | |
| e) Create objectionable odors affecting a substantial number of people? | | | X | |

Table 3 provides a summary of the CEQA GHG impact criteria analysis results.

**Table 3**
**CEQA GHG Impact Criteria**

| GHG Impact Criteria | Potentially Significant | Potentially Significant Unless Mitigated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| *Would the project:* | | | | |
| a) Result in the generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | | | X | |
| b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases? | | | X | |

## 1.6 Recommended Project Design Features

The following recommended project design features include standard rules and requirements, best practices and recognized design guidelines for reducing air quality and GHG emissions. Design features are considered typical conditions of approval for the project and would be integrated into its design. Incorporating design features helps ensure the project does not conflict with established plans, policies and/or regulations regarding air quality and GHG reduction.

### 1.6.1 Air Quality Design Features

**DF-1.** All construction equipment shall be maintained in proper tune.

**DF-2.** All construction vehicles shall be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.

**DF-3.** Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible.

**DF–4:** The use of heavy **c**onstruction equipment shall be suspended during first stage smog alerts.

**DF–5:** "Clean diesel" equipment shall be used when modified engines (catalyst equipped or newer Moyer Program retrofit) are available at a reasonable cost.

**DF–6:** The project must follow SCAQMD rules and requirements with regards to fugitive dust control, which include but are not limited to the following:

i. All active construction areas shall be watered two (2) times daily.

ii. All haul trucks shall be covered or shall maintain at least two (2) feet of freeboard.

iii. All unpaved parking or staging areas shall be paved or watered a minimum of two (2) times daily.

iv. Speed on unpaved roads shall be reduced to less than 15 mph.

v. Any visible dirt deposition on any public roadway shall be swept or washed at the site access points within 30 minutes.

vi. Any on-site stockpiles of debris, dirt or other dusty material shall be covered or watered twice daily.

vii. All operations on any unpaved surface shall be suspended if winds exceed 25 mph.

**DF–7:** Carpooling shall be encouraged for construction workers.

**DF–8:** Any dirt hauled off-site shall be wet down or covered.

**DF–9:** Access points shall be washed or swept daily.

**DF–10:** Construction sites shall be sandbagged for erosion control.

**DF–11:** Use low VOC content paint wherever possible.

**DF–12:** Comply with all SCAQMD Rule 461 requirements regarding gasoline transfer and dispensing.

### 1.6.2 Greenhouse Gas Design Features

**DF-1.** All construction equipment shall be maintained in proper tune.

**DF-2.** All construction vehicles shall be prohibited from excessive idling. Excessive idling is defined as five (5) minutes or longer.

**DF–3:** Carpooling shall be encouraged for construction workers.

**DF-4.** Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible.

**DF-5** Comply with the mandatory requirements of California's Building Energy Efficiency Standards and Green Building (CALGreen) Standards, including mandatory installation of electric vehicle service equipment (EVSE).

**DF-6.** Implement water conservation strategies, including low flow fixtures and toilets, water efficient irrigation systems, drought tolerant/native landscaping, and reduce the amount of turf.

**DF-7.** Use electric landscaping equipment, such as lawn mowers and leaf blowers, wherever possible.

# 2.0 Air Quality Setting

The Federal Clean Air Act (§ 7602) defines an air pollution as any agent or combination of such agents, including any physical, chemical, biological, or radioactive substance which is emitted into or otherwise enters the ambient air. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution. Air pollution can cause disease, allergies and death. It affects soil, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate. It can also cause damage to and deterioration of property, present hazards to transportation, and negatively impact the economy.

This section provides background information on criteria air pollutants, the applicable federal, state and local regulations concerning air pollution, and the existing physical setting of the project within the context of local air quality.

## 2.1 Description of Air Pollutants

The following section describes the air pollutants of concern related to the project. Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. The following descriptions of criteria air pollutants have been provided by the SCAQMD.

- **Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, and competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs in the body. The ambient air quality standard for carbon monoxide is intended to protect persons whose medical condition already compromises their circulatory system's ability to deliver oxygen. These medical conditions include certain heart ailments, chronic lung diseases, and anemia. Persons with these conditions have reduced exercise capacity even when exposed to relatively low levels of CO. Fetuses are at risk because their blood has an even greater affinity to bind with CO. Smokers are also at risk from ambient CO levels because smoking increases the background level of CO in their blood. The South Coast basin is has recently achieved attainment status for carbon monoxide by both USEPA and CARB.

- **Nitrogen Dioxide ($NO_2$)** is a byproduct of fuel combustion. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts quickly to form $NO_2$, creating the mixture of NO and $NO_2$ commonly called $NO_x$. $NO_2$ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, $NO_2$ is only potentially irritating. There is some indication of a relationship between $NO_2$ and chronic pulmonary fibrosis. Some increase in bronchitis in young children has also been observed at concentrations below 0.3 parts per million (ppm). $NO_2$ absorbs blue light which results in a brownish red cast to the atmosphere and reduced visibility. Although $NO_2$ concentrations have not exceeded national standards since 1991 and the state hourly standard since 1993, $NO_x$ emissions remain of concern because of their contribution to the formation of O3 and particulate matter.

- **Ozone ($O_3$)** is one of a number of substances called photochemical oxidants that are formed when volatile organic compounds (VOC) and $NO_x$ react in the presence of ultraviolet sunlight. $O_3$ concentrations in the South Coast basin are typically among the highest in the nation, and the damaging effects of photochemical smog, which is a popular name for a number of oxidants in combination, are generally related to the concentrations of $O_3$. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the subgroups most susceptible to $O_3$ effects. Short-term exposures (lasting for a few hours) to $O_3$ at levels typically observed in southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient $O_3$ levels and increases in daily hospital admission rates, as well as mortality, has also been reported. The South Coast Air Basin is designated by the USEPA as an extreme non-attainment area for ozone. Although $O_3$ concentrations have declined substantially since the early 1990s, the South Coast basin continues to have peak $O_3$ levels that exceed both state and federal standards.

- **Fine Particulate Matter ($PM_{10}$)** consists of extremely small suspended particles or droplets 10 microns or smaller in diameter that can lodge in the lungs, contributing to respiratory problems. $PM_{10}$ arises from such sources as re-entrained road dust, diesel soot, combustion products, tire and brake abrasion, construction operations, and fires. It is also formed in the atmosphere from $NO_x$ and $SO_2$ reactions with ammonia. $PM_{10}$ scatters light and significantly reduces visibility. Inhalable particulates pose a serious health hazard, alone or in combination with other pollutants. More than half of the smallest particles inhaled will be deposited in the lungs and can cause

permanent lung damage. Inhalable particulates can also have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of an absorbed toxic substance. The South Coast basin has recently achieved federal attainment status for $PM_{10}$, but is non-attainment based on state requirements.

- **Ultra-Fine Particulate Matter ($PM_{2.5}$)** is defined as particulate matter with a diameter less than 2.5 microns and is a subset of $PM_{10}$. $PM_{2.5}$ consists mostly of products from the reaction of $NO_x$ and $SO_2$ with ammonia, secondary organics, finer dust particles, and the combustion of fuels, including diesel soot. $PM_{2.5}$ can cause exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease, declines in pulmonary function growth in children, and increased risk of premature death from heart or lung diseases in the elderly. Daily fluctuations in $PM_{2.5}$ levels have been related to hospital admissions for acute respiratory conditions, school absences, and increased medication use in children and adults with asthma. The South Coast basin is designated as non-attainment for $PM_{2.5}$ by both federal and state standards.

- **Sulfur dioxide ($SO_2$)** is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children. Individuals with asthma may experience constriction of airways with exposure to $SO_2$. Though $SO_2$ concentrations have been reduced to levels well below state and federal standards, further reductions in $SO_2$ emissions are needed because $SO_2$ is a precursor to sulfate and $PM_{10}$. The South Coast basin is considered a $SO_2$ attainment area by USEPA and CARB.

- **Lead (Pb)** concentrations once exceeded the state and federal air quality standards by a wide margin, but have not exceeded state or federal air quality standards at any regular monitoring station since 1982. Though special monitoring sites immediately downwind of lead sources recorded localized violations of the state standard in 1994, no violations have been recorded since. Consequently, the South Coast basin is designated as an attainment area for lead by both the USEPA and CARB. This report does not analyze lead emissions from the project, as it is not expected to emit lead in any significant measurable quantity.

- **Volatile Organic Compounds (VOC),** although not actually a criteria air pollutant, VOCs are regulated by the SCAQMD because they cause chemical reactions which contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher $PM_{10}$ and lower visibility levels.

Sources of VOCs include combustion engines, and evaporative emissions associated with fuel, paints and solvents, asphalt paving, and the use of household consumer products such as aerosols. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOC. Some hydrocarbon components classified as VOC emissions are hazardous air pollutants. Benzene, for example, is a hydrocarbon component of VOC emissions that is known to be a human carcinogen. The term reactive organic gases (ROG) are often used interchangeably with VOC.

- **Toxic Air Contaminants (TACs)** are defined as air pollutants which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health, and for which there is no concentration that does not present some risk. This contrasts with the criteria pollutants, in that there is no threshold level for TAC exposure below which adverse health impacts are not expected to occur. The majority of the estimated health risk from TACs can be attributed to a relatively few compounds, the most common being diesel particulate matter (DPM). In addition to DPM, benzene and 1,3-butadiene are also significant contributors to overall ambient public health risk in California. The primary TAC associated with the project is benzene exposure from the operation of the gas station.

## 2.2 Federal and State Ambient Air Quality Standards

The Federal Clean Air Act, which was last amended in 1990, requires the EPA to set National Ambient Air Quality Standards (NAAQS) for criteria pollutants considered harmful to public health and the environment. The State of California has also established additional and more stringent California Ambient Air Quality Standards (CAAQS) in addition to the seven criteria pollutants designated by the federal government.

AAQS are designed to protect the health and welfare of the populace with a reasonable margin of safety. The standards are divided into two categories, primary standards and secondary standards. Primary standards are implemented to provide protection for the "sensitive" populations such as those with asthma, or the children and elderly. Secondary standards are to provide protection against visible pollution as well as damage to the surrounding environment, including animals, crops, and buildings.

Table 4 shows the Federal and State Ambient Air Quality Standards.

**Table 4**
**Federal and State Ambient Air Quality Standards (AAQS)[1]**

| Air Pollutant | Averaging Time | Federal Standard (NAAQS)[2] | California Standard (CAAQS)[2] |
|---|---|---|---|
| Ozone | 1 Hour | -- | 0.09 ppm |
| | 8 Hour | 0.070 ppm[4] | 0.070 ppm |
| Carbon Monoxide (CO) | 1 Hour | 35 ppm | 20 ppm |
| | 8 Hour | 9 ppm | 9 ppm |
| Nitrogen Dioxide ($NO_2$) | 1 Hour | 0.100 ppm | 0.18 ppm |
| | Annual | 0.053 ppm | 0.030 ppm |
| Sulfur Dioxide ($SO_2$) | 1 Hour | 0.075 ppm | 0.25 ppm |
| | 3 Hour | 0.5 ppm[3] | -- |
| | 24 Hour | -- | 0.04 ppm |
| Particulate Matter ($PM_{10}$) | 24 Hour | 150 $\mu$g/m$^3$ | 50 $\mu$g/m$^3$ |
| | Mean | -- | 20 $\mu$g/m$^3$ |
| Particulate Matter (PM2.5) | 24 Hour | 35 $\mu$g/m$^3$ | -- |
| | Annual | 12 $\mu$g/m$^3$ | 12 $\mu$g/m$^3$ |
| Lead[4] | 30-day | -- | 1.5 $\mu$g/m |
| | Quarter | 1.5 $\mu$g/m | -- |
| | 3-month average | 0.15 $\mu$g/m | -- |
| Visibility reducing particles | 8 Hour | -- | 0.23/km extinction coefficient. (10-mile visibility standard) |
| Sulfates | 24 Hour | -- | 25 $\mu$g/m |
| Vinyl chloride[4] | 24 Hour | -- | 0.01 ppm |
| Hydrogen sulfide | 24 Hour | -- | 0.03 ppm |

[1] Source: USEPA and California Air Resources Board (CARB).
[2] ppm = parts per million of air, by volume; µg/m3 = micrograms per cubic meter; Annual = Annual Arithmetic Mean; 30-day = 30-day average; Quarter = Calendar quarter.
[3] Secondary standard
[4] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Several pollutants listed in Table 4 are not addressed in this analysis. Lead is not included because the project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The project is not expected to generate or be exposed to vinyl chloride because proposed project uses do not utilize the chemical processes that create this pollutant and there are no such uses in the project vicinity. The proposed project is not expected to cause exposure to hydrogen sulfide because it would not generate hydrogen sulfide in any substantial quantity.

In addition to setting out primary and secondary AAQS, the State has established a set of episode criteria for $O_3$, CO, $NO_2$, $SO_2$, and $PM_{10}$. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health, as required in the California Air Pollution Emergency Plan and Title 40 of the U.S. Code of Federal Regulations. Health effects are progressively more severe as pollutant levels increases from Stage One to Stage Three. An alert level is that concentration of pollutants at which initial stage control actions are to begin. An alert will be declared when any one of the pollutant concentrations can be expected to remain at these levels for 12 or more hours or to increase or, in the case of oxidants, the situation is likely to recur within the next 24 hours, unless control actions are taken.

Pollutant alert levels:

- $O_3$: 392 micrograms per cubic meter ($\mu$g/m3) (0.20 parts per million [ppm]), 1-hour average
- CO: 17 milligrams per cubic meter (mg/m3) (15 ppm), 8-hour average
- $NO_2$: 1,130 $\mu$g/m3 (0.6 ppm) 1-hour average; 282 $\mu$g/m3 (0.15 ppm) 24-hour average

## 2.3 Attainment Status

The Clean Air Act requires states to prepare a State Implementation Plan (SIP) to ensure air quality meets the NAAQS. The California Air Resources Board (CARB) provides designations of attainment for air basins where AAQS are either met or exceeded. If the AAQS are met, the area is designated as being in "attainment", if the air pollutant concentrations exceed the AAQS, than the area is designated as being "nonattainment". If there is inadequate or inconclusive data to make a definitive attainment designation, the area is considered "unclassified."

National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

When a state submits a request to the EPA to re-designate a nonattainment area to attainment, the Clean Air Act (CAA) section 175A(a) requires that the state (or states, if the area is a multi-state area) submit a maintenance plan ensuring the area can maintain the air quality standard for which the area is to be re-designated for at least 10 years following the effective date of re-designation. Table 5 lists the attainment status for the criteria pollutants in the South Coast Air Basin (SCAB).

**Table 5**
**South Coast Air Basin Attainment Status[1]**

| Pollutant | State Status | National Status |
|---|---|---|
| Ozone | Nonattainment | Nonattainment (Extreme) |
| Carbon monoxide | Attainment | Attainment (Maintenance) |
| Nitrogen dioxide (annual) | Attainment | Attainment (Maintenance) |
| Nitrogen dioxide (1-hour) | Attainment | Attainment |
| Total | Attainment | Attainment |
| $PM_{10}$ | Nonattainment | Attainment |
| $PM_{2.5}$ | Nonattainment | Nonattainment |
| Lead | Attainment | Nonattainment (Partial)[2] |

[1] Source: California Air Resources Board. http://www.arb.ca.gov/desig/adm/adm.htm
[2] Partial Nonattainment designation – Los Angeles County portion of Basin only.

## 2.4 South Coast Air Quality Management District (SCAQMD)

The agency responsible for air pollution control for the South Coast Air Basin (SCAB) is the South Coast Air Quality Management District (SCAQMD). SCAQMD is responsible for controlling emissions primarily from stationary sources. SCAQMD maintains air quality

monitoring stations throughout the SCAB. SCAQMD, in coordination with the Southern California Association of Governments, is also responsible for developing, updating, and implementing the Air Quality Management Plan (AQMP) for the SCAB. An AQMP is a plan prepared and implemented by an air pollution district for a county or region designated as nonattainment of the federal and/or California ambient air quality standards. The term nonattainment area is used to refer to an air SCAB where one or more ambient air quality standards are exceeded.

Every three (3) years the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. The latest version is the 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air. While air quality has dramatically improved over the years, the SCAB still exceeds federal public health standards for both ozone and particulate matter (PM) and experiences some of the worst air pollution in the nation. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time.

The most significant air quality challenge in the SCAB is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. Based on the inventory and modeling results, 522 tons per day (tpd) of total SCAB NOx 2012 emissions are projected to drop to 255 tpd and 214 tpd in the 8-hour ozone attainment years of 2023 and 2031 respectively, due to continued implementation of already adopted regulatory actions ("baseline emissions"). The analysis suggests that total SCAB emissions of NOx must be reduced to approximately 141 tpd in 2023 and 96 tpd in 2031 to attain the 8-hour ozone standards. This represents an additional 45 percent reduction in NOx in 2023, and an additional 55 percent NOx reduction beyond 2031 levels.

The SCAQMD establishes a program of rules and regulations to obtain attainment of the state and federal standards in conjunction with the AQMP. Several of the rules and regulations that may be applicable to this project include, but are not limited to, the following:

**SCAQMD Rule 402** prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

**SCAQMD Rule 403** governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

**SCAQMD Rule 445** restricts wood burning devices from being installed into any new development and is intended to reduce the emissions of particulate matter for wood burning devices.

**SCAQMD Rule 1113** governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of project must comply with Rule 1113.

**SCAQMD Rule 1143** governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

**SCAQMD Rule 1186** limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

**SCAQMD Rule 1303** governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM10 among other pollutants.

**SCAQMD Rule 2202** On-Road Motor Vehicle Mitigation Options, is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average.

## 2.5 South Coast Air Basin

The project is located within the South Coast Air SCAB (SCAB). To the west of the SCAB is the Pacific Ocean. To the north and east are the San Gabriel, San Bernardino, and San Jacinto mountains, while the southern limit of the SCAB is the San Diego County line. The SCAB consists of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County.

The local dominant wind blows predominantly from the south-southwest with relatively low velocities. The annual average annual wind speed is about 10 miles per hour. Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion limit the vertical dispersion of air pollutants throughout the SCAB.

The region also experiences periods of hot, dry winds from the desert, known as Santa Ana winds. If the Santa Ana winds are strong, they can surpass the sea breeze, which blows from the ocean to the land, and carry the suspended dust and pollutants out to the ocean. If the winds are weak, they are opposed by the sea breeze and cause stagnation, resulting in high pollution events.

The annual average temperature varies little throughout much of the SCAB, ranging from the low to middle 60s (°F). With more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

The mountains surrounding the region form natural horizontal barriers to the dispersion of air contaminants. Air pollution created in the coastal regions and Los Angeles metropolitan area are transported inland until reaching the mountains, where the combination of mountains and temperature inversion layers generally prevent further dispersion. This poor ventilation results in a gradual degradation of air quality from the coastal areas to inland areas of the SCAB. Air stagnation may occur during the early evening and early morning periods of transition between day and nighttime flows.

Temperature inversions are an important feature that limits the vertical depth through which pollution can be mixed. During the summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high-pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing, but acts like a giant lid over the SCAB. The air

remains stagnant, as the average wind speed in downtown Los Angeles becomes less than five mph.

A second type of inversion forms on clear winter nights when cold air off the mountains sinks to the valley floor while the air aloft over the valley remains warm. This forms radiation inversions. These inversions, in conjunction with calm winds, trap pollutants such as those from automobile exhaust near their source. They lead to air pollution "hotspots" in heavily developed coastal areas of the SCAB, although onshore breezes often push the pollutants along canyons into the inland valleys. Summers are often periods of hazy visibility and occasionally unhealthful air, while winter air quality impacts tend to be highly localized and can consist of elevated levels of nitrogen dioxide and fine particulate matter.

## 2.6 Local Climate and Meteorology

The weather station closest to the project site is a National Weather Service Cooperative weather station located at SUN CITY STATION (ID: 048655). Climatological data from the National Weather Service at this station is summarized in Table 6.

**Table 6**
**Meteorological Summary[1]**

| Month | Temperature (˚F) | | | Mean Precipitation (inches) |
|---|---|---|---|---|
| | Mean | Mean Max. | Mean Min. | |
| January | 51.8 | 68.5 | 35.1 | 2.24 |
| February | 53.0 | 68.9 | 37.1 | 3.29 |
| March | 56.3 | 72.1 | 40.5 | 1.65 |
| Total | 61.3 | 78.9 | 43.7 | 0.90 |
| May | 67.4 | 85.1 | 49.7 | 0.32 |
| June | 73.1 | 92.4 | 53.8 | 0.04 |
| July | 78.9 | 99.5 | 58.4 | 0.04 |
| August | 79.7 | 100.3 | 59.2 | 0.22 |
| September | 76.1 | 94.8 | 57.5 | 0.10 |
| October | 67.2 | 85.4 | 48.9 | 0.42 |
| November | 57.8 | 75.9 | 39.7 | 0.59 |
| December | 51.4 | 68.7 | 34.0 | 1.30 |
| **Annual** | **64.6** | **82.6** | **46.5** | **11.11** |

[1] Source: Western Regional Climate Center 2016. Averages derived from measurements recorded between 1981 and 2010 at Sun City Station No. 048655.

## 2.7 Local Air Quality

The SCAQMD has divided the SCAB into fourteen general forecasting areas and thirty six Source Receptor Areas (SRA) for monitoring and reporting local air quality. The SCAQMD provides daily reports of the current air quality conditions in each general forecast area and SRA. The monitoring areas provide a general representation of the local meteorological, terrain, and air quality conditions within the SCAB.

The project is located within the Hemet/Elsinore general forecasting area and Perris Valley SRA-24 locations. Perris Valley SRA-24 station does not monitor all criteria air pollutants. $O_3$ and $PM_{10}$ are monitored at SRA 24. The Elsinore Valley station is referenced for CO and $NO_2$. The Metropolitan Riverside County 3 Station was referenced for $PM_{2.5}$, and the Metropolitan Riverside County 1 Station was referenced for $SO_2$. These pollutant levels were used to comprise a "background" for the project location and existing local air quality.

Table 7 summarizes the published air quality monitoring data from 2014 through 2016, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the ozone and $PM_{2.5}$.

**Table 7**
**Local Air Quality[1]**

| Air Pollutant Location | Averaging Time | Item | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| **Carbon Monoxide from Elsinore Valley Station** | 1 Hour | Max 1-Hour (ppm) | 2.0 | 0.8 | 1.2 |
| | | Days > State Standard (20 ppm) | -- | -- | -- |
| | | Days >National Standard (35 ppm) | -- | -- | -- |
| | 8 Hour | Max 8 Hour (ppm) | 1.4 | 0.6 | 0.6 |
| | | Days > State Standard (9 ppm) | -- | -- | -- |
| | | Days >National Standard (9 ppm) | -- | -- | -- |
| **Ozone from Perris Valley Station** | 1 Hour | Max 1-Hour (ppm) | 0.117 | 0.131 | 0.131 |
| | | Days > State Standard (0.09 ppm) | 16 | 18 | 23 |
| | 8 Hour | Max 8 Hour (ppm) | 0.094 | 0.98 | 0.980 |
| | | Days > State Standard (0.07 ppm) | 63 | 35 | 56 |
| | | Days >National Standard (0.075 ppm)[1] | 38 | 19 | 30 |
| | | Days >National Standard (0.070 ppm) | - | 31 | 55 |
| **Coarse Particles (PM10) from Perris Valley Station** | 24 Hour | Max 24-Hour ($\mu g/m^3$) | 87.0 | 74.0 | 76.0 |
| | | Days > State Standard (50 $\mu g/m^3$) | 8 | 3 | 5 |
| | | Days >National Standard (150 $\mu g/m^3$) | 0 | 0 | 0 |
| | Annual | Annual Average ($\mu g/m^3$) | 35.1 | 30.3 | 32.2 |
| | | Exceeded >State Standard (20 $\mu g/m^3$) | YES | YES | YES |

**Table 7**
**Local Air Quality[1]**

| Air Pollutant Location | Averaging Time | Item | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| **Fine Particulates (PM2.5) from** | 24 Hour | Max 24-Hour ($\mu g/m^3$) | 73.6 | 56.6 | 45.64 |
| | | Days >National Standard (35 $\mu g/m^3$) | 9 | 17 | 6 |
| **Metropolitan Riverside County 3 Station** | Annual | Annual Average ($\mu g/m^3$) | 14.48 | 13.34 | 14.02 |
| | | Exceeded >State Standard (12 $\mu g/m^3$) | YES | YES | YES |
| | | Exceeded >National Standard (15 $\mu g/m^3$) | NO | NO | NO |
| **Nitrogen Dioxide from Elsinore Valley Station** | 1 Hour | Max 1-Hour (ppm) | 0.0453 | 0.0472 | 0.0513 |
| | | Days > State Standard (0.18 ppm) | -- | -- | -- |
| | Annual | Annual Average (ppm) | 0.0082 | 0.0087 | 0.0081 |
| | | Exceeded >State Standard (0.030 ppm) | NO | NO | NO |
| | | Exceeded >National Standard (0.053 ppm) | NO | NO | NO |
| **Sulfur Dioxide from Metropolitan Riverside County 1 Station** | 1 Hour | Max 1 Hour (ppm) | 0.0056 | 0.0019 | 0.0056 |
| | | Days > State Standard (0.25 ppm) | -- | -- | -- |
| | | Days >National Standard (0.075 ppm) | -- | -- | -- |
| | Annual | Annual Average (ppm) | - - | - - | - - |
| | | Exceeded >National Standard (0.030 ppm) | - - | - - | - - |

Source: EPA and ARB websites www.epa.gov/air/data.index.html and www.arb.ca.gov/adam/welcome.html
$\mu g/m^3$ = micrograms per cubic meter
ARB = California Air Resource Board
EPA= Environmental Protection Agency
ppm = part per million
(- -) = Data not provided
[1] = 2008 National Standards

# 3.0 Global Climate Change Setting

Global climate change is the change in the average weather of the earth that is measured by such things as alterations in temperature, wind patterns, storms, and precipitation. Current data shows that the current period of warming is occurring more rapidly than past geological events. The average global surface temperature has increased approximately 1.4° Fahrenheit since the early 20th Century. 1.4° Fahrenheit may seem like a small change, but it's an unusual event in Earth's recent history, and small changes in temperature correspond to enormous changes in the environment.

The planet's climate record, preserved in tree rings, ice cores, and coral reefs, shows that the global average temperature has been stable over long periods of time. For example, at the end of the last ice age, when the Northeast United States was covered by more than 3,000 feet of ice, average global temperatures were only 5° to 9° Fahrenheit cooler than today. The Intergovernmental Panel on Climate Change (IPCC), which includes more than 1,300 scientists from the United States and other countries, forecasts a temperature rise of 2.5° to 10° Fahrenheit over the next century. Therefore, significant changes to the environment are expected in the near future.

The consequences of global climate change include more frequent and severe weather, worsening air pollution by increasing ground level ozone, higher rates of plant and animal extinction, more acidic and oxygen depleted oceans, strain on food and water resources, and threats to densely populated coastal and low lying areas from sea level rise.

The impacts of climate change are already visible in the Southwest United States. In California, the consequences of climate change include;

- A rise in sea levels resulting in displacement of costal businesses and residencies
- A reduction in the quality and supply of water from the Sierra snowpack
- Increased risk of large wildfires
- Exacerbation of air quality problems
- Reductions in the quality and quantity of agricultural products
- An increase temperature and extreme weather events
- A decrease in the health and productivity of California's forests

## 3.1 Greenhouse Gases

Most scientists agree the main cause of the current global warming trend is anthropogenic (human-induced) augmentation of the greenhouse effect. The greenhouse effect refers to the way gases in the earth's atmosphere trap and re-emits long wave infrared radiation, acting like a blanket insulating the earth. Activities such as fossil fuel combustion, industrial processes, agriculture, and waste decomposition have elevated the concentration of greenhouse gases in the atmosphere beyond the level of naturally occurring concentrations.

GHGs comprise less than 0.1 percent of the total atmospheric composition, yet they play an essential role in influencing climate. Greenhouse gases include naturally occurring compounds such as carbon dioxide ($CO_2$), methane ($CH_4$), water vapor ($H_2O$), and nitrous oxide ($N_2O$), while others are synthetic. Man-made GHGs include the chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs), as well as sulfur hexafluoride ($SF_6$). Different GHGs have different effects on the Earth's warming. GHGs differ from each other in their ability to absorb energy (their "radiative efficiency") and how long they stay in the atmosphere, also known as the "lifetime".

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of $CO_2$. The larger the GWP, the more that a given gas warms the Earth compared to $CO_2$ over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases, and allows policymakers to compare emissions reduction opportunities across sectors and gases.

Table 8 lists the 100-year GWP of GHGs from the Intergovernmental Panel on Climate Change (IPCC) fourth assessment report (AR4).

**Table 8**
**Global Warming Potential of Greenhouse Gases[1, 2]**

| Gas Name | Formula | Lifetime (years) | GWP |
|---|---|---|---|
| Carbon Dioxide | $CO_2$ | | 1 |
| Methane | $CH_4$ | 12 | 25 |
| Nitrous Oxide | $N_2O$ | 114 | 298 |
| Sulphur Hexafluoride | $SF_6$ | 3200 | 22,800 |
| Nitrogen Trifluoride | $NF_3$ | 740 | 17,200 |
| Hexafluoroethane (PFC-116) | $C_2F_6$ | 10,000 | 12,200 |
| Octafluoropropane (PFC-218) | $C_3F_8$ | 2,600 | 8,830 |
| Octafluorocyclobutane (PFC-318) | $C_4F_8$ | 3,200 | 10,300 |
| Tetrafluoromethane (PFC-14) | $CF_4$ | 50,000 | 7,390 |
| Hydrofluorocarbon 125 | HFC-125 | 29 | 3,500 |
| Hydrofluorocarbon 134a | HFC-134a | 14 | 1,430 |
| Hydrofluorocarbon 143a | HFC-143a | 52 | 4,470 |
| Hydrofluorocarbon 152a | HFC-152a | 1 | 124 |
| Hydrofluorocarbon 227ea | HFC-227ea | 34 | 3,220 |
| Hydrofluorocarbon 23 | HFC-23 | 270 | 14,800 |
| Hydrofluorocarbon 236fa | HFC-236fa | 240 | 9,810 |
| Hydrofluorocarbon 245fa | HFC-245fa | 8 | 1,030 |
| Hydrofluorocarbon 32 | HFC-32 | 5 | 675 |
| Hydrofluorocarbon 365mfc | HFC-365mfc | 9 | 794 |
| Hydrofluorocarbon 43-10mee | HFC-43-10mee | 16 | 1,640 |

[1] Source: IPCC Fourth Assessment Report (AR4)
[2] GWPs are used to convert GHG emission values to "carbon dioxide equivalent" ($CO_2e$) units

## 3.2 GHG Regulatory Setting - International

**Intergovernmental Panel on Climate Change.** In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

**United Nations.** The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change. The 2014 UN Climate Change Conference in Lima Peru provided a unique opportunity to engage all countries to assess how developed countries are implementing actions to reduce emissions.

**Kyoto Protocol.** The Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5 percent from 1990 levels during the first commitment period of 2008 – 2012 (UNFCCC 1997). On December 8, 2012, the Doha Amendment to the Kyoto Protocol was adopted. The amendment includes: New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 2013 – 2020, a revised list of greenhouse gases (GHG) to be reported on by Parties in the second commitment period, and Amendments to several articles of the Kyoto Protocol, which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.

**The Paris Agreement.** The Paris agreement is the first comprehensive global climate agreement to be ratified by the United States, United Nations, China, and India; the largest producers of greenhouse gas emissions in the world. The agreement was negotiated by a total of 195 nations, and entered into force on November 4, 2016. The central aim is to strengthen the global response to the threat of climate change by keeping the global temperature rise this century well below 2 degrees Celsius compared to pre-industrial levels, and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. Currently 122 parties have ratified the agreement. The

Trump administration has recently indicated the United States federal government will no longer participate in the Paris agreement.

## 3.3 GHG Regulatory Setting – National

**Greenhouse Gas Endangerment.** On December 2, 2009, the EPA announced that GHGs threaten the public health and welfare of the American people. The EPA also states that GHG emissions from on-road vehicles contribute to that threat. The decision was based on *Massachusetts v. EPA* (Supreme Court Case 05-1120) which argued that GHGs are air pollutants covered by the Clean Air Act and that the EPA has authority to regulate those emissions.

**Clean Vehicles.** Congress first passed the Corporate Average Fuel Economy (CAFE) law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards would cut carbon dioxide emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). The second phase of the national program would involve proposing new fuel economy and greenhouse gas standards for model years 2017 – 2025 by September 1, 2011.

On October 25, 2010, the EPA and the U.S. Department of Transportation proposed the first national standards to reduce greenhouse gas emissions and improve fuel efficiency of heavy-duty trucks and buses. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20 percent reduction in carbon dioxide emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10 percent reduction for gasoline vehicles and 15 percent reduction for diesel vehicles by

2018 model year (12 and 17 percent respectively, if accounting for air conditioning leakage). Lastly, for vocational vehicles, the agencies are proposing engine and vehicle standards starting in the 2014 model year which would achieve up to a 10 percent reduction in fuel consumption and carbon dioxide emissions by 2018 model year.

**Mandatory Reporting of Greenhouse Gases.** On January 1, 2010, the EPA started requiring large emitters of heat-trapping emissions to begin collecting GHG data under a new reporting system. Under the rule, suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of greenhouse gas emissions are required to submit annual reports to the EPA.

**Climate Adaption Plan.** The EPA Plan identifies priority actions the Agency will take to incorporate considerations of climate change into its programs, policies, rules and operations to ensure they are effective under future climatic conditions. The Plan reflects input received from States, Tribes and municipal and county officials during development, as well as comments received during a formal Tribal consultation process and a 60 day public comment period during the Winter of 2013.

EPA is also releasing final Climate Change Adaptation Implementation Plans from its National Environmental Program Offices and all 10 Regional Offices. The Implementation Plans, which also reflect responses to public comment, provide more detail on how EPA Programs and Regions will carry out the work called for in the agency wide Plan in partnership with states, tribes, and local governments.

## 3.4 GHG Regulatory Setting – State of California

**Table 9**
**California Climate Change Legislation[1]**

| Date | Legislation | Description |
|---|---|---|
| July 26, 2017 | Assembly Bill 617 (Christina Garcia, Chapter 136, Statutes of 2017) | Companion to Cap-and-Trade<br>Extension Establishes a groundbreaking program to measure and reduce air pollution from mobile and stationary sources at the neighborhood level in the communities most impacted by air pollutants. Requires the Air Resources Board to work closely with local air districts and communities to establish neighborhood air quality monitoring networks and to develop and implement plans to reduce emissions. The focus on community-based air monitoring and emission reductions will provide a national model for enhanced community protection. |

## Table 9
## California Climate Change Legislation[1]

| Date | Legislation | Description |
|---|---|---|
| July 25, 2017 | Assembly Bill 398 (Eduardo Garcia, Chapter 135, Statutes of 2017) | Cap-and-Trade Extension<br>Extends and improves the Cap and Trade Program, which will enable the state to meet its 2030 emission reduction goals in the most cost-effective manner. Furthermore, extending the Cap and Trade Program will provide billions of dollars in auction proceeds to invest in communities across California. |
| September 19, 2016 | Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016) | Short-lived Climate Pollutants<br>Establishes statewide reduction targets for short-lived climate pollutants. |
| September 8, 2016 | Assembly Bill 197 (Eduardo Garcia, Chapter 250, Statutes of 2016) | **Greenhouse gas regulations**<br>Prioritizes direct emission reductions from large stationary sources and mobile sources. |
| September 8, 2016 | Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016) | **Greenhouse Gas emission reduction target for 2030**<br>Establishes a statewide greenhouse gas (GHG) emission reduction target of 40 percent below 1990 levels by 2030. |
| October 7, 2015 | Senate Bill 350 (De León, Chapter 547, Statutes of 2015) | **Clean Energy and Pollution Reduction Act of 2015**<br>Establishes targets to increase retail sales of renewable electricity to 50 percent by 2030 and double the energy efficiency savings in electricity and natural gas end uses by 2030. |
| September 21, 2014 | Senate Bill 605 (Lara, Chapter 523, Statutes of 2014) | **Short-lived climate pollutants**<br>Requires the State Air Resources Board to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. |
| September 21, 2014 | Senate Bill 1275 (De León, Chapter 530, Statutes of 2014) | **Charge Ahead California Initiative**<br>Establishes a state goal of 1 million zero-emission and near-zero-emission vehicles in service by 2020. Amends the enhanced fleet modernization program to provide a mobility option. Establishes the Charge Ahead California Initiative requiring planning and reporting on vehicle incentive programs, and increasing access to and benefits from zero-emission vehicles for disadvantaged, low-income, and moderate-income communities and consumers. |

## Table 9
## California Climate Change Legislation[1]

| Date | Legislation | Description |
|---|---|---|
| September 21, 2014 | Senate Bill1204 (Lara, Chapter 524, Statutes of 2014) | **California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program** Creates the California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program funded by the Greenhouse Gas Reduction Fund for development, demonstration, precommercial pilot, and early commercial deployment of zero- and near-zero emission truck, bus, and off-road vehicle and equipment technologies, with priority given to projects benefiting disadvantaged communities. |
| September 28, 2013 | Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013) | Alternative fuel and vehicle technologies: funding programs Extends until January 1, 2024, extra fees on vehicle registrations, boat registrations, and tire sales in order to fund the AB 118, Carl Moyer, and AB 923 programs that support the production, distribution, and sale of alternative fuels and vehicle technologies and air emissions reduction efforts. The bill suspends until 2024 ARB's regulation requiring gasoline refiners to provide hydrogen fueling stations and appropriates up to $220 million, of AB 118 money to create a hydrogen fueling infrastructure in the state. |
| September 28, 2013 | Assembly Bill 1092 (Levine, Chapter 410, Statutes of 2013) | Building standards: electric vehicle charging infrastructure Requires the Building Standards Commission to adopt mandatory building standards for the installation of future electric vehicle charging infrastructure for parking spaces in multifamily dwellings and nonresidential development. |
| September 30, 2012 | Senate Bill 535 (De León, Chapter 830, Statutes of 2012) | Greenhouse Gas Reduction Fund and Disadvantaged Communities Requires the California Environmental Protection Agency to identify disadvantaged communities; requires that 25% of all funds allocated pursuant to an investment plan for the use of moneys collected through a cap-and-trade program be allocated to projects that benefit disadvantaged communities and 10 those 25% be use within disadvantaged communities; and requires the Department of Finance to include a description of how these requirements are fulfilled in an annual report. |
| September 30, 2012 | Assembly Bill 1532 (J. Perez, Chapter 807, Statutes of 2012) | Greenhouse Gas Reduction Fund in the Budget Requires the Dept. of Finance to develop and submit to the Legislature an investment plan every 3 years for the use of the Reduction Fund; requires revenue collected pursuant to a market-based compliance mechanism to be appropriated in the Annual Budget Act; requires the dept. to report annually to the Legislature on the status of projects funded; and specifies that findings issued by the Governor related to "linkage" as part of a market-base compliance are not subject to judicial review. |

## Table 9
## California Climate Change Legislation[1]

| Date | Legislation | Description |
|---|---|---|
| April 12, 2011 | Senate Bill X1-2 (Simitian, Chapter 1, Statutes of 2011) | Governor Edmund G. Brown, Jr. signed Senate Bill X1-2 into law to codify the ambitious 33 percent by 2020 goal. SBX1-2 directs California Public Utilities Commission's Renewable Energy Resources Program to increase the amount of electricity generated from eligible renewable energy resources per year to an amount that equals at least 20% of the total electricity sold to retail customers in California per year by December 31, 2013, 25% by December 31, 2016 and 33% by December 31, 2020. The new RPS goals applies to all electricity retailers in the state including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. This new RPS preempts the California Air Resources Boards' 33 percent Renewable Electricity Standard. |
| September 29, 2011 | Assembly Bill 1504 (Skinner, Chapter 534, Statutes of 2010) | Forest resources and carbon sequestration. Bill requires Department of Forestry and Fire Protection and Air Resources Board to assess the capacity of its forest and rangeland regulations to meet or exceed the state's greenhouse goals, pursuant to AB 32. |
| September 30, 2008 | Senate Bill 375 (Steinberg, Chapter 728, Statutes of 2008) | Sustainable Communities & Climate Protection Act of 2008 requires Air Resources Board to develop regional greenhouse gas emission reduction targets for passenger vehicles. ARB is to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations. |
| October 14, 2007 | Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) | Alternative Fuels and Vehicles Technologies<br>The bill would create the Alternative and Renewable Fuel and Vehicle Technology Program, to be administered by the Energy Commission, to provide funding to public projects to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies. |
| August 24, 2007 | Senate Bill 97 (Dutton, Chapter 187, Statutes of 2007) | Directs Governor's Office of Planning and Research to develop CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." |
| July 18. 2006 | Assembly Bill 1803 (Committee on Budget, Chapter 77, Statutes of 2006) | Greenhouse gas inventory transferred to Air Resources Board from the Energy Commission. |
| August 21, 2006 | Senate Bill 1 (Murray, Chapter 132, Statutes of 2006) | California's Million Solar Roofs plan is enhanced by PUC and CEC's adoption of the California Solar Initiative. SB1 directs PUC and CEC to expand this program to more customers, and requiring the state's municipal utilities to create their own solar rebate programs. This bill would require beginning January 1, 2011, a seller of new homes to offer the option of a solar energy system to all |

**Table 9**
**California Climate Change Legislation[1]**

| Date | Legislation | Description |
|---|---|---|
| | | customers negotiating to purchase a new home constructed on land meeting certain criteria and to disclose certain information. |
| September 26, 2006 | Senate Bill 107 (Simitian, Chapter 464, Statutes of 2006) | SB 107 directs California Public Utilities Commission's Renewable Energy Resources Program to increase the amount of renewable electricity (Renewable Portfolio Standard) generated per year, from 17% to an amount that equals at least 20% of the total electricity sold to retail customers in California per year by December 31, 2010. |
| September 27, 2006 | Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006) | California Global Warming Solutions Act of 2006. This bill would require Air Resources Board (ARB) to adopt a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions levels in 1990 to be achieved by 2020. ARB shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program. AB 32 directs Climate Action Team established by the Governor to coordinate the efforts set forth under Executive Order S-3-05 to continue its role in coordinating overall climate policy. |
| September 12, 2002 | Senate Bill 1078 (Sher, Chapter 516, Statutes of 2002) | This bill establishes the California Renewables Portfolio Standard Program, which requires electric utilities and other entities under the jurisdiction of the California Public Utilities Commission to meet 20% of their renewable power by December 31, 2017 for the purposes of increasing the diversity, reliability, public health and environmental benefits of the energy mix. |
| September 7, 2002 | Senate Bill 812 (Sher, Chapter 423, Statutes of 2002) | This bill added forest management practices to the California Climate Action Registry members' reportable emissions actions and directed the Registry to adopt forestry procedures and protocols to monitor, estimate, calculate, report and certify carbon stores and carbon dioxide emissions that resulted from the conservation-based management of forests in California. |
| July 22, 2002 | Assembly Bill 1493 (Pavley, Chapter 200, Statutes of 2002) | The "Pavley" bill requires the registry, in consultation with the State Air Resources Board, to adopt procedures and protocols for the reporting and certification of reductions in greenhouse gas emissions from mobile sources for use by the state board in granting the emission reduction credits. This bill requires the state board to develop and adopt, by January 1, 2005, regulations that achieve the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks. |

## Table 9
## California Climate Change Legislation[1]

| Date | Legislation | Description |
|---|---|---|
| October 11, 2001 | Senate Bill 527 (Sher, Chapter 769, Statutes of 2001) | This bill revises the functions and duties of the California Climate Action Registry and requires the Registry, in coordination with CEC to adopt third-party verification metrics, developing GHG emissions protocols and qualifying third-party organizations to provide technical assistance and certification of emissions baselines and inventories. SB 527 amended SB 1771 to emphasize third-party verification. |
| September 30, 2000 | Senate Bill 1771 (Sher, Chapter 1018, Statutes of 2000) | SB 1771 establishes the creation of the non-profit organization, the California Climate Action Registry and specifies functions and responsibilities to develop a process to identify and qualify third-party organizations approved to provide technical assistance and advice in monitoring greenhouse gas emissions, and setting greenhouse gas (GHG) emissions baselines in coordination with CEC. Also, the bill directs the Registry to enable participating entities to voluntarily record their annual GHG emissions inventories. Also, SB 1771 directs CEC to update the state's greenhouse gas inventory from an existing 1998 report and continuing to update it every five years. |
| September 28, 1988 | Assembly Bill 4420 (Sher, Chapter 1506, Statutes of 1988) | The California Energy Commission (CEC) was statutorily directed to prepare and maintain the inventory of greenhouse gas emissions (GHG) and to study the effects of GHGs and the climate change impacts on the state's energy supply and demand, economy, environment, agriculture, and water supplies. The study also required recommendations for avoiding, reducing, and addressing related impacts - and required the CEC to coordinate the study and any research with federal, state, academic, and industry research projects. |

[1] Source: http://www.climatechange.ca.gov/state/legislation.html

## Table 10
## California Climate Change Executive Orders[1]

| Date | Governor's Executive Order | Description |
|---|---|---|
| July 17, 2015 | Executive Order # B-32-15 | EO-B-32-15 directs State agencies to develop an integrated freight action plan by July 2016. Among other things, the plan calls for targets for transportation efficiency and a transition to near-zero-emission technologies. |
| April 29, 2015 | Executive Order # B-30-15 | EO-B-30-15 sets a greenhouse gas (GHG) emissions target for 2030 at 40 percent below 1990 levels. |
| April 25, 2012 | Executive Order # B-18-12 | EO-B-18-12 calls for significant reductions in state agencies' energy purchases and GHG emissions. The Executive Order included a Green Building Action Plan, which provided additional details and specific requirements for the implementation of the Executive Order |
| March 23, 2012 | Executive Order # B-16-12 | EO-B-16-12 orders State agencies to facilitate the rapid commercialization of zero-emission vehicles (ZEVs). The Executive Order sets a target for the number of 1.5 million ZEVs in California by 2025. Also the Executive Order sets as a target for 2050 a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels. |
| November 14, 2008 | Executive Order # S-13-08 | EO-S-13-08 directs state agencies to plan for sea level rise and climate impacts through coordination of the state Climate Adaptation Strategy. |
| January 18, 2007 | Executive Order # S-01-07 | EO-S-01-07 establishes the 2020 target and Low Carbon Fuel Standard. The EO directs the Secretary of Cal/EPA as coordinator of 2020 target activities and requires the Secretary to report back to the Governor and Legislature biannually on progress toward meeting the 2020 target. |
| October 18, 2006 | Executive Order # S-20-06 | EO-S-20-06 establishes responsibilities and roles of the Secretary of Cal/EPA and state agencies in climate change. |
| April 25, 2006 | Executive Order # S-06-06 | EO-S-06-06 directs Secretary of Cal/EPA to participate in the Bio-Energy Interagency Working Group and addresses biofuels and bioenergy from renewable resources. |
| June 1, 2005 | Executive Order # S-03-05 | EO-S-3-05 establishes greenhouse gas emission reduction targets, creates the Climate Action Team and directs the Secretary of Cal/EPA to coordinate efforts with meeting the targets with the heads of other state agencies. The EO requires the Secretary to report back to the Governor and Legislature biannually on progress toward meeting the GHG targets, GHG impacts to California, Mitigation and Adaptation Plans. |
| December 14, 2004 | Executive Order # S-20-04 | EO-S-20-04 (Green Buildings) directs state agencies to reduce energy use in state owned buildings by 20% by 2015 and increase energy efficiency. |

[1] Source: http://www.climatechange.ca.gov/state/executive_orders.html

## 3.5 GHG Emissions Inventory

**National.** The US EPA has previously prepared an annual report called the Inventory of U.S. Greenhouse Gas Emissions and Sinks (Inventory). This report tracks total annual U.S. emissions and removals by source, economic sector, and greenhouse gas going back to 1990. The EPA is currently undergoing changes that reflect the agency's new direction under President Donald Trump and Administrator Scott Pruitt, and as of this time, GHG inventory is not currently being reported.

- The most recent national Inventory report, from year 2014, shows that national net GHG emissions (sources and sinks) were **6,108.0 $MMTCO_2e$**. ($MMTCO_2e$ = million metric tons of $CO_2$ equivalents)

**State of California.** The CARB is responsible for maintaining and updating California's annual GHG Inventory per California Global Warming Solutions Act (AB 32) and H&SC §39607.4. The GHG inventory is a critical piece in demonstrating the state's progress in achieving the statewide GHG target. An updated emission inventory is published annually to include additional years and improved estimation methods.

- The most recent state inventory data, from year 2015, shows that the total GHG emissions in the State of California for year 2015 were **440.4 $MMTCO_2e$.**

**Southern California Association of Governments.** The Southern California Association of Governments (SCAG) Regional Greenhouse Gas Emissions Inventory and Reference Case Projections, 1990-2035, was completed in May 2012 for SCAG by the Center for Climate Strategies. The final report presents an assessment of the region's anthropogenic GHG emissions and sinks from 1990 to 2035.

- The most recent regional estimates from SCAG are from year 2008. In 2008, the total GHG emissions in the SCAG region were estimated to be **230.7 $MMTCO_2e$.**

# 4.0 Modeling Parameters and Assumptions

The California Emissions Estimator Model Version 2016.3.2 (CalEEMod) was used to calculate criteria air pollutants and GHG emissions from the construction and operation of the project.

CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify criteria air pollutant and GHG emissions. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from off-site energy generation, solid waste disposal, vegetation planting and/or removal, and water use. The model also identifies mitigation measures to reduce criteria pollutant and GHG emissions. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts.

## 4.1 Construction Assumptions

Construction of the project is assumed to begin in year 2018 and last approximately 14 months. The project's construction schedule is based on the default CalEEMod construction timeline. Construction activity will consist of site preparation, grading, building construction, paving, and architectural coating. The assessment assumes that construction phases will not overlap.

The CalEEMod default construction equipment list is based on survey data and the size of the site. The parameters used to estimate construction emissions, such as the worker and vendor trips and trip lengths, utilize the CalEEMod defaults. The construction equipment list is shown in Table 11.

This analysis assumes 5,200 cubic yards of soil will need to be exported from the site during the grading phase of construction; resulting in approximately 650 truck hauling trips.

The quantity of fugitive dust estimated by CalEEMod is based on the number of equipment used during site preparation and grading. CalEEMod estimates the worst case fugitive dust impacts will occur during the site preparation phase. The total disturbance footprint would be 3.5 acres per 8 hour day with all equipment in use.

The project will be required to follow SCAQMD Rule 403 regarding fugitive dust; which requires dust generating activities to follow best available control measures to reduce particulate emissions.

**Table 11**
**Construction Equipment Assumptions Phase**

| Phase | Equipment[1] | Amount[1] | Hours Per Day[1] | Soil Disturbance Rate (Acres/ 8hr-Day) | Equipment Daily Disturbance Footprint (Acres) | Total Phase Daily Disturbance Footprint (Acres) |
|---|---|---|---|---|---|---|
| **Site Preparation** | Rubber Tired Dozers | 3 | 8 | 0.5 | 1.5 | 3.5 |
| | Tractors/Loaders/Backhoes | 4 | 8 | 0.5 | 2.0 | |
| **Grading** | Excavator | 1 | 8 | 0.5 | 0.5 | 3.0 |
| | Grader | 1 | 8 | 0.5 | 0.5 | |
| | Rubber Tired Dozers | 1 | 8 | 0.5 | 0.5 | |
| | Tractors/Loaders/Backhoes | 3 | 8 | 0.5 | 1.5 | |
| **Building Construction** | Cranes | 1 | 7 | 0.0 | 0.0 | 0.0 |
| | Forklifts | 3 | 8 | 0.0 | 0.0 | |
| | Generator Sets | 1 | 8 | 0.0 | 0.0 | |
| | Tractors/Loaders/Backhoes | 3 | 7 | 0.0 | 0.0 | |
| | Welders | 1 | 8 | 0.0 | 0.0 | |
| **Paving** | Pavers | 2 | 8 | 0.0 | 0.0 | 0.0 |
| | Paving Equipment | 2 | 8 | 0.0 | 0.0 | |
| | Rollers | 2 | 8 | 0.0 | 0.0 | |
| **Architectural Coating** | Air Compressors | 1 | 6 | 0.0 | 0.0 | 0.0 |

[1] CalEEMod Defaults

## 4.2 Localized Construction Analysis Modeling Parameters

CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. This report identifies the following parameters in the project design or applicable mitigation measures in order to compare CalEEMod reported emissions against the localized significance threshold lookup tables:

1) The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.

2) The maximum number of acres disturbed on the peak day.

3) Any emission control devices added onto off-road equipment.

4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.

## 4.3 Operational Assumptions

Operational emissions occur over the life of the Project and are considered "long-term" sources of emissions. Operational emissions include both direct and indirect sources. This section briefly describes the operational sources of emissions analyzed for the project.

### 4.3.1 Mobile Source Emissions

Mobile source emissions are the largest source of long-term air pollutants from the operation of the project. Mobile sources are direct sources of project emissions that are primarily attributed to tailpipe exhaust and road dust (tire, brake, clutch, and road surface wear) from motor vehicle usage.

Estimates of motor vehicle emissions require information on four parameters: trip generation, trip length, vehicle/fleet mix, and emission factors (quantity of emission for each mile traveled or time spent idling by each vehicle).

The trip generation rates for this project are based on the latest version of the ITE Trip Generation Manual, 10$^{th}$ Edition, 2017 and the assumptions in the Briggs Road at Highway 74 Traffic Impact Study, prepared by RK Engineering Group, Inc. (February 2018). Trip summary information is shown in Table 12.

CalEEMod does not have a car wash land uses and instead an automobile care center use was modeled. Trip rates for the automobile care center have been adjusted to reflect ITE trip rates for an automated car wash.

**Table 12**
**Trip Generation Rates**

| Land Use | ITE Code | Amount | Units[1] | Daily Trip Rate[2] | | |
|---|---|---|---|---|---|---|
| | | | | Weekday | Saturday | Sunday |
| Fast Food Restaurant with Drive-Through Window | 934 | 4.37 | TSF | 470.95 | 616.12 | 472.58 |
| Automated Car Wash[3,4] | 948 | 3.000 | TSF | 142.00 | 304.00 | 304.00 |
| Gasoline Service Station with Convenience Market[4] | 960 | 16 | FP | 230.52 | 291.67 | 291.67 |

[1] VFP = Vehicle Fueling Positions
TSF = Thousand Square Feet
[2] Trips rates based on ITE Trip Generation Manual 10th Edition (2017)
[3] No daily rates for ITE 948, daily rate assumed to be 10x peak hour rate.
[4] No Sunday rates available, Saturday rates used.

CalEEMod defaults for trip types, trip lengths, and diverted/pass-by trips are shown in Table 13. The operational vehicle mix is shown in Table 14 and is based on CalEEMod defaults of regional averages. The Emission Factors (EMFAC) 2014 model is used to estimate the mobile source emissions are embedded in the CalEEMod emissions model. No adjustments have been made to default emission factors.

**Table 13**
**Operational Vehicle Trip Assumptions[1]**

| Land Use | Non-Residential Trips[2] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Trip Length (miles) | | | Trip Percent (%) | | | Trip Type (%) | | |
| | C-C | C-W | C-NW | C-C | C-W | C-NW | Primary | Divert | Pass-By |
| Fast Food Restaurant with Drive-Through Window | 8.4 | 16.6 | 6.9 | 78.8 | 2.2 | 19 | 29 | 21 | 50 |
| Automated Car Wash | 8.4 | 16.6 | 6.9 | 48 | 33 | 19 | 21 | 51 | 28 |
| Gasoline Service Station with Convenience Market | 8.4 | 16.6 | 6.9 | 80.2 | 0.8 | 19 | 14 | 21 | 65 |

[1] CalEEMod Defaults
[2] Non-Residential Trips:
C-C = commercial-customer; C-W = commercial-work; C-NW = commercial-nonwork

**Table 14**
**Vehicle Mix for Trips[1]**

| Vehicle Class | Vehicle Mix (%)[2] |
|---|---|
| Light Duty Automobile (LDA) | 80.00% |
| Light Duty Truck (LDTI) | 8.00% |
| Light Duty Truck (LDT2) | 6.00% |
| Medium Duty Truck (MDV) | 4.00% |
| Light Heavy Truck (LHD1) | 0.00% |
| Light Heavy Truck (LHD2) | 0.00% |
| Medium Heavy Truck (MHD) | 0.90% |
| Heavy Heavy Truck (HHD) | 0.10% |
| Other Bus (OBUS) | 0.00% |
| Urban Bus (UBUS) | 0.00% |
| Motorcycle (MCY) | 1.00% |
| School Bus (SBUS) | 0.00% |
| Motor Home (MH) | 0.00% |
| **Total** | **100.0%** |

[1] Fleet mix is based on recommendations from City of Menifee staff and is consistent with other approved projects in the City.

### 4.3.2 Energy Source Emissions

Energy usage includes both direct and indirect sources of emissions. Direct sources of emissions include on-site natural gas usage (non-hearth) for heating, while indirect emissions include electricity generated by offsite power plants. Natural gas use is measured in units of a thousand British Thermal Units (kBTU) per size metric for each land use subtype and electricity use is measured in kilowatt hours (kWh) per size metric for each land use subtype.

CalEEMod, divides building electricity and natural gas use into uses that are subject to Title 24 standards and those that are not. Lighting electricity usage is also calculated as a separate category in CalEEMod. For electricity, Title 24 uses include the major building envelope systems covered by Part 6 (California Energy Code) of Title 24 such as space heating, space cooling, water heating, and ventilation. Non-Title 24 uses include all other end uses, such as appliances, electronics, and other miscellaneous plug-in uses. Because some lighting is not considered as part of the building envelope energy budget, and since a

separate mitigation measure is applicable to this end use, CalEEMod makes lighting a separate category.

For natural gas, uses are likewise categorized as Title 24 or Non-Title 24, with Title 24 uses including building heating and hot water end uses. Non-Title 24 natural gas uses include cooking and appliances (including pool/spa heaters).

The baseline values are based on the California Energy Commission (CEC) sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies.

### 4.3.3 Area Source Emissions

Area source emissions are direct sources of emissions that fall under four categories; hearths, consumer products, architectural coatings, and landscaping equipment. Per SCAQMD rule 445, no wood burning devices are allowed in developments; therefore no hearths are included in this project. Consumer products are various solvents used in non-industrial applications which emit ROGs during their product use. These typically include cleaning supplies, kitchen aerosols, cosmetics and toiletries.

### 4.3.4 Other Sources of Operational Emissions

**Water.** Greenhouse gas emissions are generated from the upstream energy required to supply and treat the water used on the project site. Indirect emissions from water usage are counted as part of the project's overall impact. The estimated water usage for the project is reported in Table 15 and recommendations to reduce water usage are discussed in Section 6.0.

As previously mentioned, CalEEMod does not include a car wash land use in the model, and therefore automobile care center land is used. RK reviewed the International Car Wash Association *Water Use in the Professional Car Wash Industry,* 2002 (water use report) to assess whether the estimated water usage for the project was consistent with industry findings. The findings from the water use report indicate the average observed water usage for a conveyor car wash, similar to the type proposed by the project, is 34.9 gallons per vehicle (without accounting for water reclamation). Based on the trip generation for the car wash, and conservatively assuming that all trips generated by the car was get a car wash (i.e. not counting employee trips, vacuum only users, etc.), the total vehicles using the car wash per year would be 102,804 vehicles. Therefore, the water usage for the car wash has been calculated as:

Annual Car Wash water usage = 34.9 gallons/vehicle x 102,804 vehicles/year

**Waste.** CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill. The program uses annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecycle) data for individual land uses. The program quantifies the GHG emissions associated with the decomposition of the waste which generates methane based on the total amount of degradable organic carbon. The estimated waste generation by the project is reported in Table 15 and recommendations to reduce waste generation in landfills are discussed in Section 6.0

**Table 15**
**Operational Water Usage and Waste Generation**

| Land Use | Water Usage (gallons/year) | | | Waste Generation (tons/year)[1] |
|---|---|---|---|---|
| | Indoor | Outdoor | Total | |
| Fast Food Restaurant with Drive-Through Window[1] | 1,326,442 | 84,667 | 1,411,109 | 50.34 |
| Automated Car Wash[2] | -- | 3,587,860 | 3,587,860 | 26.40 |
| Gasoline Service Station with Convenience Market[1] | 167,315 | 102,548 | 269,863 | 14.94 |
| Total | 1,493,757 | 3,775,074 | 5,268,831 | 76.74 |

[1] CalEEMod default estimates.
[2] Water use assumptions based on International Car Wash Association *Water Use in the Professional Car Wash Industry,* 2002 (http://www.carwash.org/docs/default-document-library/Water-Use-in-the-Professional-Car-Wash-Industry.pdf)

# 5.0 Significance Thresholds

## 5.1 Air Quality Regional Significance Thresholds

The SCAQMD has established air quality emissions thresholds for criteria air pollutants for the purposes of determining whether a project may have a significant effect on the environment per Section 15002(g) of the Guidelines for implementing CEQA. By complying with the thresholds of significance, the project would be in compliance with the SCAQMD Air Quality Management Plan (AQMP) and the federal and state air quality standards.

Table 16 lists the air quality significance thresholds for the six criteria air pollutants analyzed in this report. Lead is not included as part of this analysis as the project is not expected to emit lead in any significant measurable quantity.

**Table 16**
**SCAQMD Regional Significance Thresholds[1]**

| Pollutant | Construction (lbs/day) | Operation (lbs/day) |
|---|---|---|
| **$NO_X$** | 100 | 55 |
| **VOC** | 75 | 55 |
| **$PM_{10}$** | 150 | 150 |
| **$PM_{2.5}$** | 55 | 55 |
| **$SO_X$** | 150 | 150 |
| **CO** | 550 | 550 |

[1] Source: SCAQMD CEQA Handbook, 1993

## 5.2 Air Quality Localized Significance Thresholds

Air quality emissions are analyzed using the SCAQMD's Mass Rate Localized Significant Threshold (LST) Look-up Tables.

Table 17 lists the Localized Significance Thresholds (LST) used to determine whether a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. LSTs are developed based on the ambient concentrations of four applicable air pollutants

for source receptor area (SRA) 24 – Perris Valley. The nearest existing sensitive receptors are located approximately 121 meters to 229 meters away. Potential future residential sensitive receptors may be located approximately 107 to 76 meters away from the property line. The sensitive receptor distance for construction is assumed to be 100 meters, while the sensitive receptor distance for operation is 50 meters to account for worst case future home construction. The daily disturbance thresholds are based on a 5 acre site.

**Table 17**
**SCAQMD Localized Significance Thresholds[1] (LST)**

| Pollutant | Construction (lbs/day) | Operational (lbs/day) |
|---|---|---|
| **$NO_X$** | 378 | 302 |
| **CO** | 3,437 | 2,178 |
| **$PM_{10}$** | 59 | 10 |
| **$PM_{2.5}$** | 16 | 3 |

[1] Source: SCAQMD Mass Rate Localized Significance Thresholds for 5 acre site in SRA-24. Construction disturbance threshold = 100 meters; operational disturbance threshold = 50 meters.

## 5.3 Microscale CO Concentration Standards

The significance of localized CO impacts depends on whether ambient CO levels in the vicinity of the project are above or below federal or state standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of the AAQS. If ambient levels already exceed State or federal standards, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more.

Current CO levels in the SCAB are in attainment of both federal and state standards, and local air quality monitoring data indicates there have not been any localized exceedances of CO over the past three years. Therefore, the project must not contribute to an exceedance of a federal or state ambient air quality standard.

## 5.4 GHG Significance Thresholds

In the absence of a formal GHG threshold established by the State, the SCAQMD has published the *Interim CEQA Greenhouse Gas (GHG) Significance Thresholds, December 2008* (GHG Significance Thresholds) to assist local agencies with determining the impact of a project for CEQA. SCAQMD's objective in providing the GHG guidelines is to establish a performance standard that will ultimately contribute to reducing GHG emissions below 1990 levels, and thus achieve the requirements of the California Global Warming Solutions

Act (AB 32). The SCAQMD has held several GHG Significance Thresholds Stakeholder Working Group meetings where staff has presented updated recommendations that serve in addendum to the interim document.

The SCAQMD describes a five-tiered approach for determining GHG Significance Thresholds.

- **Tier 1 -** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2 -** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment based on the following tiers.

- **Tier 3 -** Consists of screening values that are intended to capture 90 percent of the GHG emissions from projects. If a project's emissions are under the screening thresholds, then the project is less than significant. SCAQMD has presented two options that lead agencies could choose for screening values. Option #1 sets the thresholds for residential projects to 3,500 $MTCO_2e$/year, commercial projects to 1,400 $MTCO_2e$/year), and the mixed use to 3,000 $MTCO_2e$/year. Option #2 sets a single numerical threshold for all non-industrial projects of 3,000 $MTCO_2e$/year. The current staff recommendation is to use option #2, but allows lead agencies to choose option #1 if they prefer. Regardless of which option a lead agency chooses to follow, it is recommended that the same option is consistently uses for all projects.

  Table 18 shows the screening levels described in option #2, which has been used previously in the City of Menifee.

**Table 18**
**SCAQMD Tier 3 GHG Screening Values**

| Land Use | Screening Value |
|---|---|
| Industrial Projects | 10,000 $MTCO_2e$/Yr |
| Residential/Commercial Projects | 3,000 $MTCO_2e$/Yr |

- **Tier 4 -** includes three performance standard compliance options to demonstrate the project in significant for GHG emissions.

**Compliance Option 1** consists of achieving a target percentage reduction in emission compared to the business as usual (BAU) methodology. The project proponent would need to incorporate design features into the project and/or implement GHG mitigation measures to demonstrate a 30 percent reduction in GHG emissions below BAU that is consistent with the current applicable goals of AB 32 in the State of the California.

**Compliance Option 2** consists of early compliance with AB 32 through early implementation of CARB's Scoping Plan Measures. This option is intended for projects in sectors subject to the Scoping Plan Measures.

**Compliance Option 3** consists of establishing efficiency-based performance standards at the plan level (program-level projects such as general plans) and project level. Efficiency standards are based on the amount of GHG emissions ($MTCO_2e$/year) per Service Population (SP). SP is defined as the sum of the residential and employment populations provided by a project.

**Table 19**
**SCAQMD Tier 4 Efficiency Thresholds**

| Project Type | Efficiency Thresholds[1] | |
|---|---|---|
| | Target Year 2020 | Target Year 2035 |
| Plan (Program) Level | 6.6 $MTCO_2e$/yr/SP | 4.1 $MTCO_2e$/yr/SP |
| Project Level | 4.8 $MTCO_2e$/yr/SP | 3.0 $MTCO_2e$/yr/SP |

- **Tier 5** – involves implementing off-site mitigation or the purchasing of offsets to reduce GHG emissions to less than the proposed screening level. The project proponent would be required to provide offsets for the life of the project, which is defined as 30 years.

By complying with the SCAQMD GHG thresholds of significance, the project is considered to be in compliance with the applicable State GHG legislation.

## 5.5 City of Menifee General Plan

In addition to the SCAQMD significance thresholds, the project is required to comply with the adopted air quality and GHG goals and policies from the City of Menifee General Plan Open Space and Conservation Element. The City has goals to reduce impacts to air quality

at the local level by minimizing pollution and particulate matter. Polices to meet these goals include:

- Meet State and federal clean air standards by minimizing particulate matter emissions from construction activities.

- Buffer sensitive land uses, such as residences, schools, care facilities, and recreation areas from major air pollutant emission sources, including freeways, manufacturing, hazardous materials storage, wastewater treatment, and similar uses.

- Comply with regional, state, and federal standards and programs for control of all airborne pollutants and noxious odors, regardless of source

- Support Riverside County Regional Air Quality Task Force, Southern California Association of Government's Regional Transportation Plan/Sustainable Communities Strategy, and SCAQMD's Air Quality Management Plan to reduce air pollution at the regional level.

- Comply with the mandatory requirements of Title 24 Part 1 of the California Building Standards Code and Title 24 Part 6 Building and Energy Efficiency Standards.

# 6.0 Air Quality Impact Analysis

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality would occur if the proposed project is determined to:

a) Conflict with or obstruct implementation of the applicable air quality plan.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

d) Expose sensitive receptors to substantial pollutant concentrations.

e) Create objectionable odors affecting a substantial number of people.

## 6.1 Short Term Air Quality Impacts

### 6.1.1 Regional Construction Emissions

Regional air quality emissions include both on-site and off-site emissions associated with construction of the project. Regional daily emissions of criteria pollutants are compared to the SCAQMD regional thresholds of significance.

As shown in Table 20, regional daily emissions of criteria pollutants are expected to be below the allowable thresholds of significance. The project must follow all standard SCAQMD rules and requirements with regards to fugitive dust control, as described in Section 6.1.3. Compliance with the dust control is considered a standard requirement and included as part of the project's design features, not mitigation.

By incorporating the recommended design features, the daily regional emissions will be below the SCAQMD thresholds of significance. **The project's short term construction impact to regional air resources is less than significant.**

CalEEMod daily emissions outputs are provided in Appendix A.

**Table 20**
**Regional Construction Emissions**

| Maximum Daily Emissions (lbs/day)[1] | | | | | | |
|---|---|---|---|---|---|---|
| **Activity** | **VOC** | **$NO_x$** | **CO** | **$SO_2$** | **$PM_{10}$** | **$PM_{2.5}$** |
| Site Preparation | 4.67 | 48.27 | 23.37 | 0.04 | 9.69 | 6.22 |
| Grading | 3.06 | 39.58 | 18.39 | 0.06 | 4.83 | 2.95 |
| Building Construction | 2.81 | 24.31 | 18.59 | 0.03 | 1.74 | 1.48 |
| Paving | 2.16 | 15.30 | 15.33 | 0.02 | 0.99 | 0.80 |
| Architectural Coating | 6.42 | 1.85 | 1.97 | 0.00 | 0.16 | 0.14 |
| Maximum[1] | 6.42 | 48.27 | 23.37 | 0.06 | 9.69 | 6.22 |
| SCAQMD Threshold | 75 | 100 | 550 | 150 | 150 | 55 |
| Exceeds Threshold (?) | **No** | **No** | **No** | **No** | **No** | **No** |

[1] Maximum daily emissions during summer or winter; includes both on-site and off-site project emissions.

### 6.1.2 Localized Construction Emissions

Table 21 illustrates the unmitigated construction related localized emissions and compares the results to SCAQMD LST thresholds. As shown in Table 21, the emissions will be below the SCAQMD thresholds of significance for localized construction emissions. The project must follow all standard SCAQMD rules and requirements with regards to fugitive dust control, as described in Section 6.1.3. Compliance with the dust control is considered a standard requirement and included as part of the project's design features, not mitigation. **The project's short term construction impact to localized air resources is less than significant.**

**Table 21**
**Localized Construction Emissions**

| Maximum Daily Emissions (lbs/day)[1] | | | | |
|---|---|---|---|---|
| **Activity** | **NOx** | **CO** | **$PM_{10}$** | **$PM_{2.5}$** |
| On-site Emissions | 48.20 | 22.48 | 9.49 | 6.17 |
| SCAQMD Construction Threshold[2] | 378 | 3,437 | 59 | 16 |
| Exceeds Threshold (?) | **No** | **No** | **No** | **No** |

[1] Maximum daily emissions during summer or winter; includes on-site project emissions only.
[2] Reference LST thresholds are from 2006-2008 SCAQMD Mass rate Localized Significant Thresholds for construction and operation Tables C-1 through C-6 for a disturbance area of 5 acres and at a receptor distance of 100 meters. Source Receptor Area 24 (Perris Valley) Thresholds.

### 6.1.3 Fugitive Dust

The Project is required to comply with regional rules that assist in reducing short-term air pollutant emissions associated with suspended particulate matter, also known as fugitive dust. Fugitive dust emissions are commonly associated with land clearing activities, cut-and-fill grading operations, and exposure of soils to the air and wind. SCAQMD Rule 403 requires that fugitive dust be controlled with best-available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rules 402 and 403 require implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site.

Applicable suppression techniques are as follows:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least two times daily.
- Cover all trucks hauling dirt, sand, soil, or other loose materials, and maintain at least 2 feet of freeboard space in accordance with the requirements of California Vehicle Code (CVC) section 23114.
- Pave or gravel construction access roads at least 100 feet onto the site from the main road and use gravel aprons at truck exits.
- Reduce traffic speeds on all unpaved roads to 15 mph or less.
- Replace ground cover of disturbed areas as quickly possible.
- A fugitive dust control plan should be prepared and submitted to SCAQMD prior to the start of construction.

Localized construction emissions, shown in Section 6.1.2, indicate daily construction emissions, with standard control measures, would be below the applicable thresholds established by the SCAQMD. **The proposed project's short term construction activities would cause less than significant Fugitive Dust impacts.**

### 6.1.4 Odors

Heavy-duty equipment in the project area during construction will emit odors; however, the construction activity would cease to occur after individual construction is completed. The project is required to comply with Rule 402 during construction, which states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose,

health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. No other sources of objectionable odors have been identified for the proposed Project. **Therefore, the project impact from odor emissions is less than significant.**

### 6.1.5 Naturally Occurring Asbestos

The proposed Project is located in Riverside County, CA, which is not among the California counties that are found to have serpentine and ultramafic rock in their soils. Therefore, the potential risk for naturally occurring asbestos (NOA) during project construction is small. However, in the event asbestos is found on the site, the project will be required to comply with the National Emissions Standards for Hazardous Air Pollutants (NESHAP) Asbestos Program. An Asbestos NESHAP Notification Form shall be completed and submitted to the California Air Resources Board (CARB) immediately upon discovery of the contaminant. The project will be required to follow NESHAP standards for emissions control during site renovation, waste transport and waste disposal. A person certified in asbestos removal procedures will be required to supervise on-site activities. By following the required asbestos abatement protocols, **the project impact is less than significant**.

### 6.1.6 Construction Traffic

Construction traffic is evaluated with regards to air quality and greenhouse gas related emissions. Construction traffic is expected to be heaviest during the grading phase, when a approximately 5,200 cubic yards of soil will be hauled from the site. CalEEMod estimates emission levels during all phases of construction related to both on-road and off-road mobile sources. As shown in Tables 20 and 21, emission levels associated with on-site and off-site construction traffic will be below the applicable thresholds set forth by the State of California and the SCAQMD. **The project impact is considered less than significant.**

## 6.2 Long Terms Air Quality Impacts

### 6.2.1 Regional Operational Emissions

Long-term operational air pollutant impacts from the project are shown in Table 22. Project operations are not expected to exceed the allowable daily emissions thresholds for criteria pollutants at the regional level. Therefore, the project would not conflict with the current air quality plan nor violate the established air quality standards, either directly or cumulatively. **The project related long-term air quality impacts would be less than significant.**

**Table 22**
**Regional Operational Emissions**

| Maximum Daily Emissions (lbs/day)[1] | | | | | | |
|---|---|---|---|---|---|---|
| **Activity** | **VOC** | **$NO_x$** | **CO** | **$SO_2$** | **$PM_{10}$** | **$PM_{2.5}$** |
| Mobile Sources | 13.98 | 8.26 | 62.41 | 0.10 | 9.07 | 2.48 |
| Energy Sources | 0.04 | 0.35 | 0.29 | 0.00 | 0.03 | 0.03 |
| Area Sources | 0.29 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 |
| **Total[1]** | 14.30 | 8.61 | 62.71 | 0.10 | 9.10 | 2.51 |
| SCAQMD Threshold[2] | 55 | 55 | 550 | 150 | 150 | 55 |
| Exceeds Threshold (?) | **No** | **No** | **No** | **No** | **No** | **No** |

[1] Maximum daily emissions during summer or winter; includes both on-site and off-site project emissions.

CalEEMod daily emissions outputs are provided in Appendix A.

### 6.2.2 Localized Operational Emissions

Table 23 shows the unmitigated localized operational emissions and compares the results to SCAQMD LST thresholds of significance.

As shown in Table 23, the emissions will be below the SCAQMD thresholds of significance for localized operational emissions.

**The project will result in less than significant localized operational emissions impacts.**

**Table 23**
**Localized Operational Emissions**

| Maximum Daily Emissions (lbs/day)[1] | | | | |
|---|---|---|---|---|
| **LST Pollutants** | NOx (lbs/day) | CO (lbs/day) | $PM_{10}$ (lbs/day) | $PM_{2.5}$ (lbs/day) |
| On-site Emissions[2] | 4.69 | 4.67 | 0.77 | 0.24 |
| SCAQMD Operation Threshold[3] | 302 | 2,178 | 10 | 3 |
| Exceeds Threshold (?) | **No** | **No** | **No** | **No** |

[1] Maximum daily emissions in summer or winter.
[2] Mobile source emissions include on-site vehicle emissions only. It is estimated that approximately 5% of mobile emissions will occur on the project site.
[3] Reference: 2006-2008 SCAQMD Mass Rate Localized Significant Thresholds for construction and operation Table C-1 through C-6; SRA 24, Perris Valley, disturbance area of 5-acre and receptor distance of 50 meters.

## 6.3 CO Hot Spot Emissions

A CO hot spot is a localized concentration of carbon monoxide (CO) that is above the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. At the time of the publishing of the 1993 CEQA Air Quality Handbook, the SCAB was designated nonattainment, and projects were required to perform hot spot analyses to ensure they did not exacerbate an existing problem. Since this time, the SCAB has achieved attainment status and the potential for hot spots caused by vehicular traffic congestion has been greatly reduced. In fact, the SCAQMD AQMP found that peak CO concentrations were primarily the result of unusual meteorological and topographical conditions and not traffic congestion and the 2003 SCAQMD AQMP found that, at four of the busiest intersections in Los Angeles, there were no CO hot spots concentrations.

Additionally, based on the results of the Briggs Road/Highway 74 traffic impact study, all nearby study area intersections were shown to operate at level of service D or better with the addition of the project and mitigation measures. It is reasonable to conclude, therefore, that the project would not significantly contribute to the formation of CO Hot Spots in the project vicinity.

**The project impact to CO Hot Spots is less than significant.**

## 6.4 Air Quality Management Plan Consistency

An AQMP describes air pollution control strategies to be taken by a City, County, or Region classified as a nonattainment area. The main purpose of an AQMP is to bring the area into compliance with Federal and State air quality standards. CEQA requires that certain proposed projects be analyzed for consistency with the AQMP. For this project to be consistent with the 2016 AQMP adopted by the SCAQMD, the pollutants emitted from the project should not exceed the SCAQMD daily threshold or cause a significant impact on air quality, or the project must already have been included in the AQMP projection. A project may also be deemed as consistent with the AQMP if feasible mitigation measures are implemented and shown to reduce the impact level to less than significant.

The 2016 AQMP states that the most significant air quality challenge in the SCAB is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. The Plan suggests that total SCAB emissions of NOx must be reduced to approximately 141 tons per day (tpd) in 2023 and 96 tpd in 2031 to attain the 8-hour ozone standards. This represents an additional 45 percent reduction in NOx in 2023, and an additional 55 percent NOx reduction beyond 2031 levels.

As demonstrated in this analysis, the project will comply with the applicable thresholds of significance for NOx, as well as the other criteria pollutants. **The project is consistent with the SCAQMD 2016 AQMP and the impact is less than significant.**

## 6.5 Operational Odors

Land uses that commonly receive odor complaints include agricultural uses (farming and livestock), chemical plants, composting operations, dairies, fiberglass molding facilities, food processing plants, landfills, refineries, rail yards, and wastewater treatment plants. The proposed project does not contain land uses that would typically be associated with significant odor emissions.

On-site restaurant uses may emit odors; however these are not typically considered offensive and several standard control measures will be implemented to reduce food odors. The project will be required to comply with standard building code requirements related to exhaust ventilation, as well as comply with SCAQMD Rule 402. Rule 402 requires that a person may not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural

tendency to cause, injury or damage to business or property. Project related odors are not expected to meet the criteria of being a nuisance. **The project's operation will not result in significant odor issues.**

## 6.6 Toxic Air Contaminants

The project includes a gas station which would emit benzene, a known human carcinogen. The gas station is subject to SCAQMD Rule 461 - Gasoline Transfer and Dispensing and the use will require a Permit to Operate by SCAQMD. Gasoline dispensing facilities are required to use Phase I/II EVR (enhanced vapor recovery) systems. Phase II EVR have an average efficiency of 95.1 percent and Phase I EVR have an average efficiency of 98 percent Therefore, potential for fugitive VOC or TAC emissions from the gasoline pumps is negligible.

Furthermore, the Table 2 of the CAPCOA Guidance Document, Health Risk Assessment for Proposed Land Use Projects (July 2009) recommends to "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." This project includes the construction and operation of a "typical" gas station and the closest sensitive receptor (existing or planned) is located at a distance greater than 50 feet from the project boundary. As such, the project will not be a significant source of toxic air contaminants and sensitive receptors would not be exposed to toxic sources of air pollution. **The project impact is less than significant.**

# 7.0 Greenhouse Gas Impact Analysis

## 7.1 Construction Greenhouse Gas Emissions

Greenhouse gas emissions are estimated for on-site and off-site construction activity using CalEEMod. Table 24 shows the construction greenhouse gas emissions, including equipment and worker vehicle emissions for all phases of construction. Construction emissions are averaged over 30 years and added to the long term operational emissions, pursuant to SCAQMD recommendations.

CalEEMod annual GHG output calculations are provided in Appendix B.

**Table 24**
**Construction Greenhouse Gas Emissions**

| Activity | Emissions ($MTC0_2e$)[1] | | |
|---|---|---|---|
| | On-site | Off-site | Total |
| Demolition | 0.00 | 0.00 | 0.00 |
| Site Preparation | 17.52 | 0.88 | 18.40 |
| Grading | 27.32 | 25.54 | 52.86 |
| Building Construction | 272.50 | 38.67 | 311.17 |
| Paving | 20.64 | 1.43 | 22.07 |
| Architectural Coating | 2.56 | 0.29 | 2.85 |
| **Total** | 340.54 | 66.81 | 407.35 |
| **Averaged over 30 years[2]** | 11.35 | 2.23 | 13.58 |

[1] $MTCO_2e$=metric tons of carbon dioxide equivalents (includes carbon dioxide, methane, nitrous oxide, and/or hydroflurocarbons).
[2] The emissions are averaged over 30 years and added to the operational emissions, pursuant to SCAQMD recommendations.

## 7.2 Operational Greenhouse Gas Emissions

Greenhouse gas emissions are estimated for on-site and off-site operational activity using CalEEMod. Greenhouse gas emissions from mobile sources, area sources and energy sources are shown in Table 25. CalEEMod annual GHG output calculations are provided in Appendix B.

**Table 25**
**Operational Greenhouse Gas Emissions**

| Emission Source | GHG Emissions ($MTCO_2e$)[1] |
|---|---|
| Mobile Source | 1,194.63 |
| Energy Source | 169.47 |
| Area Source | 0.00 |
| Water | 21.66 |
| Waste | 38.59 |
| Construction (30 year average) | 13.58 |
| **Total Annual Emissions** | **1,437.93** |
| SCAQMD Tier 3 Screening Threshold[2] | 3,000 |
| Exceed Tier 3 Threshold? | No |

[1] $MTCO_2e$ = metric tons of carbon dioxide equivalents

[2] Per South Coast Air Quality Management District (SCAQMD) Draft Guidance Document - Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008

The analysis compares the project's GHG emissions to the SCAQMD's Tier 3 approach, which limits GHG emissions to 3,000 $MTCO_2e$. As shown in Table 26, project GHG emissions are expected to be below the 3,000 $MTCO_2e$. **The project related long-term GHG impacts are considered less than significant.**

## 7.3 GHG Consistency with Applicable Plans

The project is consistent with the land use designation and zoning requirements for this site. Additionally, the project will comply with the mandatory requirements of Title 24 Part 1 of the California Building Standards Code and Title 24 Part 6 Building and Energy Efficiency Standards. The project would be consistent with all the applicable plans, policies and regulation for the purpose of reducing GHG gases. **The project's impact to GHG plans, policies and regulation is less than significant with mitigation.**

# 8.0 References

The following references were used in the preparing this analysis.


CalEEMod. California Emissions Estimator Model. Version 2016.3.2. Website: http://caleemod.com/.

California Air Pollution Control Officers Association. 2008. CEQA & Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. Website: www.capcoa.org/.

California Air Pollution Control Officers Association. 2010. Quantifying Greenhouse Gas Mitigation Measures. August 2010. Website: http://www.capcoa.org/documents.

California Air Resources Board. 2006. EMFAC2007 Mobile Source Emission Model. Website: www.arb.ca.gov/msei/onroad/latest_version.htm.

California Air Resources Board. 2007. Staff Report. California 1990 Greenhouse Gas Level and 2020 Emissions Limit. November 16, 2007. Website: www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf.

California Air Resources Board. 2017. Climate Change Scoping Plan Update. January 2017. Website: https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf

California Air Resources Board. 2010d. Greenhouse Gas Inventory – 2020 Forecast. Website: http://www.arb.ca.gov/cc/inventory/data/forecast.htm. Accessed July 2012.

California Air Resources Board. 2011d. Landfill Methane Control Measure. Website: http://arb.ca.gov/cc/landfills/landfills.htm. Accessed October 3, 2011.

California Air Resources Board. 2011e. Advanced Clean Cars. Website: http://www.arb.ca.gov/msprog/consumer_info/advanced_clean_cars/consumer_acc.htm. Accessed October 3, 2011.

California Air Resources Board. 2011f. Refrigerant Management Program Regulation for Non-Residential Refrigeration Systems. Website: http://www.arb.ca.gov/cc/reftrack/reftrack.htm. Accessed October 3, 2011.

City of Menifee. 2013. The Menifee General Plan, Public Review Draft. 2013 Accessed: September 2017

County of Riverside. 2015. County of Riverside Climate Action Plan. December 2015. Accessed: September 2017.

Federal Clean Air Act, U.S. Code Title 42, Chapter 85, § 7401 et seq.

Intergovernmental Panel on Climate Change. 2001. Climate Change 2001: The Scientific Basis. Website: http://www.grida.no/climate/ipcc_tar/wg1/pdf/WG1_TAR-FRONT.pdf. Accessed August 2012.

Intergovernmental Panel on Climate Change. 2007a. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, Website:

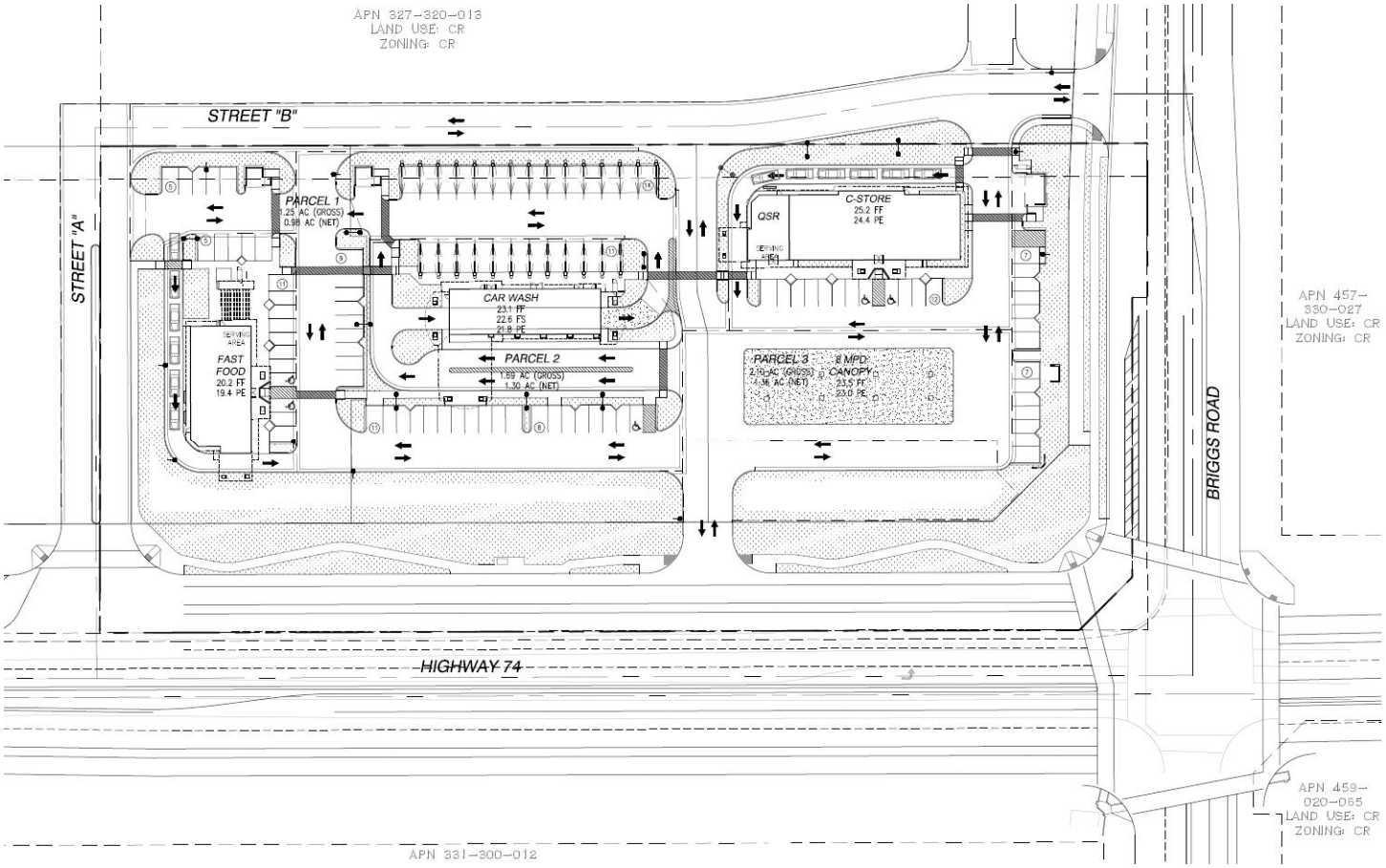
www.ipcc.ch/ipccreports/ar4-wg1.htm. Accessed April 22, 2011.
Intergovernmental Panel on Climate Change. 2007b. Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland. Accessed Aug 2012. Website: www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html
Moser et al. 2009. Moser, Susie, Guido Franco, Sarah Pittiglio, Wendy Chou, Dan Cayan. 2009. The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California. California Energy Commission, PIER Energy-Related Environmental Research Program. CEC-500-2008-071. Website: www.energy.ca.gov/2008publications/CEC-500-2008-071/CEC-500-2008-071.PDF. Accessed: August 2011.
South Coast Air Quality Management District. 2008c. Draft Guidance Document – Interim CEQA Greenhouse (GHG) Significance Threshold Document. Website: http://www.aqmd.gov/hb/2008/December/081231a.htm. (Attachment E) Accessed: August 2012
U.S Environmental Protection Agency 2010a, Final GHG Tailoring Rule, 40 CFR Parts 51, 52, 70, et al., May 2010.

# Exhibits

Exhibit A
# Location Map


N

Exhibit B
# Site Plan




N

# Appendices

# Appendix A

Daily Emissions Calculations Output
(CalEEMod)

# BRIGGS ROAD AT SR-74 GAS STATION AND RETAIL CENTER, City of Menifee

**Riverside-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 75.00 | Space | 4.76 | 30,000.00 | 0 |
| Fast Food Restaurant with Drive Thru | 4.37 | 1000sqft | 0.10 | 4,370.00 | 0 |
| Automobile Care Center | 3.00 | 1000sqft | 0.07 | 3,000.00 | 0 |
| Convenience Market With Gas Pumps | 16.00 | Pump | 0.11 | 4,967.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2019 |
| **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 - Land use assumptions based on site plan for CUP 2017-226

Construction Phase -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - 5,200 cubic yards of material export

Vehicle Trips - Ite Trip Generation Rates 10th Edition, 2017; Ite (948) Automated Car Wash rates used for Auto Care Center;
C-C trips rates based on market survey.

Water And Wastewater - Water use assumptions based on International Car Wash Association Water Use in the Professional Car Wash Industry, 2002

Solid Waste - CalEEMod does not calculate waste for convenience market/gas station based on pumps metric. 4,967 sf convenience market generates 14.94 tons/year per CalEEMod default assumptions. Solid waste added to auto care center. (14.94 + 11.46 = 26.40).

Sequestration -

Construction Off-road Equipment Mitigation - Project is required to comply SCAQMD rule 403 regarding fugitive dust control.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix - Fleet Mix adjusted per recommendations from City of Menifee staff.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 25 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblFleetMix | HHD | 0.07 | 1.0000e-003 |
| tblFleetMix | HHD | 0.07 | 1.0000e-003 |

| | | | |
|---|---|---|---|
| tblFleetMix | HHD | 0.07 | 1.0000e-003 |
| tblFleetMix | LDA | 0.53 | 0.80 |
| tblFleetMix | LDA | 0.53 | 0.80 |
| tblFleetMix | LDA | 0.53 | 0.80 |
| tblFleetMix | LDT1 | 0.04 | 0.08 |
| tblFleetMix | LDT1 | 0.04 | 0.08 |
| tblFleetMix | LDT1 | 0.04 | 0.08 |
| tblFleetMix | LDT2 | 0.18 | 0.06 |
| tblFleetMix | LDT2 | 0.18 | 0.06 |
| tblFleetMix | LDT2 | 0.18 | 0.06 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD2 | 5.5610e-003 | 0.00 |
| tblFleetMix | LHD2 | 5.5610e-003 | 0.00 |
| tblFleetMix | LHD2 | 5.5610e-003 | 0.00 |
| tblFleetMix | MCY | 4.6770e-003 | 0.01 |
| tblFleetMix | MCY | 4.6770e-003 | 0.01 |
| tblFleetMix | MCY | 4.6770e-003 | 0.01 |
| tblFleetMix | MDV | 0.13 | 0.04 |
| tblFleetMix | MDV | 0.13 | 0.04 |
| tblFleetMix | MDV | 0.13 | 0.04 |
| tblFleetMix | MH | 1.2110e-003 | 0.00 |
| tblFleetMix | MH | 1.2110e-003 | 0.00 |
| tblFleetMix | MH | 1.2110e-003 | 0.00 |
| tblFleetMix | MHD | 0.02 | 9.0000e-003 |
| tblFleetMix | MHD | 0.02 | 9.0000e-003 |

| | | | |
|---|---|---|---|
| tblFleetMix | MHD | 0.02 | 9.0000e-003 |
| tblFleetMix | OBUS | 1.3450e-003 | 0.00 |
| tblFleetMix | OBUS | 1.3450e-003 | 0.00 |
| tblFleetMix | OBUS | 1.3450e-003 | 0.00 |
| tblFleetMix | SBUS | 9.7400e-004 | 0.00 |
| tblFleetMix | SBUS | 9.7400e-004 | 0.00 |
| tblFleetMix | SBUS | 9.7400e-004 | 0.00 |
| tblFleetMix | UBUS | 1.2470e-003 | 0.00 |
| tblFleetMix | UBUS | 1.2470e-003 | 0.00 |
| tblFleetMix | UBUS | 1.2470e-003 | 0.00 |
| tblLandUse | LandUseSquareFeet | 2,258.80 | 4,967.00 |
| tblLandUse | LotAcreage | 0.68 | 4.76 |
| tblLandUse | LotAcreage | 0.05 | 0.11 |
| tblSequestration | NumberOfNewTrees | 0.00 | 50.00 |
| tblSolidWaste | SolidWasteGenerationRate | 11.46 | 26.40 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 650.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | ST_TR | 23.72 | 304.00 |
| tblVehicleTrips | ST_TR | 204.47 | 291.67 |
| tblVehicleTrips | ST_TR | 722.03 | 616.12 |
| tblVehicleTrips | SU_TR | 11.88 | 304.00 |
| tblVehicleTrips | SU_TR | 166.88 | 291.67 |
| tblVehicleTrips | SU_TR | 542.72 | 472.58 |
| tblVehicleTrips | WD_TR | 23.72 | 142.00 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | WD_TR | 542.60 | 230.52 |
| tblVehicleTrips | WD_TR | 496.12 | 470.95 |
| tblWater | IndoorWaterUseRate | 282,243.32 | 0.00 |
| tblWater | OutdoorWaterUseRate | 172,987.84 | 3,587,860.00 |

## 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 | | | | | |
| 2018 | 4.6711 | 48.2677 | 23.3665 | 0.0567 | 18.2675 | 2.5782 | 20.8456 | 9.9840 | 2.3719 | 12.3560 | 0.0000 | 5,840.3229 | 5,840.3229 | 1.1993 | 0.0000 | 5,867.9354 |
| 2019 | 6.4185 | 21.9331 | 18.0683 | 0.0307 | 0.2349 | 1.2971 | 1.5319 | 0.0633 | 1.2196 | 1.2829 | 0.0000 | 2,979.0708 | 2,979.0708 | 0.7189 | 0.0000 | 2,995.3778 |
| **Maximum** | **6.4185** | **48.2677** | **23.3665** | **0.0567** | **18.2675** | **2.5782** | **20.8456** | **9.9840** | **2.3719** | **12.3560** | **0.0000** | **5,840.3229** | **5,840.3229** | **1.1993** | **0.0000** | **5,867.9354** |

### 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 | | | | | |
| 2018 | 4.6711 | 48.2677 | 23.3665 | 0.0567 | 7.1115 | 2.5782 | 9.6897 | 3.8519 | 2.3719 | 6.2238 | 0.0000 | 5,840.3229 | 5,840.3229 | 1.1993 | 0.0000 | 5,867.9354 |
| 2019 | 6.4185 | 21.9331 | 18.0683 | 0.0307 | 0.2349 | 1.2971 | 1.5319 | 0.0633 | 1.2196 | 1.2829 | 0.0000 | 2,979.0708 | 2,979.0708 | 0.7189 | 0.0000 | 2,995.3778 |
| **Maximum** | **6.4185** | **48.2677** | **23.3665** | **0.0567** | **7.1115** | **2.5782** | **9.6897** | **3.8519** | **2.3719** | **6.2238** | **0.0000** | **5,840.3229** | **5,840.3229** | **1.1993** | **0.0000** | **5,867.9354** |

| | ROG | NOx | 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** | **60.29** | **0.00** | **49.85** | **61.03** | **0.00** | **44.96** | **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 | 0.2895 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |
| Energy | 0.0385 | 0.3501 | 0.2941 | 2.1000e-003 | | 0.0266 | 0.0266 | | 0.0266 | 0.0266 | | 420.1223 | 420.1223 | 8.0500e-003 | 7.7000e-003 | 422.6189 |
| Mobile | 13.9760 | 8.0966 | 62.4058 | 0.1000 | 8.9626 | 0.1116 | 9.0741 | 2.3785 | 0.1035 | 2.4820 | | 9,934.2762 | 9,934.2762 | 0.5040 | | 9,946.8758 |
| **Total** | **14.3040** | **8.4468** | **62.7101** | **0.1021** | **8.9626** | **0.1382** | **9.1008** | **2.3785** | **0.1302** | **2.5087** | | **10,354.4200** | **10,354.4200** | **0.5121** | **7.7000e-003** | **10,369.5177** |

### 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 | 0.2895 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |
| Energy | 0.0356 | 0.3236 | 0.2718 | 1.9400e-003 | | 0.0246 | 0.0246 | | 0.0246 | 0.0246 | | 388.2904 | 388.2904 | 7.4400e-003 | 7.1200e-003 | 390.5978 |
| Mobile | 13.9343 | 7.9879 | 61.1843 | 0.0967 | 8.6104 | 0.1090 | 8.7194 | 2.2850 | 0.1011 | 2.3862 | | 9,598.1323 | 9,598.1323 | 0.4926 | | 9,610.4463 |
| **Total** | **14.2594** | **8.3116** | **61.4662** | **0.0986** | **8.6104** | **0.1336** | **8.7440** | **2.2850** | **0.1258** | **2.4108** | | **9,986.4442** | **9,986.4442** | **0.5001** | **7.1200e-003** | **10,001.0670** |

| | ROG | NOx | 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** | **0.31** | **1.60** | **1.98** | **3.46** | **3.93** | **3.34** | **3.92** | **3.93** | **3.41** | **3.90** | **0.00** | **3.55** | **3.55** | **2.35** | **7.53** | **3.55** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 10/1/2018 | 10/12/2018 | 5 | 10 | |
| 2 | Grading | Grading | 10/13/2018 | 11/9/2018 | 5 | 20 | |
| 3 | Building Construction | Building Construction | 11/10/2018 | 9/27/2019 | 5 | 230 | |
| 4 | Paving | Paving | 9/28/2019 | 10/25/2019 | 5 | 20 | |
| 5 | Architectural Coating | Architectural Coating | 10/26/2019 | 11/22/2019 | 5 | 20 | |

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

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 4.76**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 18,506; Non-Residential Outdoor: 6,169; Striped Parking Area: 1,800 (Architectural Coating – sqft)**

**OffRoad Equipment**

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

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 6 | 15.00 | 0.00 | 650.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 17.00 | 7.00 | 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 | 3.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

### 3.2 Site Preparation - 2018

**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 | 4.5627 | 48.1988 | 22.4763 | 0.0380 | | 2.5769 | 2.5769 | | 2.3708 | 2.3708 | | 3,831.6239 | 3,831.6239 | 1.1928 | | 3,861.4448 |
| **Total** | **4.5627** | **48.1988** | **22.4763** | **0.0380** | **18.0663** | **2.5769** | **20.6432** | **9.9307** | **2.3708** | **12.3014** | | **3,831.6239** | **3,831.6239** | **1.1928** | | **3,861.4448** |

## 3.2 Site Preparation - 2018

### 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 | 0.1084 | 0.0689 | 0.8902 | 2.1200e-003 | 0.2012 | 1.2600e-003 | 0.2025 | 0.0534 | 1.1600e-003 | 0.0545 | | 211.1889 | 211.1889 | 6.4300e-003 | | 211.3496 |
| **Total** | **0.1084** | **0.0689** | **0.8902** | **2.1200e-003** | **0.2012** | **1.2600e-003** | **0.2025** | **0.0534** | **1.1600e-003** | **0.0545** | | **211.1889** | **211.1889** | **6.4300e-003** | | **211.3496** |

### 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 | | | | | 6.9103 | 0.0000 | 6.9103 | 3.7985 | 0.0000 | 3.7985 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.5627 | 48.1988 | 22.4763 | 0.0380 | | 2.5769 | 2.5769 | | 2.3708 | 2.3708 | 0.0000 | 3,831.6239 | 3,831.6239 | 1.1928 | | 3,861.4448 |
| **Total** | **4.5627** | **48.1988** | **22.4763** | **0.0380** | **6.9103** | **2.5769** | **9.4873** | **3.7985** | **2.3708** | **6.1693** | **0.0000** | **3,831.6239** | **3,831.6239** | **1.1928** | | **3,861.4448** |

## 3.2 Site Preparation - 2018

**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 | 0.1084 | 0.0689 | 0.8902 | 2.1200e-003 | 0.2012 | 1.2600e-003 | 0.2025 | 0.0534 | 1.1600e-003 | 0.0545 | | 211.1889 | 211.1889 | 6.4300e-003 | | 211.3496 |
| **Total** | **0.1084** | **0.0689** | **0.8902** | **2.1200e-003** | **0.2012** | **1.2600e-003** | **0.2025** | **0.0534** | **1.1600e-003** | **0.0545** | | **211.1889** | **211.1889** | **6.4300e-003** | | **211.3496** |

## 3.3 Grading - 2018

**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 | | | | | 6.5523 | 0.0000 | 6.5523 | 3.3675 | 0.0000 | 3.3675 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.7733 | 30.6725 | 16.5770 | 0.0297 | | 1.5513 | 1.5513 | | 1.4272 | 1.4272 | | 2,988.0216 | 2,988.0216 | 0.9302 | | 3,011.2769 |
| **Total** | **2.7733** | **30.6725** | **16.5770** | **0.0297** | **6.5523** | **1.5513** | **8.1037** | **3.3675** | **1.4272** | **4.7947** | | **2,988.0216** | **2,988.0216** | **0.9302** | | **3,011.2769** |

## 3.3 Grading - 2018

### 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 | 0.1917 | 8.8454 | 1.0262 | 0.0253 | 0.5687 | 0.0332 | 0.6019 | 0.1559 | 0.0318 | 0.1877 | | 2,676.3106 | 2,676.3106 | 0.1689 | | 2,680.5339 |
| 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 | 0.0903 | 0.0574 | 0.7419 | 1.7700e-003 | 0.1677 | 1.0500e-003 | 0.1687 | 0.0445 | 9.7000e-004 | 0.0454 | | 175.9907 | 175.9907 | 5.3600e-003 | | 176.1247 |
| **Total** | **0.2820** | **8.9028** | **1.7681** | **0.0270** | **0.7363** | **0.0343** | **0.7706** | **0.2004** | **0.0327** | **0.2331** | | **2,852.3013** | **2,852.3013** | **0.1743** | | **2,856.6585** |

### 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 | | | | | 2.5063 | 0.0000 | 2.5063 | 1.2881 | 0.0000 | 1.2881 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.7733 | 30.6725 | 16.5770 | 0.0297 | | 1.5513 | 1.5513 | | 1.4272 | 1.4272 | 0.0000 | 2,988.0216 | 2,988.0216 | 0.9302 | | 3,011.2769 |
| **Total** | **2.7733** | **30.6725** | **16.5770** | **0.0297** | **2.5063** | **1.5513** | **4.0576** | **1.2881** | **1.4272** | **2.7153** | **0.0000** | **2,988.0216** | **2,988.0216** | **0.9302** | | **3,011.2769** |

## 3.3 Grading - 2018

**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 | 0.1917 | 8.8454 | 1.0262 | 0.0253 | 0.5687 | 0.0332 | 0.6019 | 0.1559 | 0.0318 | 0.1877 | | 2,676.3106 | 2,676.3106 | 0.1689 | | 2,680.5339 |
| 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 | 0.0903 | 0.0574 | 0.7419 | 1.7700e-003 | 0.1677 | 1.0500e-003 | 0.1687 | 0.0445 | 9.7000e-004 | 0.0454 | | 175.9907 | 175.9907 | 5.3600e-003 | | 176.1247 |
| **Total** | **0.2820** | **8.9028** | **1.7681** | **0.0270** | **0.7363** | **0.0343** | **0.7706** | **0.2004** | **0.0327** | **0.2331** | | **2,852.3013** | **2,852.3013** | **0.1743** | | **2,856.6585** |

## 3.4 Building Construction - 2018

**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 | 2.6795 | 23.3900 | 17.5804 | 0.0269 | | 1.4999 | 1.4999 | | 1.4099 | 1.4099 | | 2,620.9351 | 2,620.9351 | 0.6421 | | 2,636.9883 |
| **Total** | **2.6795** | **23.3900** | **17.5804** | **0.0269** | | **1.4999** | **1.4999** | | **1.4099** | **1.4099** | | **2,620.9351** | **2,620.9351** | **0.6421** | | **2,636.9883** |

## 3.4 Building Construction - 2018

### 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 | 0.0258 | 0.8505 | 0.1645 | 1.8500e-003 | 0.0448 | 7.1300e-003 | 0.0520 | 0.0129 | 6.8200e-003 | 0.0197 | | 195.3922 | 195.3922 | 0.0161 | | 195.7956 |
| Worker | 0.1023 | 0.0651 | 0.8408 | 2.0000e-003 | 0.1900 | 1.1900e-003 | 0.1912 | 0.0504 | 1.0900e-003 | 0.0515 | | 199.4561 | 199.4561 | 6.0700e-003 | | 199.6080 |
| **Total** | **0.1281** | **0.9156** | **1.0053** | **3.8500e-003** | **0.2349** | **8.3200e-003** | **0.2432** | **0.0633** | **7.9100e-003** | **0.0712** | | **394.8483** | **394.8483** | **0.0222** | | **395.4036** |

### 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 | 2.6795 | 23.3900 | 17.5804 | 0.0269 | | 1.4999 | 1.4999 | | 1.4099 | 1.4099 | 0.0000 | 2,620.9351 | 2,620.9351 | 0.6421 | | 2,636.9883 |
| **Total** | **2.6795** | **23.3900** | **17.5804** | **0.0269** | | **1.4999** | **1.4999** | | **1.4099** | **1.4099** | **0.0000** | **2,620.9351** | **2,620.9351** | **0.6421** | | **2,636.9883** |

## 3.4 Building Construction - 2018

**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 | 0.0258 | 0.8505 | 0.1645 | 1.8500e-003 | 0.0448 | 7.1300e-003 | 0.0520 | 0.0129 | 6.8200e-003 | 0.0197 | | 195.3922 | 195.3922 | 0.0161 | | 195.7956 |
| Worker | 0.1023 | 0.0651 | 0.8408 | 2.0000e-003 | 0.1900 | 1.1900e-003 | 0.1912 | 0.0504 | 1.0900e-003 | 0.0515 | | 199.4561 | 199.4561 | 6.0700e-003 | | 199.6080 |
| **Total** | **0.1281** | **0.9156** | **1.0053** | **3.8500e-003** | **0.2349** | **8.3200e-003** | **0.2432** | **0.0633** | **7.9100e-003** | **0.0712** | | **394.8483** | **394.8483** | **0.0222** | | **395.4036** |

## 3.4 Building Construction - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.3612 | 21.0788 | 17.1638 | 0.0269 | | 1.2899 | 1.2899 | | 1.2127 | 1.2127 | | 2,591.5802 | 2,591.5802 | 0.6313 | | 2,607.3635 |
| **Total** | **2.3612** | **21.0788** | **17.1638** | **0.0269** | | **1.2899** | **1.2899** | | **1.2127** | **1.2127** | | **2,591.5802** | **2,591.5802** | **0.6313** | | **2,607.3635** |

## 3.4 Building Construction - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 0.0233 | 0.7968 | 0.1493 | 1.8400e-003 | 0.0448 | 6.0500e-003 | 0.0509 | 0.0129 | 5.7900e-003 | 0.0187 | | 194.1118 | 194.1118 | 0.0155 | | 194.5001 |
| Worker | 0.0936 | 0.0574 | 0.7552 | 1.9400e-003 | 0.1900 | 1.1700e-003 | 0.1912 | 0.0504 | 1.0800e-003 | 0.0515 | | 193.3788 | 193.3788 | 5.4100e-003 | | 193.5141 |
| **Total** | **0.1169** | **0.8543** | **0.9046** | **3.7800e-003** | **0.2349** | **7.2200e-003** | **0.2421** | **0.0633** | **6.8700e-003** | **0.0702** | | **387.4906** | **387.4906** | **0.0209** | | **388.0143** |

### 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 | 2.3612 | 21.0788 | 17.1638 | 0.0269 | | 1.2899 | 1.2899 | | 1.2127 | 1.2127 | 0.0000 | 2,591.5802 | 2,591.5802 | 0.6313 | | 2,607.3635 |
| **Total** | **2.3612** | **21.0788** | **17.1638** | **0.0269** | | **1.2899** | **1.2899** | | **1.2127** | **1.2127** | **0.0000** | **2,591.5802** | **2,591.5802** | **0.6313** | | **2,607.3635** |

## 3.4 Building Construction - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 0.0233 | 0.7968 | 0.1493 | 1.8400e-003 | 0.0448 | 6.0500e-003 | 0.0509 | 0.0129 | 5.7900e-003 | 0.0187 | | 194.1118 | 194.1118 | 0.0155 | | 194.5001 |
| Worker | 0.0936 | 0.0574 | 0.7552 | 1.9400e-003 | 0.1900 | 1.1700e-003 | 0.1912 | 0.0504 | 1.0800e-003 | 0.0515 | | 193.3788 | 193.3788 | 5.4100e-003 | | 193.5141 |
| **Total** | **0.1169** | **0.8543** | **0.9046** | **3.7800e-003** | **0.2349** | **7.2200e-003** | **0.2421** | **0.0633** | **6.8700e-003** | **0.0702** | | **387.4906** | **387.4906** | **0.0209** | | **388.0143** |

## 3.5 Paving - 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 | 1.4544 | 15.2441 | 14.6648 | 0.0228 | | 0.8246 | 0.8246 | | 0.7586 | 0.7586 | | 2,257.0025 | 2,257.0025 | 0.7141 | | 2,274.8548 |
| Paving | 0.6236 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.0780** | **15.2441** | **14.6648** | **0.0228** | | **0.8246** | **0.8246** | | **0.7586** | **0.7586** | | **2,257.0025** | **2,257.0025** | **0.7141** | | **2,274.8548** |

## 3.5 Paving - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 1.4544 | 15.2441 | 14.6648 | 0.0228 | | 0.8246 | 0.8246 | | 0.7586 | 0.7586 | 0.0000 | 2,257.0025 | 2,257.0025 | 0.7141 | | 2,274.8548 |
| Paving | 0.6236 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.0780** | **15.2441** | **14.6648** | **0.0228** | | **0.8246** | **0.8246** | | **0.7586** | **0.7586** | **0.0000** | **2,257.0025** | **2,257.0025** | **0.7141** | | **2,274.8548** |

## 3.5 Paving - 2019

**Mitigated Construction Off-Site**

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

## 3.6 Architectural Coating - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 6.1356 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2664 | 1.8354 | 1.8413 | 2.9700e-003 | | 0.1288 | 0.1288 | | 0.1288 | 0.1288 | | 281.4481 | 281.4481 | 0.0238 | | 282.0423 |
| **Total** | **6.4020** | **1.8354** | **1.8413** | **2.9700e-003** | | **0.1288** | **0.1288** | | **0.1288** | **0.1288** | | **281.4481** | **281.4481** | **0.0238** | | **282.0423** |

## 3.6 Architectural Coating - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 0.0165 | 0.0101 | 0.1333 | 3.4000e-004 | 0.0335 | 2.1000e-004 | 0.0337 | 8.8900e-003 | 1.9000e-004 | 9.0800e-003 | | 34.1257 | 34.1257 | 9.6000e-004 | | 34.1496 |
| **Total** | **0.0165** | **0.0101** | **0.1333** | **3.4000e-004** | **0.0335** | **2.1000e-004** | **0.0337** | **8.8900e-003** | **1.9000e-004** | **9.0800e-003** | | **34.1257** | **34.1257** | **9.6000e-004** | | **34.1496** |

### 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 | 6.1356 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2664 | 1.8354 | 1.8413 | 2.9700e-003 | | 0.1288 | 0.1288 | | 0.1288 | 0.1288 | 0.0000 | 281.4481 | 281.4481 | 0.0238 | | 282.0423 |
| **Total** | **6.4020** | **1.8354** | **1.8413** | **2.9700e-003** | | **0.1288** | **0.1288** | | **0.1288** | **0.1288** | **0.0000** | **281.4481** | **281.4481** | **0.0238** | | **282.0423** |

### 3.6 Architectural Coating - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 0.0165 | 0.0101 | 0.1333 | 3.4000e-004 | 0.0335 | 2.1000e-004 | 0.0337 | 8.8900e-003 | 1.9000e-004 | 9.0800e-003 | | 34.1257 | 34.1257 | 9.6000e-004 | | 34.1496 |
| **Total** | **0.0165** | **0.0101** | **0.1333** | **3.4000e-004** | **0.0335** | **2.1000e-004** | **0.0337** | **8.8900e-003** | **1.9000e-004** | **9.0800e-003** | | **34.1257** | **34.1257** | **9.6000e-004** | | **34.1496** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Implement Trip Reduction Program

| | ROG | NOx | CO | SO2 | Fugitive 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 | 13.9343 | 7.9879 | 61.1843 | 0.0967 | 8.6104 | 0.1090 | 8.7194 | 2.2850 | 0.1011 | 2.3862 | | 9,598.1323 | 9,598.1323 | 0.4926 | | 9,610.4463 |
| Unmitigated | 13.9760 | 8.0966 | 62.4058 | 0.1000 | 8.9626 | 0.1116 | 9.0741 | 2.3785 | 0.1035 | 2.4820 | | 9,934.2762 | 9,934.2762 | 0.5040 | | 9,946.8758 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Automobile Care Center | 426.00 | 912.00 | 912.00 | 610,098 | 583,160 |
| Convenience Market With Gas Pumps | 3,688.32 | 4,666.72 | 4666.72 | 1,387,211 | 1,334,957 |
| Fast Food Restaurant with Drive Thru | 2,058.05 | 2,692.44 | 2065.17 | 1,333,095 | 1,282,431 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 6,172.37 | 8,271.16 | 7,643.89 | 3,330,404 | 3,200,549 |

## 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 |
| Automobile Care Center | 16.60 | 4.00 | 6.90 | 33.00 | 48.00 | 19.00 | 21 | 51 | 28 |
| Convenience Market With Gas | 16.60 | 4.00 | 6.90 | 0.80 | 80.20 | 19.00 | 14 | 21 | 65 |
| Fast Food Restaurant with Drive | 16.60 | 4.00 | 6.90 | 2.20 | 78.80 | 19.00 | 29 | 21 | 50 |
| Parking Lot | 16.60 | 4.00 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Automobile Care Center | 0.800000 | 0.080000 | 0.060000 | 0.040000 | 0.000000 | 0.000000 | 0.009000 | 0.001000 | 0.000000 | 0.000000 | 0.010000 | 0.000000 | 0.000000 |
| Convenience Market With Gas Pumps | 0.800000 | 0.080000 | 0.060000 | 0.040000 | 0.000000 | 0.000000 | 0.009000 | 0.001000 | 0.000000 | 0.000000 | 0.010000 | 0.000000 | 0.000000 |
| Fast Food Restaurant with Drive Thru | 0.800000 | 0.080000 | 0.060000 | 0.040000 | 0.000000 | 0.000000 | 0.009000 | 0.001000 | 0.000000 | 0.000000 | 0.010000 | 0.000000 | 0.000000 |
| Parking Lot | 0.533383 | 0.039495 | 0.183627 | 0.126156 | 0.018688 | 0.005561 | 0.017029 | 0.066607 | 0.001345 | 0.001247 | 0.004677 | 0.000974 | 0.001211 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

| | ROG | NOx | CO | SO2 | Fugitive 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 | 0.0356 | 0.3236 | 0.2718 | 1.9400e-003 | | 0.0246 | 0.0246 | | 0.0246 | 0.0246 | | 388.2904 | 388.2904 | 7.4400e-003 | 7.1200e-003 | 390.5978 |
| NaturalGas Unmitigated | 0.0385 | 0.3501 | 0.2941 | 2.1000e-003 | | 0.0266 | 0.0266 | | 0.0266 | 0.0266 | | 420.1223 | 420.1223 | 8.0500e-003 | 7.7000e-003 | 422.6189 |

## 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 | | | | | |
| Automobile Care Center | 267.041 | 2.8800e-003 | 0.0262 | 0.0220 | 1.6000e-004 | | 1.9900e-003 | 1.9900e-003 | | 1.9900e-003 | 1.9900e-003 | | 31.4166 | 31.4166 | 6.0000e-004 | 5.8000e-004 | 31.6033 |
| Convenience Market With Gas Pumps | 30.2102 | 3.3000e-004 | 2.9600e-003 | 2.4900e-003 | 2.0000e-005 | | 2.3000e-004 | 2.3000e-004 | | 2.3000e-004 | 2.3000e-004 | | 3.5542 | 3.5542 | 7.0000e-005 | 7.0000e-005 | 3.5753 |
| Fast Food Restaurant with Drive Thru | 3273.79 | 0.0353 | 0.3210 | 0.2696 | 1.9300e-003 | | 0.0244 | 0.0244 | | 0.0244 | 0.0244 | | 385.1516 | 385.1516 | 7.3800e-003 | 7.0600e-003 | 387.4404 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0385** | **0.3501** | **0.2941** | **2.1100e-003** | | **0.0266** | **0.0266** | | **0.0266** | **0.0266** | | **420.1223** | **420.1223** | **8.0500e-003** | **7.7100e-003** | **422.6189** |

## 5.2 Energy by Land Use - NaturalGas

**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 | | | | | |
| Automobile Care Center | 0.235479 | 2.5400e-003 | 0.0231 | 0.0194 | 1.4000e-004 | | 1.7500e-003 | 1.7500e-003 | | 1.7500e-003 | 1.7500e-003 | | 27.7035 | 27.7035 | 5.3000e-004 | 5.1000e-004 | 27.8681 |
| Convenience Market With Gas Pumps | 0.0236783 | 2.6000e-004 | 2.3200e-003 | 1.9500e-003 | 1.0000e-005 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | | 2.7857 | 2.7857 | 5.0000e-005 | 5.0000e-005 | 2.8022 |
| Fast Food Restaurant with Drive Thru | 3.04131 | 0.0328 | 0.2982 | 0.2505 | 1.7900e-003 | | 0.0227 | 0.0227 | | 0.0227 | 0.0227 | | 357.8012 | 357.8012 | 6.8600e-003 | 6.5600e-003 | 359.9275 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0356** | **0.3236** | **0.2718** | **1.9400e-003** | | **0.0246** | **0.0246** | | **0.0246** | **0.0246** | | **388.2904** | **388.2904** | **7.4400e-003** | **7.1200e-003** | **390.5978** |

# 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 | 0.2895 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |
| Unmitigated | 0.2895 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |

## 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 | 0.0336 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.2549 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 9.6000e-004 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |
| **Total** | **0.2895** | **9.0000e-005** | **0.0101** | **0.0000** | | **4.0000e-005** | **4.0000e-005** | | **4.0000e-005** | **4.0000e-005** | | **0.0215** | **0.0215** | **6.0000e-005** | | **0.0230** |

### 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0336 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.2549 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 9.6000e-004 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |
| **Total** | **0.2895** | **9.0000e-005** | **0.0101** | **0.0000** | | **4.0000e-005** | **4.0000e-005** | | **4.0000e-005** | **4.0000e-005** | | **0.0215** | **0.0215** | **6.0000e-005** | | **0.0230** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 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

# BRIGGS ROAD AT SR-74 GAS STATION AND RETAIL CENTER, City of Menifee

**Riverside-South Coast County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 75.00 | Space | 4.76 | 30,000.00 | 0 |
| Fast Food Restaurant with Drive Thru | 4.37 | 1000sqft | 0.10 | 4,370.00 | 0 |
| Automobile Care Center | 3.00 | 1000sqft | 0.07 | 3,000.00 | 0 |
| Convenience Market With Gas Pumps | 16.00 | Pump | 0.11 | 4,967.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2019 |
| **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 - Land use assumptions based on site plan for CUP 2017-226

Construction Phase -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - 5,200 cubic yards of material export

Vehicle Trips - Ite Trip Generation Rates 10th Edition, 2017; Ite (948) Automated Car Wash rates used for Auto Care Center;
C-C trips rates based on market survey.

Water And Wastewater - Water use assumptions based on International Car Wash Association Water Use in the Professional Car Wash Industry, 2002

Solid Waste - CalEEMod does not calculate waste for convenience market/gas station based on pumps metric. 4,967 sf convenience market generates 14.94 tons/year per CalEEMod default assumptions. Solid waste added to auto care center. (14.94 + 11.46 = 26.40).

Sequestration -

Construction Off-road Equipment Mitigation - Project is required to comply SCAQMD rule 403 regarding fugitive dust control.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix - Fleet Mix adjusted per recommendations from City of Menifee staff.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 25 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblFleetMix | HHD | 0.07 | 1.0000e-003 |
| tblFleetMix | HHD | 0.07 | 1.0000e-003 |

| | | | |
|---|---|---|---|
| tblFleetMix | HHD | 0.07 | 1.0000e-003 |
| tblFleetMix | LDA | 0.53 | 0.80 |
| tblFleetMix | LDA | 0.53 | 0.80 |
| tblFleetMix | LDA | 0.53 | 0.80 |
| tblFleetMix | LDT1 | 0.04 | 0.08 |
| tblFleetMix | LDT1 | 0.04 | 0.08 |
| tblFleetMix | LDT1 | 0.04 | 0.08 |
| tblFleetMix | LDT2 | 0.18 | 0.06 |
| tblFleetMix | LDT2 | 0.18 | 0.06 |
| tblFleetMix | LDT2 | 0.18 | 0.06 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD2 | 5.5610e-003 | 0.00 |
| tblFleetMix | LHD2 | 5.5610e-003 | 0.00 |
| tblFleetMix | LHD2 | 5.5610e-003 | 0.00 |
| tblFleetMix | MCY | 4.6770e-003 | 0.01 |
| tblFleetMix | MCY | 4.6770e-003 | 0.01 |
| tblFleetMix | MCY | 4.6770e-003 | 0.01 |
| tblFleetMix | MDV | 0.13 | 0.04 |
| tblFleetMix | MDV | 0.13 | 0.04 |
| tblFleetMix | MDV | 0.13 | 0.04 |
| tblFleetMix | MH | 1.2110e-003 | 0.00 |
| tblFleetMix | MH | 1.2110e-003 | 0.00 |
| tblFleetMix | MH | 1.2110e-003 | 0.00 |
| tblFleetMix | MHD | 0.02 | 9.0000e-003 |
| tblFleetMix | MHD | 0.02 | 9.0000e-003 |

| | | | |
|---|---|---|---|
| tblFleetMix | MHD | 0.02 | 9.0000e-003 |
| tblFleetMix | OBUS | 1.3450e-003 | 0.00 |
| tblFleetMix | OBUS | 1.3450e-003 | 0.00 |
| tblFleetMix | OBUS | 1.3450e-003 | 0.00 |
| tblFleetMix | SBUS | 9.7400e-004 | 0.00 |
| tblFleetMix | SBUS | 9.7400e-004 | 0.00 |
| tblFleetMix | SBUS | 9.7400e-004 | 0.00 |
| tblFleetMix | UBUS | 1.2470e-003 | 0.00 |
| tblFleetMix | UBUS | 1.2470e-003 | 0.00 |
| tblFleetMix | UBUS | 1.2470e-003 | 0.00 |
| tblLandUse | LandUseSquareFeet | 2,258.80 | 4,967.00 |
| tblLandUse | LotAcreage | 0.68 | 4.76 |
| tblLandUse | LotAcreage | 0.05 | 0.11 |
| tblSequestration | NumberOfNewTrees | 0.00 | 50.00 |
| tblSolidWaste | SolidWasteGenerationRate | 11.46 | 26.40 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 650.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | ST_TR | 23.72 | 304.00 |
| tblVehicleTrips | ST_TR | 204.47 | 291.67 |
| tblVehicleTrips | ST_TR | 722.03 | 616.12 |
| tblVehicleTrips | SU_TR | 11.88 | 304.00 |
| tblVehicleTrips | SU_TR | 166.88 | 291.67 |
| tblVehicleTrips | SU_TR | 542.72 | 472.58 |
| tblVehicleTrips | WD_TR | 23.72 | 142.00 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | WD_TR | 542.60 | 230.52 |
| tblVehicleTrips | WD_TR | 496.12 | 470.95 |
| tblWater | IndoorWaterUseRate | 282,243.32 | 0.00 |
| tblWater | OutdoorWaterUseRate | 172,987.84 | 3,587,860.00 |

## 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 | | | | | |
| 2018 | 4.6685 | 48.2702 | 23.1999 | 0.0559 | 18.2675 | 2.5782 | 20.8456 | 9.9840 | 2.3719 | 12.3560 | 0.0000 | 5,756.2553 | 5,756.2553 | 1.1985 | 0.0000 | 5,784.2499 |
| 2019 | 6.4182 | 21.9333 | 17.9495 | 0.0304 | 0.2349 | 1.2972 | 1.5320 | 0.0633 | 1.2197 | 1.2830 | 0.0000 | 2,951.9251 | 2,951.9251 | 0.7182 | 0.0000 | 2,968.2575 |
| **Maximum** | **6.4182** | **48.2702** | **23.1999** | **0.0559** | **18.2675** | **2.5782** | **20.8456** | **9.9840** | **2.3719** | **12.3560** | **0.0000** | **5,756.2553** | **5,756.2553** | **1.1985** | **0.0000** | **5,784.2499** |

### 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 | | | | | |
| 2018 | 4.6685 | 48.2702 | 23.1999 | 0.0559 | 7.1115 | 2.5782 | 9.6897 | 3.8519 | 2.3719 | 6.2238 | 0.0000 | 5,756.2553 | 5,756.2553 | 1.1985 | 0.0000 | 5,784.2499 |
| 2019 | 6.4182 | 21.9333 | 17.9495 | 0.0304 | 0.2349 | 1.2972 | 1.5320 | 0.0633 | 1.2197 | 1.2830 | 0.0000 | 2,951.9251 | 2,951.9251 | 0.7182 | 0.0000 | 2,968.2575 |
| **Maximum** | **6.4182** | **48.2702** | **23.1999** | **0.0559** | **7.1115** | **2.5782** | **9.6897** | **3.8519** | **2.3719** | **6.2238** | **0.0000** | **5,756.2553** | **5,756.2553** | **1.1985** | **0.0000** | **5,784.2499** |

| | ROG | NOx | 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** | **60.29** | **0.00** | **49.85** | **61.03** | **0.00** | **44.96** | **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 | 0.2895 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |
| Energy | 0.0385 | 0.3501 | 0.2941 | 2.1000e-003 | | 0.0266 | 0.0266 | | 0.0266 | 0.0266 | | 420.1223 | 420.1223 | 8.0500e-003 | 7.7000e-003 | 422.6189 |
| Mobile | 10.7967 | 8.2629 | 60.8854 | 0.0912 | 8.9626 | 0.1121 | 9.0746 | 2.3785 | 0.1040 | 2.4825 | | 9,053.8929 | 9,053.8929 | 0.5106 | | 9,066.6574 |
| **Total** | **11.1247** | **8.6131** | **61.1896** | **0.0933** | **8.9626** | **0.1387** | **9.1013** | **2.3785** | **0.1307** | **2.5092** | | **9,474.0368** | **9,474.0368** | **0.5187** | **7.7000e-003** | **9,489.2993** |

### 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 | 0.2895 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |
| Energy | 0.0356 | 0.3236 | 0.2718 | 1.9400e-003 | | 0.0246 | 0.0246 | | 0.0246 | 0.0246 | | 388.2904 | 388.2904 | 7.4400e-003 | 7.1200e-003 | 390.5978 |
| Mobile | 10.7576 | 8.1490 | 59.9072 | 0.0882 | 8.6104 | 0.1095 | 8.7199 | 2.2850 | 0.1016 | 2.3866 | | 8,751.5374 | 8,751.5374 | 0.5002 | | 8,764.0431 |
| **Total** | **11.0826** | **8.4727** | **60.1892** | **0.0902** | **8.6104** | **0.1341** | **8.7445** | **2.2850** | **0.1262** | **2.4113** | | **9,139.8493** | **9,139.8493** | **0.5077** | **7.1200e-003** | **9,154.6639** |

| | ROG | NOx | 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** | **0.38** | **1.63** | **1.64** | **3.42** | **3.93** | **3.32** | **3.92** | **3.93** | **3.40** | **3.90** | **0.00** | **3.53** | **3.53** | **2.11** | **7.53** | **3.53** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 10/1/2018 | 10/12/2018 | 5 | 10 | |
| 2 | Grading | Grading | 10/13/2018 | 11/9/2018 | 5 | 20 | |
| 3 | Building Construction | Building Construction | 11/10/2018 | 9/27/2019 | 5 | 230 | |
| 4 | Paving | Paving | 9/28/2019 | 10/25/2019 | 5 | 20 | |
| 5 | Architectural Coating | Architectural Coating | 10/26/2019 | 11/22/2019 | 5 | 20 | |

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

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 4.76**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 18,506; Non-Residential Outdoor: 6,169; Striped Parking Area: 1,800 (Architectural Coating – sqft)**

**OffRoad Equipment**

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

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 6 | 15.00 | 0.00 | 650.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 17.00 | 7.00 | 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 | 3.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

### 3.2 Site Preparation - 2018

**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 | 4.5627 | 48.1988 | 22.4763 | 0.0380 | | 2.5769 | 2.5769 | | 2.3708 | 2.3708 | | 3,831.6239 | 3,831.6239 | 1.1928 | | 3,861.4448 |
| **Total** | **4.5627** | **48.1988** | **22.4763** | **0.0380** | **18.0663** | **2.5769** | **20.6432** | **9.9307** | **2.3708** | **12.3014** | | **3,831.6239** | **3,831.6239** | **1.1928** | | **3,861.4448** |

## 3.2 Site Preparation - 2018

### 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 | 0.1057 | 0.0714 | 0.7236 | 1.9000e-003 | 0.2012 | 1.2600e-003 | 0.2025 | 0.0534 | 1.1600e-003 | 0.0545 | | 189.4893 | 189.4893 | 5.6100e-003 | | 189.6294 |
| **Total** | **0.1057** | **0.0714** | **0.7236** | **1.9000e-003** | **0.2012** | **1.2600e-003** | **0.2025** | **0.0534** | **1.1600e-003** | **0.0545** | | **189.4893** | **189.4893** | **5.6100e-003** | | **189.6294** |

### 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 | | | | | 6.9103 | 0.0000 | 6.9103 | 3.7985 | 0.0000 | 3.7985 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.5627 | 48.1988 | 22.4763 | 0.0380 | | 2.5769 | 2.5769 | | 2.3708 | 2.3708 | 0.0000 | 3,831.6239 | 3,831.6239 | 1.1928 | | 3,861.4448 |
| **Total** | **4.5627** | **48.1988** | **22.4763** | **0.0380** | **6.9103** | **2.5769** | **9.4873** | **3.7985** | **2.3708** | **6.1693** | **0.0000** | **3,831.6239** | **3,831.6239** | **1.1928** | | **3,861.4448** |

## 3.2 Site Preparation - 2018

**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 | 0.1057 | 0.0714 | 0.7236 | 1.9000e-003 | 0.2012 | 1.2600e-003 | 0.2025 | 0.0534 | 1.1600e-003 | 0.0545 | | 189.4893 | 189.4893 | 5.6100e-003 | | 189.6294 |
| **Total** | **0.1057** | **0.0714** | **0.7236** | **1.9000e-003** | **0.2012** | **1.2600e-003** | **0.2025** | **0.0534** | **1.1600e-003** | **0.0545** | | **189.4893** | **189.4893** | **5.6100e-003** | | **189.6294** |

## 3.3 Grading - 2018

**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 | | | | | 6.5523 | 0.0000 | 6.5523 | 3.3675 | 0.0000 | 3.3675 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.7733 | 30.6725 | 16.5770 | 0.0297 | | 1.5513 | 1.5513 | | 1.4272 | 1.4272 | | 2,988.0216 | 2,988.0216 | 0.9302 | | 3,011.2769 |
| **Total** | **2.7733** | **30.6725** | **16.5770** | **0.0297** | **6.5523** | **1.5513** | **8.1037** | **3.3675** | **1.4272** | **4.7947** | | **2,988.0216** | **2,988.0216** | **0.9302** | | **3,011.2769** |

## 3.3 Grading - 2018

### 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 | 0.2016 | 8.9430 | 1.2096 | 0.0246 | 0.5687 | 0.0338 | 0.6025 | 0.1559 | 0.0324 | 0.1882 | | 2,610.3260 | 2,610.3260 | 0.1849 | | 2,614.9485 |
| 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 | 0.0881 | 0.0595 | 0.6030 | 1.5900e-003 | 0.1677 | 1.0500e-003 | 0.1687 | 0.0445 | 9.7000e-004 | 0.0454 | | 157.9077 | 157.9077 | 4.6700e-003 | | 158.0245 |
| **Total** | **0.2897** | **9.0025** | **1.8126** | **0.0262** | **0.7363** | **0.0349** | **0.7712** | **0.2004** | **0.0333** | **0.2337** | | **2,768.2337** | **2,768.2337** | **0.1896** | | **2,772.9730** |

### 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 | | | | | 2.5063 | 0.0000 | 2.5063 | 1.2881 | 0.0000 | 1.2881 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.7733 | 30.6725 | 16.5770 | 0.0297 | | 1.5513 | 1.5513 | | 1.4272 | 1.4272 | 0.0000 | 2,988.0216 | 2,988.0216 | 0.9302 | | 3,011.2769 |
| **Total** | **2.7733** | **30.6725** | **16.5770** | **0.0297** | **2.5063** | **1.5513** | **4.0576** | **1.2881** | **1.4272** | **2.7153** | **0.0000** | **2,988.0216** | **2,988.0216** | **0.9302** | | **3,011.2769** |

## 3.3 Grading - 2018

### 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 | 0.2016 | 8.9430 | 1.2096 | 0.0246 | 0.5687 | 0.0338 | 0.6025 | 0.1559 | 0.0324 | 0.1882 | | 2,610.3260 | 2,610.3260 | 0.1849 | | 2,614.9485 |
| 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 | 0.0881 | 0.0595 | 0.6030 | 1.5900e-003 | 0.1677 | 1.0500e-003 | 0.1687 | 0.0445 | 9.7000e-004 | 0.0454 | | 157.9077 | 157.9077 | 4.6700e-003 | | 158.0245 |
| **Total** | **0.2897** | **9.0025** | **1.8126** | **0.0262** | **0.7363** | **0.0349** | **0.7712** | **0.2004** | **0.0333** | **0.2337** | | **2,768.2337** | **2,768.2337** | **0.1896** | | **2,772.9730** |

## 3.4 Building Construction - 2018

### 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 | 2.6795 | 23.3900 | 17.5804 | 0.0269 | | 1.4999 | 1.4999 | | 1.4099 | 1.4099 | | 2,620.9351 | 2,620.9351 | 0.6421 | | 2,636.9883 |
| **Total** | **2.6795** | **23.3900** | **17.5804** | **0.0269** | | **1.4999** | **1.4999** | | **1.4099** | **1.4099** | | **2,620.9351** | **2,620.9351** | **0.6421** | | **2,636.9883** |

## 3.4 Building Construction - 2018

### 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 | 0.0270 | 0.8498 | 0.1898 | 1.7900e-003 | 0.0448 | 7.2200e-003 | 0.0521 | 0.0129 | 6.9000e-003 | 0.0198 | | 188.1139 | 188.1139 | 0.0179 | | 188.5613 |
| Worker | 0.0999 | 0.0675 | 0.6834 | 1.8000e-003 | 0.1900 | 1.1900e-003 | 0.1912 | 0.0504 | 1.0900e-003 | 0.0515 | | 178.9621 | 178.9621 | 5.2900e-003 | | 179.0945 |
| **Total** | **0.1269** | **0.9172** | **0.8732** | **3.5900e-003** | **0.2349** | **8.4100e-003** | **0.2433** | **0.0633** | **7.9900e-003** | **0.0713** | | **367.0760** | **367.0760** | **0.0232** | | **367.6558** |

### 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 | 2.6795 | 23.3900 | 17.5804 | 0.0269 | | 1.4999 | 1.4999 | | 1.4099 | 1.4099 | 0.0000 | 2,620.9351 | 2,620.9351 | 0.6421 | | 2,636.9883 |
| **Total** | **2.6795** | **23.3900** | **17.5804** | **0.0269** | | **1.4999** | **1.4999** | | **1.4099** | **1.4099** | **0.0000** | **2,620.9351** | **2,620.9351** | **0.6421** | | **2,636.9883** |

## 3.4 Building Construction - 2018

**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 | 0.0270 | 0.8498 | 0.1898 | 1.7900e-003 | 0.0448 | 7.2200e-003 | 0.0521 | 0.0129 | 6.9000e-003 | 0.0198 | | 188.1139 | 188.1139 | 0.0179 | | 188.5613 |
| Worker | 0.0999 | 0.0675 | 0.6834 | 1.8000e-003 | 0.1900 | 1.1900e-003 | 0.1912 | 0.0504 | 1.0900e-003 | 0.0515 | | 178.9621 | 178.9621 | 5.2900e-003 | | 179.0945 |
| **Total** | **0.1269** | **0.9172** | **0.8732** | **3.5900e-003** | **0.2349** | **8.4100e-003** | **0.2433** | **0.0633** | **7.9900e-003** | **0.0713** | | **367.0760** | **367.0760** | **0.0232** | | **367.6558** |

## 3.4 Building Construction - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.3612 | 21.0788 | 17.1638 | 0.0269 | | 1.2899 | 1.2899 | | 1.2127 | 1.2127 | | 2,591.5802 | 2,591.5802 | 0.6313 | | 2,607.3635 |
| **Total** | **2.3612** | **21.0788** | **17.1638** | **0.0269** | | **1.2899** | **1.2899** | | **1.2127** | **1.2127** | | **2,591.5802** | **2,591.5802** | **0.6313** | | **2,607.3635** |

## 3.4 Building Construction - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 0.0245 | 0.7950 | 0.1736 | 1.7700e-003 | 0.0448 | 6.1300e-003 | 0.0510 | 0.0129 | 5.8600e-003 | 0.0188 | | 186.8571 | 186.8571 | 0.0173 | | 187.2884 |
| Worker | 0.0915 | 0.0595 | 0.6121 | 1.7400e-003 | 0.1900 | 1.1700e-003 | 0.1912 | 0.0504 | 1.0800e-003 | 0.0515 | | 173.4879 | 173.4879 | 4.7100e-003 | | 173.6056 |
| **Total** | **0.1159** | **0.8545** | **0.7857** | **3.5100e-003** | **0.2349** | **7.3000e-003** | **0.2421** | **0.0633** | **6.9400e-003** | **0.0702** | | **360.3450** | **360.3450** | **0.0220** | | **360.8940** |

### 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 | 2.3612 | 21.0788 | 17.1638 | 0.0269 | | 1.2899 | 1.2899 | | 1.2127 | 1.2127 | 0.0000 | 2,591.5802 | 2,591.5802 | 0.6313 | | 2,607.3635 |
| **Total** | **2.3612** | **21.0788** | **17.1638** | **0.0269** | | **1.2899** | **1.2899** | | **1.2127** | **1.2127** | **0.0000** | **2,591.5802** | **2,591.5802** | **0.6313** | | **2,607.3635** |

## 3.4 Building Construction - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 0.0245 | 0.7950 | 0.1736 | 1.7700e-003 | 0.0448 | 6.1300e-003 | 0.0510 | 0.0129 | 5.8600e-003 | 0.0188 | | 186.8571 | 186.8571 | 0.0173 | | 187.2884 |
| Worker | 0.0915 | 0.0595 | 0.6121 | 1.7400e-003 | 0.1900 | 1.1700e-003 | 0.1912 | 0.0504 | 1.0800e-003 | 0.0515 | | 173.4879 | 173.4879 | 4.7100e-003 | | 173.6056 |
| **Total** | **0.1159** | **0.8545** | **0.7857** | **3.5100e-003** | **0.2349** | **7.3000e-003** | **0.2421** | **0.0633** | **6.9400e-003** | **0.0702** | | **360.3450** | **360.3450** | **0.0220** | | **360.8940** |

## 3.5 Paving - 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 | 1.4544 | 15.2441 | 14.6648 | 0.0228 | | 0.8246 | 0.8246 | | 0.7586 | 0.7586 | | 2,257.0025 | 2,257.0025 | 0.7141 | | 2,274.8548 |
| Paving | 0.6236 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.0780** | **15.2441** | **14.6648** | **0.0228** | | **0.8246** | **0.8246** | | **0.7586** | **0.7586** | | **2,257.0025** | **2,257.0025** | **0.7141** | | **2,274.8548** |

## 3.5 Paving - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 0.0807 | 0.0525 | 0.5401 | 1.5400e-003 | 0.1677 | 1.0300e-003 | 0.1687 | 0.0445 | 9.5000e-004 | 0.0454 | | 153.0776 | 153.0776 | 4.1500e-003 | | 153.1814 |
| **Total** | **0.0807** | **0.0525** | **0.5401** | **1.5400e-003** | **0.1677** | **1.0300e-003** | **0.1687** | **0.0445** | **9.5000e-004** | **0.0454** | | **153.0776** | **153.0776** | **4.1500e-003** | | **153.1814** |

### 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 | 1.4544 | 15.2441 | 14.6648 | 0.0228 | | 0.8246 | 0.8246 | | 0.7586 | 0.7586 | 0.0000 | 2,257.0025 | 2,257.0025 | 0.7141 | | 2,274.8548 |
| Paving | 0.6236 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.0780** | **15.2441** | **14.6648** | **0.0228** | | **0.8246** | **0.8246** | | **0.7586** | **0.7586** | **0.0000** | **2,257.0025** | **2,257.0025** | **0.7141** | | **2,274.8548** |

## 3.5 Paving - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 0.0807 | 0.0525 | 0.5401 | 1.5400e-003 | 0.1677 | 1.0300e-003 | 0.1687 | 0.0445 | 9.5000e-004 | 0.0454 | | 153.0776 | 153.0776 | 4.1500e-003 | | 153.1814 |
| **Total** | **0.0807** | **0.0525** | **0.5401** | **1.5400e-003** | **0.1677** | **1.0300e-003** | **0.1687** | **0.0445** | **9.5000e-004** | **0.0454** | | **153.0776** | **153.0776** | **4.1500e-003** | | **153.1814** |

## 3.6 Architectural Coating - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 6.1356 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2664 | 1.8354 | 1.8413 | 2.9700e-003 | | 0.1288 | 0.1288 | | 0.1288 | 0.1288 | | 281.4481 | 281.4481 | 0.0238 | | 282.0423 |
| **Total** | **6.4020** | **1.8354** | **1.8413** | **2.9700e-003** | | **0.1288** | **0.1288** | | **0.1288** | **0.1288** | | **281.4481** | **281.4481** | **0.0238** | | **282.0423** |

## 3.6 Architectural Coating - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 0.0161 | 0.0105 | 0.1080 | 3.1000e-004 | 0.0335 | 2.1000e-004 | 0.0337 | 8.8900e-003 | 1.9000e-004 | 9.0800e-003 | | 30.6155 | 30.6155 | 8.3000e-004 | | 30.6363 |
| **Total** | **0.0161** | **0.0105** | **0.1080** | **3.1000e-004** | **0.0335** | **2.1000e-004** | **0.0337** | **8.8900e-003** | **1.9000e-004** | **9.0800e-003** | | **30.6155** | **30.6155** | **8.3000e-004** | | **30.6363** |

### 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 | 6.1356 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.2664 | 1.8354 | 1.8413 | 2.9700e-003 | | 0.1288 | 0.1288 | | 0.1288 | 0.1288 | 0.0000 | 281.4481 | 281.4481 | 0.0238 | | 282.0423 |
| **Total** | **6.4020** | **1.8354** | **1.8413** | **2.9700e-003** | | **0.1288** | **0.1288** | | **0.1288** | **0.1288** | **0.0000** | **281.4481** | **281.4481** | **0.0238** | | **282.0423** |

### 3.6 Architectural Coating - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | 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 | 0.0161 | 0.0105 | 0.1080 | 3.1000e-004 | 0.0335 | 2.1000e-004 | 0.0337 | 8.8900e-003 | 1.9000e-004 | 9.0800e-003 | | 30.6155 | 30.6155 | 8.3000e-004 | | 30.6363 |
| **Total** | **0.0161** | **0.0105** | **0.1080** | **3.1000e-004** | **0.0335** | **2.1000e-004** | **0.0337** | **8.8900e-003** | **1.9000e-004** | **9.0800e-003** | | **30.6155** | **30.6155** | **8.3000e-004** | | **30.6363** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Implement Trip Reduction Program

| | ROG | NOx | CO | SO2 | Fugitive 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 | 10.7576 | 8.1490 | 59.9072 | 0.0882 | 8.6104 | 0.1095 | 8.7199 | 2.2850 | 0.1016 | 2.3866 | | 8,751.5374 | 8,751.5374 | 0.5002 | | 8,764.0431 |
| Unmitigated | 10.7967 | 8.2629 | 60.8854 | 0.0912 | 8.9626 | 0.1121 | 9.0746 | 2.3785 | 0.1040 | 2.4825 | | 9,053.8929 | 9,053.8929 | 0.5106 | | 9,066.6574 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Automobile Care Center | 426.00 | 912.00 | 912.00 | 610,098 | 583,160 |
| Convenience Market With Gas Pumps | 3,688.32 | 4,666.72 | 4666.72 | 1,387,211 | 1,334,957 |
| Fast Food Restaurant with Drive Thru | 2,058.05 | 2,692.44 | 2065.17 | 1,333,095 | 1,282,431 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 6,172.37 | 8,271.16 | 7,643.89 | 3,330,404 | 3,200,549 |

## 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 |
| Automobile Care Center | 16.60 | 4.00 | 6.90 | 33.00 | 48.00 | 19.00 | 21 | 51 | 28 |
| Convenience Market With Gas | 16.60 | 4.00 | 6.90 | 0.80 | 80.20 | 19.00 | 14 | 21 | 65 |
| Fast Food Restaurant with Drive | 16.60 | 4.00 | 6.90 | 2.20 | 78.80 | 19.00 | 29 | 21 | 50 |
| Parking Lot | 16.60 | 4.00 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Automobile Care Center | 0.800000 | 0.080000 | 0.060000 | 0.040000 | 0.000000 | 0.000000 | 0.009000 | 0.001000 | 0.000000 | 0.000000 | 0.010000 | 0.000000 | 0.000000 |
| Convenience Market With Gas Pumps | 0.800000 | 0.080000 | 0.060000 | 0.040000 | 0.000000 | 0.000000 | 0.009000 | 0.001000 | 0.000000 | 0.000000 | 0.010000 | 0.000000 | 0.000000 |
| Fast Food Restaurant with Drive Thru | 0.800000 | 0.080000 | 0.060000 | 0.040000 | 0.000000 | 0.000000 | 0.009000 | 0.001000 | 0.000000 | 0.000000 | 0.010000 | 0.000000 | 0.000000 |
| Parking Lot | 0.533383 | 0.039495 | 0.183627 | 0.126156 | 0.018688 | 0.005561 | 0.017029 | 0.066607 | 0.001345 | 0.001247 | 0.004677 | 0.000974 | 0.001211 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

| | ROG | NOx | CO | SO2 | Fugitive 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 | 0.0356 | 0.3236 | 0.2718 | 1.9400e-003 | | 0.0246 | 0.0246 | | 0.0246 | 0.0246 | | 388.2904 | 388.2904 | 7.4400e-003 | 7.1200e-003 | 390.5978 |
| NaturalGas Unmitigated | 0.0385 | 0.3501 | 0.2941 | 2.1000e-003 | | 0.0266 | 0.0266 | | 0.0266 | 0.0266 | | 420.1223 | 420.1223 | 8.0500e-003 | 7.7000e-003 | 422.6189 |

## 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 | | | | | |
| Automobile Care Center | 267.041 | 2.8800e-003 | 0.0262 | 0.0220 | 1.6000e-004 | | 1.9900e-003 | 1.9900e-003 | | 1.9900e-003 | 1.9900e-003 | | 31.4166 | 31.4166 | 6.0000e-004 | 5.8000e-004 | 31.6033 |
| Convenience Market With Gas Pumps | 30.2102 | 3.3000e-004 | 2.9600e-003 | 2.4900e-003 | 2.0000e-005 | | 2.3000e-004 | 2.3000e-004 | | 2.3000e-004 | 2.3000e-004 | | 3.5542 | 3.5542 | 7.0000e-005 | 7.0000e-005 | 3.5753 |
| Fast Food Restaurant with Drive Thru | 3273.79 | 0.0353 | 0.3210 | 0.2696 | 1.9300e-003 | | 0.0244 | 0.0244 | | 0.0244 | 0.0244 | | 385.1516 | 385.1516 | 7.3800e-003 | 7.0600e-003 | 387.4404 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0385** | **0.3501** | **0.2941** | **2.1100e-003** | | **0.0266** | **0.0266** | | **0.0266** | **0.0266** | | **420.1223** | **420.1223** | **8.0500e-003** | **7.7100e-003** | **422.6189** |

## 5.2 Energy by Land Use - NaturalGas

**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 | | | | | |
| Automobile Care Center | 0.235479 | 2.5400e-003 | 0.0231 | 0.0194 | 1.4000e-004 | | 1.7500e-003 | 1.7500e-003 | | 1.7500e-003 | 1.7500e-003 | | 27.7035 | 27.7035 | 5.3000e-004 | 5.1000e-004 | 27.8681 |
| Convenience Market With Gas Pumps | 0.0236783 | 2.6000e-004 | 2.3200e-003 | 1.9500e-003 | 1.0000e-005 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | | 2.7857 | 2.7857 | 5.0000e-005 | 5.0000e-005 | 2.8022 |
| Fast Food Restaurant with Drive Thru | 3.04131 | 0.0328 | 0.2982 | 0.2505 | 1.7900e-003 | | 0.0227 | 0.0227 | | 0.0227 | 0.0227 | | 357.8012 | 357.8012 | 6.8600e-003 | 6.5600e-003 | 359.9275 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0356** | **0.3236** | **0.2718** | **1.9400e-003** | | **0.0246** | **0.0246** | | **0.0246** | **0.0246** | | **388.2904** | **388.2904** | **7.4400e-003** | **7.1200e-003** | **390.5978** |

# 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 | 0.2895 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |
| Unmitigated | 0.2895 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |

## 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 | 0.0336 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.2549 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 9.6000e-004 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |
| **Total** | **0.2895** | **9.0000e-005** | **0.0101** | **0.0000** | | **4.0000e-005** | **4.0000e-005** | | **4.0000e-005** | **4.0000e-005** | | **0.0215** | **0.0215** | **6.0000e-005** | | **0.0230** |

### 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0336 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.2549 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 9.6000e-004 | 9.0000e-005 | 0.0101 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 0.0215 | 0.0215 | 6.0000e-005 | | 0.0230 |
| **Total** | **0.2895** | **9.0000e-005** | **0.0101** | **0.0000** | | **4.0000e-005** | **4.0000e-005** | | **4.0000e-005** | **4.0000e-005** | | **0.0215** | **0.0215** | **6.0000e-005** | | **0.0230** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 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

# Appendix B

Annual Emission Calculations Output
(CalEEMod)

# BRIGGS ROAD AT SR-74 GAS STATION AND RETAIL CENTER, City of Menifee

**Riverside-South Coast County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 75.00 | Space | 4.76 | 30,000.00 | 0 |
| Fast Food Restaurant with Drive Thru | 4.37 | 1000sqft | 0.10 | 4,370.00 | 0 |
| Automobile Care Center | 3.00 | 1000sqft | 0.07 | 3,000.00 | 0 |
| Convenience Market With Gas Pumps | 16.00 | Pump | 0.11 | 4,967.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.4 | **Precipitation Freq (Days)** | 28 |
| **Climate Zone** | 10 | | | **Operational Year** | 2019 |
| **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 - Land use assumptions based on site plan for CUP 2017-226

Construction Phase -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - 5,200 cubic yards of material export

Vehicle Trips - Ite Trip Generation Rates 10th Edition, 2017; Ite (948) Automated Car Wash rates used for Auto Care Center;
C-C trips rates based on market survey.

Water And Wastewater - Water use assumptions based on International Car Wash Association Water Use in the Professional Car Wash Industry, 2002

Solid Waste - CalEEMod does not calculate waste for convenience market/gas station based on pumps metric. 4,967 sf convenience market generates 14.94 tons/year per CalEEMod default assumptions. Solid waste added to auto care center. (14.94 + 11.46 = 26.40).

Sequestration -

Construction Off-road Equipment Mitigation - Project is required to comply SCAQMD rule 403 regarding fugitive dust control.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix - Fleet Mix adjusted per recommendations from City of Menifee staff.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | WaterUnpavedRoadMoistureContent | 0 | 25 |
| tblConstDustMitigation | WaterUnpavedRoadVehicleSpeed | 0 | 15 |
| tblFleetMix | HHD | 0.07 | 1.0000e-003 |
| tblFleetMix | HHD | 0.07 | 1.0000e-003 |

| | | | |
|---|---|---|---|
| tblFleetMix | HHD | 0.07 | 1.0000e-003 |
| tblFleetMix | LDA | 0.53 | 0.80 |
| tblFleetMix | LDA | 0.53 | 0.80 |
| tblFleetMix | LDA | 0.53 | 0.80 |
| tblFleetMix | LDT1 | 0.04 | 0.08 |
| tblFleetMix | LDT1 | 0.04 | 0.08 |
| tblFleetMix | LDT1 | 0.04 | 0.08 |
| tblFleetMix | LDT2 | 0.18 | 0.06 |
| tblFleetMix | LDT2 | 0.18 | 0.06 |
| tblFleetMix | LDT2 | 0.18 | 0.06 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD2 | 5.5610e-003 | 0.00 |
| tblFleetMix | LHD2 | 5.5610e-003 | 0.00 |
| tblFleetMix | LHD2 | 5.5610e-003 | 0.00 |
| tblFleetMix | MCY | 4.6770e-003 | 0.01 |
| tblFleetMix | MCY | 4.6770e-003 | 0.01 |
| tblFleetMix | MCY | 4.6770e-003 | 0.01 |
| tblFleetMix | MDV | 0.13 | 0.04 |
| tblFleetMix | MDV | 0.13 | 0.04 |
| tblFleetMix | MDV | 0.13 | 0.04 |
| tblFleetMix | MH | 1.2110e-003 | 0.00 |
| tblFleetMix | MH | 1.2110e-003 | 0.00 |
| tblFleetMix | MH | 1.2110e-003 | 0.00 |
| tblFleetMix | MHD | 0.02 | 9.0000e-003 |
| tblFleetMix | MHD | 0.02 | 9.0000e-003 |

| | | | |
|---|---|---|---|
| tblFleetMix | MHD | 0.02 | 9.0000e-003 |
| tblFleetMix | OBUS | 1.3450e-003 | 0.00 |
| tblFleetMix | OBUS | 1.3450e-003 | 0.00 |
| tblFleetMix | OBUS | 1.3450e-003 | 0.00 |
| tblFleetMix | SBUS | 9.7400e-004 | 0.00 |
| tblFleetMix | SBUS | 9.7400e-004 | 0.00 |
| tblFleetMix | SBUS | 9.7400e-004 | 0.00 |
| tblFleetMix | UBUS | 1.2470e-003 | 0.00 |
| tblFleetMix | UBUS | 1.2470e-003 | 0.00 |
| tblFleetMix | UBUS | 1.2470e-003 | 0.00 |
| tblLandUse | LandUseSquareFeet | 2,258.80 | 4,967.00 |
| tblLandUse | LotAcreage | 0.68 | 4.76 |
| tblLandUse | LotAcreage | 0.05 | 0.11 |
| tblSequestration | NumberOfNewTrees | 0.00 | 50.00 |
| tblSolidWaste | SolidWasteGenerationRate | 11.46 | 26.40 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 650.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | CC_TL | 8.40 | 4.00 |
| tblVehicleTrips | ST_TR | 23.72 | 304.00 |
| tblVehicleTrips | ST_TR | 204.47 | 291.67 |
| tblVehicleTrips | ST_TR | 722.03 | 616.12 |
| tblVehicleTrips | SU_TR | 11.88 | 304.00 |
| tblVehicleTrips | SU_TR | 166.88 | 291.67 |
| tblVehicleTrips | SU_TR | 542.72 | 472.58 |
| tblVehicleTrips | WD_TR | 23.72 | 142.00 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | WD_TR | 542.60 | 230.52 |
| tblVehicleTrips | WD_TR | 496.12 | 470.95 |
| tblWater | IndoorWaterUseRate | 282,243.32 | 0.00 |
| tblWater | OutdoorWaterUseRate | 172,987.84 | 3,587,860.00 |

## 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 | | | | | |
| 2018 | 0.1042 | 1.0773 | 0.6319 | 1.3100e-003 | 0.1683 | 0.0559 | 0.2242 | 0.0867 | 0.0520 | 0.1387 | 0.0000 | 119.8016 | 119.8016 | 0.0264 | 0.0000 | 120.4607 |
| 2019 | 0.3252 | 2.3004 | 1.9150 | 3.2400e-003 | 0.0244 | 0.1354 | 0.1598 | 6.5800e-003 | 0.1272 | 0.1338 | 0.0000 | 285.2610 | 285.2610 | 0.0642 | 0.0000 | 286.8649 |
| **Maximum** | **0.3252** | **2.3004** | **1.9150** | **3.2400e-003** | **0.1683** | **0.1354** | **0.2242** | **0.0867** | **0.1272** | **0.1387** | **0.0000** | **285.2610** | **285.2610** | **0.0642** | **0.0000** | **286.8649** |

### 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 | | | | | |
| 2018 | 0.1042 | 1.0773 | 0.6319 | 1.3100e-003 | 0.0720 | 0.0559 | 0.1279 | 0.0352 | 0.0520 | 0.0872 | 0.0000 | 119.8015 | 119.8015 | 0.0264 | 0.0000 | 120.4606 |
| 2019 | 0.3252 | 2.3004 | 1.9149 | 3.2400e-003 | 0.0244 | 0.1354 | 0.1598 | 6.5800e-003 | 0.1272 | 0.1338 | 0.0000 | 285.2607 | 285.2607 | 0.0642 | 0.0000 | 286.8646 |
| **Maximum** | **0.3252** | **2.3004** | **1.9149** | **3.2400e-003** | **0.0720** | **0.1354** | **0.1598** | **0.0352** | **0.1272** | **0.1338** | **0.0000** | **285.2607** | **285.2607** | **0.0642** | **0.0000** | **286.8646** |

| | ROG | NOx | 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** | **49.96** | **0.00** | **25.07** | **55.17** | **0.00** | **18.89** | **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 | 10-1-2018 | 12-31-2018 | 1.1578 | 1.1578 |
| 2 | 1-1-2019 | 3-31-2019 | 0.7846 | 0.7846 |
| 3 | 4-1-2019 | 6-30-2019 | 0.7934 | 0.7934 |
| 4 | 7-1-2019 | 9-30-2019 | 0.7946 | 0.7946 |
| | | Highest | 1.1578 | 1.1578 |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0528 | 1.0000e-005 | 1.2700e-003 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.4400e-003 | 2.4400e-003 | 1.0000e-005 | 0.0000 | 2.6100e-003 |
| Energy | 7.0300e-003 | 0.0639 | 0.0537 | 3.8000e-004 | | 4.8600e-003 | 4.8600e-003 | | 4.8600e-003 | 4.8600e-003 | 0.0000 | 168.7017 | 168.7017 | 5.4300e-003 | 2.1200e-003 | 169.4697 |
| Mobile | 1.5811 | 1.2135 | 8.9019 | 0.0133 | 1.2463 | 0.0160 | 1.2624 | 0.3312 | 0.0149 | 0.3461 | 0.0000 | 1,192.9637 | 1,192.9637 | 0.0666 | 0.0000 | 1,194.6277 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 15.5775 | 0.0000 | 15.5775 | 0.9206 | 0.0000 | 38.5927 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.4739 | 19.5606 | 20.0345 | 0.0495 | 1.3200e-003 | 21.6638 |
| **Total** | **1.6409** | **1.2774** | **8.9568** | **0.0136** | **1.2463** | **0.0209** | **1.2672** | **0.3312** | **0.0198** | **0.3509** | **16.0514** | **1,381.2284** | **1,397.2798** | **1.0421** | **3.4400e-003** | **1,424.3565** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0528 | 1.0000e-005 | 1.2700e-003 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.4400e-003 | 2.4400e-003 | 1.0000e-005 | 0.0000 | 2.6100e-003 |
| Energy | 6.5000e-003 | 0.0591 | 0.0496 | 3.5000e-004 | | 4.4900e-003 | 4.4900e-003 | | 4.4900e-003 | 4.4900e-003 | 0.0000 | 150.7238 | 150.7238 | 4.8000e-003 | 1.9200e-003 | 151.4151 |
| Mobile | 1.5756 | 1.1971 | 8.7569 | 0.0128 | 1.1977 | 0.0157 | 1.2134 | 0.3183 | 0.0146 | 0.3328 | 0.0000 | 1,153.5669 | 1,153.5669 | 0.0652 | 0.0000 | 1,155.1972 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 7.7888 | 0.0000 | 7.7888 | 0.4603 | 0.0000 | 19.2963 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.4739 | 12.8789 | 13.3528 | 0.0492 | 1.2600e-003 | 14.9582 |
| **Total** | **1.6348** | **1.2562** | **8.8078** | **0.0132** | **1.1977** | **0.0202** | **1.2179** | **0.3183** | **0.0190** | **0.3373** | **8.2627** | **1,317.1721** | **1,325.4348** | **0.5795** | **3.1800e-003** | **1,340.8695** |

| | ROG | NOx | 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** | **0.37** | **1.66** | **1.66** | **3.37** | **3.90** | **3.49** | **3.89** | **3.90** | **3.59** | **3.88** | **48.52** | **4.64** | **5.14** | **44.39** | **7.56** | **5.86** |

## 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 35.4000 |
| **Total** | **35.4000** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 10/1/2018 | 10/12/2018 | 5 | 10 | |
| 2 | Grading | Grading | 10/13/2018 | 11/9/2018 | 5 | 20 | |
| 3 | Building Construction | Building Construction | 11/10/2018 | 9/27/2019 | 5 | 230 | |
| 4 | Paving | Paving | 9/28/2019 | 10/25/2019 | 5 | 20 | |
| 5 | Architectural Coating | Architectural Coating | 10/26/2019 | 11/22/2019 | 5 | 20 | |

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

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 4.76**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 18,506; Non-Residential Outdoor: 6,169; Striped Parking Area: 1,800 (Architectural Coating – sqft)**

## OffRoad Equipment

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

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 6 | 15.00 | 0.00 | 650.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 17.00 | 7.00 | 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 | 3.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

## 3.2 Site Preparation - 2018

**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 | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0228 | 0.2410 | 0.1124 | 1.9000e-004 | | 0.0129 | 0.0129 | | 0.0119 | 0.0119 | 0.0000 | 17.3800 | 17.3800 | 5.4100e-003 | 0.0000 | 17.5152 |
| **Total** | **0.0228** | **0.2410** | **0.1124** | **1.9000e-004** | **0.0903** | **0.0129** | **0.1032** | **0.0497** | **0.0119** | **0.0615** | **0.0000** | **17.3800** | **17.3800** | **5.4100e-003** | **0.0000** | **17.5152** |

## 3.2 Site Preparation - 2018

### 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 | 4.9000e-004 | 3.7000e-004 | 3.8100e-003 | 1.0000e-005 | 9.9000e-004 | 1.0000e-005 | 1.0000e-003 | 2.6000e-004 | 1.0000e-005 | 2.7000e-004 | 0.0000 | 0.8816 | 0.8816 | 3.0000e-005 | 0.0000 | 0.8822 |
| **Total** | **4.9000e-004** | **3.7000e-004** | **3.8100e-003** | **1.0000e-005** | **9.9000e-004** | **1.0000e-005** | **1.0000e-003** | **2.6000e-004** | **1.0000e-005** | **2.7000e-004** | **0.0000** | **0.8816** | **0.8816** | **3.0000e-005** | **0.0000** | **0.8822** |

### 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 | | | | | 0.0346 | 0.0000 | 0.0346 | 0.0190 | 0.0000 | 0.0190 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0228 | 0.2410 | 0.1124 | 1.9000e-004 | | 0.0129 | 0.0129 | | 0.0119 | 0.0119 | 0.0000 | 17.3799 | 17.3799 | 5.4100e-003 | 0.0000 | 17.5152 |
| **Total** | **0.0228** | **0.2410** | **0.1124** | **1.9000e-004** | **0.0346** | **0.0129** | **0.0474** | **0.0190** | **0.0119** | **0.0308** | **0.0000** | **17.3799** | **17.3799** | **5.4100e-003** | **0.0000** | **17.5152** |

## 3.2 Site Preparation - 2018

**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 | 4.9000e-004 | 3.7000e-004 | 3.8100e-003 | 1.0000e-005 | 9.9000e-004 | 1.0000e-005 | 1.0000e-003 | 2.6000e-004 | 1.0000e-005 | 2.7000e-004 | 0.0000 | 0.8816 | 0.8816 | 3.0000e-005 | 0.0000 | 0.8822 |
| **Total** | **4.9000e-004** | **3.7000e-004** | **3.8100e-003** | **1.0000e-005** | **9.9000e-004** | **1.0000e-005** | **1.0000e-003** | **2.6000e-004** | **1.0000e-005** | **2.7000e-004** | **0.0000** | **0.8816** | **0.8816** | **3.0000e-005** | **0.0000** | **0.8822** |

## 3.3 Grading - 2018

**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 | | | | | 0.0655 | 0.0000 | 0.0655 | 0.0337 | 0.0000 | 0.0337 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0277 | 0.3067 | 0.1658 | 3.0000e-004 | | 0.0155 | 0.0155 | | 0.0143 | 0.0143 | 0.0000 | 27.1069 | 27.1069 | 8.4400e-003 | 0.0000 | 27.3178 |
| **Total** | **0.0277** | **0.3067** | **0.1658** | **3.0000e-004** | **0.0655** | **0.0155** | **0.0810** | **0.0337** | **0.0143** | **0.0479** | **0.0000** | **27.1069** | **27.1069** | **8.4400e-003** | **0.0000** | **27.3178** |

## 3.3 Grading - 2018

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.9600e-003 | 0.0908 | 0.0111 | 2.5000e-004 | 5.6000e-003 | 3.3000e-004 | 5.9400e-003 | 1.5400e-003 | 3.2000e-004 | 1.8600e-003 | 0.0000 | 24.0277 | 24.0277 | 1.6000e-003 | 0.0000 | 24.0676 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 8.1000e-004 | 6.2000e-004 | 6.3500e-003 | 2.0000e-005 | 1.6500e-003 | 1.0000e-005 | 1.6600e-003 | 4.4000e-004 | 1.0000e-005 | 4.5000e-004 | 0.0000 | 1.4693 | 1.4693 | 4.0000e-005 | 0.0000 | 1.4704 |
| **Total** | **2.7700e-003** | **0.0914** | **0.0174** | **2.7000e-004** | **7.2500e-003** | **3.4000e-004** | **7.6000e-003** | **1.9800e-003** | **3.3000e-004** | **2.3100e-003** | **0.0000** | **25.4970** | **25.4970** | **1.6400e-003** | **0.0000** | **25.5380** |

### 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 | | | | | 0.0251 | 0.0000 | 0.0251 | 0.0129 | 0.0000 | 0.0129 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0277 | 0.3067 | 0.1658 | 3.0000e-004 | | 0.0155 | 0.0155 | | 0.0143 | 0.0143 | 0.0000 | 27.1068 | 27.1068 | 8.4400e-003 | 0.0000 | 27.3178 |
| **Total** | **0.0277** | **0.3067** | **0.1658** | **3.0000e-004** | **0.0251** | **0.0155** | **0.0406** | **0.0129** | **0.0143** | **0.0272** | **0.0000** | **27.1068** | **27.1068** | **8.4400e-003** | **0.0000** | **27.3178** |

## 3.3 Grading - 2018

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 1.9600e-003 | 0.0908 | 0.0111 | 2.5000e-004 | 5.6000e-003 | 3.3000e-004 | 5.9400e-003 | 1.5400e-003 | 3.2000e-004 | 1.8600e-003 | 0.0000 | 24.0277 | 24.0277 | 1.6000e-003 | 0.0000 | 24.0676 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 8.1000e-004 | 6.2000e-004 | 6.3500e-003 | 2.0000e-005 | 1.6500e-003 | 1.0000e-005 | 1.6600e-003 | 4.4000e-004 | 1.0000e-005 | 4.5000e-004 | 0.0000 | 1.4693 | 1.4693 | 4.0000e-005 | 0.0000 | 1.4704 |
| **Total** | **2.7700e-003** | **0.0914** | **0.0174** | **2.7000e-004** | **7.2500e-003** | **3.4000e-004** | **7.6000e-003** | **1.9800e-003** | **3.3000e-004** | **2.3100e-003** | **0.0000** | **25.4970** | **25.4970** | **1.6400e-003** | **0.0000** | **25.5380** |

## 3.4 Building Construction - 2018

**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 | 0.0482 | 0.4210 | 0.3165 | 4.8000e-004 | | 0.0270 | 0.0270 | | 0.0254 | 0.0254 | 0.0000 | 42.7981 | 42.7981 | 0.0105 | 0.0000 | 43.0602 |
| **Total** | **0.0482** | **0.4210** | **0.3165** | **4.8000e-004** | | **0.0270** | **0.0270** | | **0.0254** | **0.0254** | **0.0000** | **42.7981** | **42.7981** | **0.0105** | **0.0000** | **43.0602** |

## 3.4 Building Construction - 2018

### 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 | 4.7000e-004 | 0.0155 | 3.1800e-003 | 3.0000e-005 | 8.0000e-004 | 1.3000e-004 | 9.2000e-004 | 2.3000e-004 | 1.2000e-004 | 3.5000e-004 | 0.0000 | 3.1407 | 3.1407 | 2.8000e-004 | 0.0000 | 3.1476 |
| Worker | 1.6600e-003 | 1.2600e-003 | 0.0130 | 3.0000e-005 | 3.3600e-003 | 2.0000e-005 | 3.3800e-003 | 8.9000e-004 | 2.0000e-005 | 9.1000e-004 | 0.0000 | 2.9974 | 2.9974 | 9.0000e-005 | 0.0000 | 2.9996 |
| **Total** | **2.1300e-003** | **0.0168** | **0.0161** | **6.0000e-005** | **4.1600e-003** | **1.5000e-004** | **4.3000e-003** | **1.1200e-003** | **1.4000e-004** | **1.2600e-003** | **0.0000** | **6.1381** | **6.1381** | **3.7000e-004** | **0.0000** | **6.1472** |

### 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 | 0.0482 | 0.4210 | 0.3165 | 4.8000e-004 | | 0.0270 | 0.0270 | | 0.0254 | 0.0254 | 0.0000 | 42.7981 | 42.7981 | 0.0105 | 0.0000 | 43.0602 |
| **Total** | **0.0482** | **0.4210** | **0.3165** | **4.8000e-004** | | **0.0270** | **0.0270** | | **0.0254** | **0.0254** | **0.0000** | **42.7981** | **42.7981** | **0.0105** | **0.0000** | **43.0602** |

## 3.4 Building Construction - 2018

**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 | 4.7000e-004 | 0.0155 | 3.1800e-003 | 3.0000e-005 | 8.0000e-004 | 1.3000e-004 | 9.2000e-004 | 2.3000e-004 | 1.2000e-004 | 3.5000e-004 | 0.0000 | 3.1407 | 3.1407 | 2.8000e-004 | 0.0000 | 3.1476 |
| Worker | 1.6600e-003 | 1.2600e-003 | 0.0130 | 3.0000e-005 | 3.3600e-003 | 2.0000e-005 | 3.3800e-003 | 8.9000e-004 | 2.0000e-005 | 9.1000e-004 | 0.0000 | 2.9974 | 2.9974 | 9.0000e-005 | 0.0000 | 2.9996 |
| **Total** | **2.1300e-003** | **0.0168** | **0.0161** | **6.0000e-005** | **4.1600e-003** | **1.5000e-004** | **4.3000e-003** | **1.1200e-003** | **1.4000e-004** | **1.2600e-003** | **0.0000** | **6.1381** | **6.1381** | **3.7000e-004** | **0.0000** | **6.1472** |

## 3.4 Building Construction - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2290 | 2.0446 | 1.6649 | 2.6100e-003 | | 0.1251 | 0.1251 | | 0.1176 | 0.1176 | 0.0000 | 228.0511 | 228.0511 | 0.0556 | 0.0000 | 229.4400 |
| **Total** | **0.2290** | **2.0446** | **1.6649** | **2.6100e-003** | | **0.1251** | **0.1251** | | **0.1176** | **0.1176** | **0.0000** | **228.0511** | **228.0511** | **0.0556** | **0.0000** | **229.4400** |

## 3.4 Building Construction - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.3000e-003 | 0.0784 | 0.0156 | 1.8000e-004 | 4.2900e-003 | 5.9000e-004 | 4.8800e-003 | 1.2400e-003 | 5.6000e-004 | 1.8000e-003 | 0.0000 | 16.8131 | 16.8131 | 1.4300e-003 | 0.0000 | 16.8489 |
| Worker | 8.1900e-003 | 5.9700e-003 | 0.0626 | 1.7000e-004 | 0.0181 | 1.1000e-004 | 0.0182 | 4.8100e-003 | 1.0000e-004 | 4.9200e-003 | 0.0000 | 15.6590 | 15.6590 | 4.3000e-004 | 0.0000 | 15.6698 |
| **Total** | **0.0105** | **0.0843** | **0.0782** | **3.5000e-004** | **0.0224** | **7.0000e-004** | **0.0231** | **6.0500e-003** | **6.6000e-004** | **6.7200e-003** | **0.0000** | **32.4722** | **32.4722** | **1.8600e-003** | **0.0000** | **32.5187** |

### 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 | 0.2290 | 2.0446 | 1.6649 | 2.6100e-003 | | 0.1251 | 0.1251 | | 0.1176 | 0.1176 | 0.0000 | 228.0508 | 228.0508 | 0.0556 | 0.0000 | 229.4397 |
| **Total** | **0.2290** | **2.0446** | **1.6649** | **2.6100e-003** | | **0.1251** | **0.1251** | | **0.1176** | **0.1176** | **0.0000** | **228.0508** | **228.0508** | **0.0556** | **0.0000** | **229.4397** |

## 3.4 Building Construction - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.3000e-003 | 0.0784 | 0.0156 | 1.8000e-004 | 4.2900e-003 | 5.9000e-004 | 4.8800e-003 | 1.2400e-003 | 5.6000e-004 | 1.8000e-003 | 0.0000 | 16.8131 | 16.8131 | 1.4300e-003 | 0.0000 | 16.8489 |
| Worker | 8.1900e-003 | 5.9700e-003 | 0.0626 | 1.7000e-004 | 0.0181 | 1.1000e-004 | 0.0182 | 4.8100e-003 | 1.0000e-004 | 4.9200e-003 | 0.0000 | 15.6590 | 15.6590 | 4.3000e-004 | 0.0000 | 15.6698 |
| **Total** | **0.0105** | **0.0843** | **0.0782** | **3.5000e-004** | **0.0224** | **7.0000e-004** | **0.0231** | **6.0500e-003** | **6.6000e-004** | **6.7200e-003** | **0.0000** | **32.4722** | **32.4722** | **1.8600e-003** | **0.0000** | **32.5187** |

## 3.5 Paving - 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 | 0.0145 | 0.1524 | 0.1467 | 2.3000e-004 | | 8.2500e-003 | 8.2500e-003 | | 7.5900e-003 | 7.5900e-003 | 0.0000 | 20.4752 | 20.4752 | 6.4800e-003 | 0.0000 | 20.6371 |
| Paving | 6.2400e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0208** | **0.1524** | **0.1467** | **2.3000e-004** | | **8.2500e-003** | **8.2500e-003** | | **7.5900e-003** | **7.5900e-003** | **0.0000** | **20.4752** | **20.4752** | **6.4800e-003** | **0.0000** | **20.6371** |

## 3.5 Paving - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.5000e-004 | 5.4000e-004 | 5.6900e-003 | 2.0000e-005 | 1.6500e-003 | 1.0000e-005 | 1.6600e-003 | 4.4000e-004 | 1.0000e-005 | 4.5000e-004 | 0.0000 | 1.4244 | 1.4244 | 4.0000e-005 | 0.0000 | 1.4254 |
| **Total** | **7.5000e-004** | **5.4000e-004** | **5.6900e-003** | **2.0000e-005** | **1.6500e-003** | **1.0000e-005** | **1.6600e-003** | **4.4000e-004** | **1.0000e-005** | **4.5000e-004** | **0.0000** | **1.4244** | **1.4244** | **4.0000e-005** | **0.0000** | **1.4254** |

### 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 | 0.0145 | 0.1524 | 0.1467 | 2.3000e-004 | | 8.2500e-003 | 8.2500e-003 | | 7.5900e-003 | 7.5900e-003 | 0.0000 | 20.4752 | 20.4752 | 6.4800e-003 | 0.0000 | 20.6371 |
| Paving | 6.2400e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0208** | **0.1524** | **0.1467** | **2.3000e-004** | | **8.2500e-003** | **8.2500e-003** | | **7.5900e-003** | **7.5900e-003** | **0.0000** | **20.4752** | **20.4752** | **6.4800e-003** | **0.0000** | **20.6371** |

## 3.5 Paving - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.5000e-004 | 5.4000e-004 | 5.6900e-003 | 2.0000e-005 | 1.6500e-003 | 1.0000e-005 | 1.6600e-003 | 4.4000e-004 | 1.0000e-005 | 4.5000e-004 | 0.0000 | 1.4244 | 1.4244 | 4.0000e-005 | 0.0000 | 1.4254 |
| **Total** | **7.5000e-004** | **5.4000e-004** | **5.6900e-003** | **2.0000e-005** | **1.6500e-003** | **1.0000e-005** | **1.6600e-003** | **4.4000e-004** | **1.0000e-005** | **4.5000e-004** | **0.0000** | **1.4244** | **1.4244** | **4.0000e-005** | **0.0000** | **1.4254** |

## 3.6 Architectural Coating - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.0614 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.6600e-003 | 0.0184 | 0.0184 | 3.0000e-005 | | 1.2900e-003 | 1.2900e-003 | | 1.2900e-003 | 1.2900e-003 | 0.0000 | 2.5533 | 2.5533 | 2.2000e-004 | 0.0000 | 2.5587 |
| **Total** | **0.0640** | **0.0184** | **0.0184** | **3.0000e-005** | | **1.2900e-003** | **1.2900e-003** | | **1.2900e-003** | **1.2900e-003** | **0.0000** | **2.5533** | **2.5533** | **2.2000e-004** | **0.0000** | **2.5587** |

## 3.6 Architectural Coating - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5000e-004 | 1.1000e-004 | 1.1400e-003 | 0.0000 | 3.3000e-004 | 0.0000 | 3.3000e-004 | 9.0000e-005 | 0.0000 | 9.0000e-005 | 0.0000 | 0.2849 | 0.2849 | 1.0000e-005 | 0.0000 | 0.2851 |
| **Total** | **1.5000e-004** | **1.1000e-004** | **1.1400e-003** | **0.0000** | **3.3000e-004** | **0.0000** | **3.3000e-004** | **9.0000e-005** | **0.0000** | **9.0000e-005** | **0.0000** | **0.2849** | **0.2849** | **1.0000e-005** | **0.0000** | **0.2851** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.0614 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.6600e-003 | 0.0184 | 0.0184 | 3.0000e-005 | | 1.2900e-003 | 1.2900e-003 | | 1.2900e-003 | 1.2900e-003 | 0.0000 | 2.5533 | 2.5533 | 2.2000e-004 | 0.0000 | 2.5586 |
| **Total** | **0.0640** | **0.0184** | **0.0184** | **3.0000e-005** | | **1.2900e-003** | **1.2900e-003** | | **1.2900e-003** | **1.2900e-003** | **0.0000** | **2.5533** | **2.5533** | **2.2000e-004** | **0.0000** | **2.5586** |

### 3.6 Architectural Coating - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5000e-004 | 1.1000e-004 | 1.1400e-003 | 0.0000 | 3.3000e-004 | 0.0000 | 3.3000e-004 | 9.0000e-005 | 0.0000 | 9.0000e-005 | 0.0000 | 0.2849 | 0.2849 | 1.0000e-005 | 0.0000 | 0.2851 |
| **Total** | **1.5000e-004** | **1.1000e-004** | **1.1400e-003** | **0.0000** | **3.3000e-004** | **0.0000** | **3.3000e-004** | **9.0000e-005** | **0.0000** | **9.0000e-005** | **0.0000** | **0.2849** | **0.2849** | **1.0000e-005** | **0.0000** | **0.2851** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Implement Trip Reduction Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 1.5756 | 1.1971 | 8.7569 | 0.0128 | 1.1977 | 0.0157 | 1.2134 | 0.3183 | 0.0146 | 0.3328 | 0.0000 | 1,153.5669 | 1,153.5669 | 0.0652 | 0.0000 | 1,155.1972 |
| Unmitigated | 1.5811 | 1.2135 | 8.9019 | 0.0133 | 1.2463 | 0.0160 | 1.2624 | 0.3312 | 0.0149 | 0.3461 | 0.0000 | 1,192.9637 | 1,192.9637 | 0.0666 | 0.0000 | 1,194.6277 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Automobile Care Center | 426.00 | 912.00 | 912.00 | 610,098 | 583,160 |
| Convenience Market With Gas Pumps | 3,688.32 | 4,666.72 | 4666.72 | 1,387,211 | 1,334,957 |
| Fast Food Restaurant with Drive Thru | 2,058.05 | 2,692.44 | 2065.17 | 1,333,095 | 1,282,431 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 6,172.37 | 8,271.16 | 7,643.89 | 3,330,404 | 3,200,549 |

## 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 |
| Automobile Care Center | 16.60 | 4.00 | 6.90 | 33.00 | 48.00 | 19.00 | 21 | 51 | 28 |
| Convenience Market With Gas | 16.60 | 4.00 | 6.90 | 0.80 | 80.20 | 19.00 | 14 | 21 | 65 |
| Fast Food Restaurant with Drive | 16.60 | 4.00 | 6.90 | 2.20 | 78.80 | 19.00 | 29 | 21 | 50 |
| Parking Lot | 16.60 | 4.00 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Automobile Care Center | 0.800000 | 0.080000 | 0.060000 | 0.040000 | 0.000000 | 0.000000 | 0.009000 | 0.001000 | 0.000000 | 0.000000 | 0.010000 | 0.000000 | 0.000000 |
| Convenience Market With Gas Pumps | 0.800000 | 0.080000 | 0.060000 | 0.040000 | 0.000000 | 0.000000 | 0.009000 | 0.001000 | 0.000000 | 0.000000 | 0.010000 | 0.000000 | 0.000000 |
| Fast Food Restaurant with Drive Thru | 0.800000 | 0.080000 | 0.060000 | 0.040000 | 0.000000 | 0.000000 | 0.009000 | 0.001000 | 0.000000 | 0.000000 | 0.010000 | 0.000000 | 0.000000 |
| Parking Lot | 0.533383 | 0.039495 | 0.183627 | 0.126156 | 0.018688 | 0.005561 | 0.017029 | 0.066607 | 0.001345 | 0.001247 | 0.004677 | 0.000974 | 0.001211 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 86.4380 | 86.4380 | 3.5700e-003 | 7.4000e-004 | 86.7472 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 99.1457 | 99.1457 | 4.0900e-003 | 8.5000e-004 | 99.5004 |
| NaturalGas Mitigated | 6.5000e-003 | 0.0591 | 0.0496 | 3.5000e-004 | | 4.4900e-003 | 4.4900e-003 | | 4.4900e-003 | 4.4900e-003 | 0.0000 | 64.2858 | 64.2858 | 1.2300e-003 | 1.1800e-003 | 64.6679 |
| NaturalGas Unmitigated | 7.0300e-003 | 0.0639 | 0.0537 | 3.8000e-004 | | 4.8600e-003 | 4.8600e-003 | | 4.8600e-003 | 4.8600e-003 | 0.0000 | 69.5560 | 69.5560 | 1.3300e-003 | 1.2800e-003 | 69.9693 |

## 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 | | | | | |
| Automobile Care Center | 97470 | 5.3000e-004 | 4.7800e-003 | 4.0100e-003 | 3.0000e-005 | | 3.6000e-004 | 3.6000e-004 | | 3.6000e-004 | 3.6000e-004 | 0.0000 | 5.2014 | 5.2014 | 1.0000e-004 | 1.0000e-004 | 5.2323 |
| Convenience Market With Gas Pumps | 11026.7 | 6.0000e-005 | 5.4000e-004 | 4.5000e-004 | 0.0000 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 0.5884 | 0.5884 | 1.0000e-005 | 1.0000e-005 | 0.5919 |
| Fast Food Restaurant with Drive Thru | 1.19493e+006 | 6.4400e-003 | 0.0586 | 0.0492 | 3.5000e-004 | | 4.4500e-003 | 4.4500e-003 | | 4.4500e-003 | 4.4500e-003 | 0.0000 | 63.7662 | 63.7662 | 1.2200e-003 | 1.1700e-003 | 64.1451 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **7.0300e-003** | **0.0639** | **0.0537** | **3.8000e-004** | | **4.8500e-003** | **4.8500e-003** | | **4.8500e-003** | **4.8500e-003** | **0.0000** | **69.5560** | **69.5560** | **1.3300e-003** | **1.2800e-003** | **69.9693** |

## 5.2 Energy by Land Use - NaturalGas

**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 | | | | | |
| Automobile Care Center | 85950 | 4.6000e-004 | 4.2100e-003 | 3.5400e-003 | 3.0000e-005 | | 3.2000e-004 | 3.2000e-004 | | 3.2000e-004 | 3.2000e-004 | 0.0000 | 4.5866 | 4.5866 | 9.0000e-005 | 8.0000e-005 | 4.6139 |
| Convenience Market With Gas Pumps | 8642.58 | 5.0000e-005 | 4.2000e-004 | 3.6000e-004 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | 0.0000 | 0.4612 | 0.4612 | 1.0000e-005 | 1.0000e-005 | 0.4639 |
| Fast Food Restaurant with Drive Thru | 1.11008e+006 | 5.9900e-003 | 0.0544 | 0.0457 | 3.3000e-004 | | 4.1400e-003 | 4.1400e-003 | | 4.1400e-003 | 4.1400e-003 | 0.0000 | 59.2380 | 59.2380 | 1.1400e-003 | 1.0900e-003 | 59.5900 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **6.5000e-003** | **0.0591** | **0.0496** | **3.6000e-004** | | **4.4900e-003** | **4.4900e-003** | | **4.4900e-003** | **4.4900e-003** | **0.0000** | **64.2858** | **64.2858** | **1.2400e-003** | **1.1800e-003** | **64.6679** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Automobile Care Center | 30450 | 9.7020 | 4.0000e-004 | 8.0000e-005 | 9.7367 |
| Convenience Market With Gas Pumps | 62733.2 | 19.9881 | 8.3000e-004 | 1.7000e-004 | 20.0597 |
| Fast Food Restaurant with Drive Thru | 207488 | 66.1100 | 2.7300e-003 | 5.6000e-004 | 66.3465 |
| Parking Lot | 10500 | 3.3455 | 1.4000e-004 | 3.0000e-005 | 3.3575 |
| **Total** | | **99.1457** | **4.1000e-003** | **8.4000e-004** | **99.5004** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Automobile Care Center | 26602.5 | 8.4761 | 3.5000e-004 | 7.0000e-005 | 8.5065 |
| Convenience Market With Gas Pumps | 50079.8 | 15.9565 | 6.6000e-004 | 1.4000e-004 | 16.0136 |
| Fast Food Restaurant with Drive Thru | 186730 | 59.4962 | 2.4600e-003 | 5.1000e-004 | 59.7091 |
| Parking Lot | 7875 | 2.5091 | 1.0000e-004 | 2.0000e-005 | 2.5181 |
| **Total** | | **86.4380** | **3.5700e-003** | **7.4000e-004** | **86.7472** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0528 | 1.0000e-005 | 1.2700e-003 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.4400e-003 | 2.4400e-003 | 1.0000e-005 | 0.0000 | 2.6100e-003 |
| Unmitigated | 0.0528 | 1.0000e-005 | 1.2700e-003 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.4400e-003 | 2.4400e-003 | 1.0000e-005 | 0.0000 | 2.6100e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 6.1400e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0465 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.2000e-004 | 1.0000e-005 | 1.2700e-003 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.4400e-003 | 2.4400e-003 | 1.0000e-005 | 0.0000 | 2.6100e-003 |
| **Total** | **0.0528** | **1.0000e-005** | **1.2700e-003** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **2.4400e-003** | **2.4400e-003** | **1.0000e-005** | **0.0000** | **2.6100e-003** |

### 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 6.1400e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0465 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.2000e-004 | 1.0000e-005 | 1.2700e-003 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.4400e-003 | 2.4400e-003 | 1.0000e-005 | 0.0000 | 2.6100e-003 |
| **Total** | **0.0528** | **1.0000e-005** | **1.2700e-003** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **2.4400e-003** | **2.4400e-003** | **1.0000e-005** | **0.0000** | **2.6100e-003** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 13.3528 | 0.0492 | 1.2600e-003 | 14.9582 |
| Unmitigated | 20.0345 | 0.0495 | 1.3200e-003 | 21.6638 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Automobile Care Center | 0 / 3.58786 | 12.7006 | 5.2000e-004 | 1.1000e-004 | 12.7461 |
| Convenience Market With Gas Pumps | 0.167315 / 0.102548 | 1.1102 | 5.5000e-003 | 1.4000e-004 | 1.2887 |
| Fast Food Restaurant with Drive Thru | 1.32644 / 0.0846665 | 6.2236 | 0.0435 | 1.0700e-003 | 7.6291 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **20.0345** | **0.0495** | **1.3200e-003** | **21.6638** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Automobile Care Center | 0 / 1.79393 | 6.3503 | 2.6000e-004 | 5.0000e-005 | 6.3730 |
| Convenience Market With Gas Pumps | 0.167315 / 0.0512739 | 0.9287 | 5.4900e-003 | 1.4000e-004 | 1.1065 |
| Fast Food Restaurant with Drive Thru | 1.32644 / 0.0423333 | 6.0738 | 0.0435 | 1.0700e-003 | 7.4787 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **13.3528** | **0.0492** | **1.2600e-003** | **14.9582** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 7.7888 | 0.4603 | 0.0000 | 19.2963 |
| Unmitigated | 15.5775 | 0.9206 | 0.0000 | 38.5927 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Automobile Care Center | 26.4 | 5.3590 | 0.3167 | 0.0000 | 13.2766 |
| Fast Food Restaurant with Drive Thru | 50.34 | 10.2186 | 0.6039 | 0.0000 | 25.3161 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **15.5775** | **0.9206** | **0.0000** | **38.5927** |

### 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Automobile Care Center | 13.2 | 2.6795 | 0.1584 | 0.0000 | 6.6383 |
| Fast Food Restaurant with Drive Thru | 25.17 | 5.1093 | 0.3020 | 0.0000 | 12.6580 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **7.7888** | **0.4603** | **0.0000** | **19.2963** |

## 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

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | 35.4000 | 0.0000 | 0.0000 | 35.4000 |

## 11.2 Net New Trees

**Species Class**

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Aspen | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Cedar/Larch | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Douglas Fir | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hardwood Maple | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Juniper | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Miscellaneous | 50 | 35.4000 | 0.0000 | 0.0000 | 35.4000 |
| Mixed Hardwood | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Pine | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Soft Maple | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Spruce | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| True Fir/Hemlock | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **35.4000** | **0.0000** | **0.0000** | **35.4000** |