# Rancho Palma

## AIR QUALITY IMPACT ANALYSIS

### CITY OF SAN BERNARDINO

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# LIST OF ABBREVIATED TERMS

| | |
|---|---|
| (1) | Reference |
| µg/m3 | Microgram per Cubic Meter |
| AADT | Annual Average Daily Trips |
| AQIA | Air Quality Impact Analysis |
| AQMD | Air Quality Management District |
| AQMP | Air Quality Management Plan |
| ARB | California Air Resources Board |
| BACM | Best Available Control Measures |
| CAA | Federal Clean Air Act |
| CAAQS | California Ambient Air Quality Standards |
| CalEEMod | California Emissions Estimator Model |
| Caltrans | California Department of Transportation |
| CAPCOA | California Air Pollution Control Officers Association |
| CARB | California Air Resources Board |
| CCR | California Code of Regulations |
| CEQA | California Environmental Quality Act |
| CFR | Code of Federal Regulations |
| CO | Carbon Monoxide |
| EPA | Environmental Protection Agency |
| LST | Localized Significance Threshold |
| NAAQS | National Ambient Air Quality Standards |
| NO2 | Nitrogen Dioxide |
| NOx | Oxides of Nitrogen |
| Pb | Lead |
| PM10 | Particulate Matter 10 microns in diameter or less |
| PM2.5 | Particulate Matter 2.5 microns in diameter or less |
| PPM | Parts Per Million |
| Project | Rancho Palma |
| ROG | Reactive Organic Gases |
| SCAB | South Coast Air Basin |
| SCAQMD | South Coast Air Quality Management District |
| SIPs | State Implementation Plans |
| SRA | Source Receptor Area |
| TAC | Toxic Air Contaminant |
| TIA | Traffic Impact Analysis |
| TOG | Total Organic Gases |

| | |
|---|---|
| VMT | Vehicle Miles Traveled |
| VOC | Volatile Organic Compounds |

# EXECUTIVE SUMMARY

## Short-Term Construction

*REGIONAL IMPACTS*

Project construction-source emissions would not exceed the numerical regional thresholds of significance established by the South Coast Air Quality Management District (SCAQMD). Notwithstanding, best available control measures (BACM) AQ-1 is recommended to further reduce the severity of the impacts. Thus a less than significant impact would occur for Project-related construction-source emissions both with and without implementation of BACM AQ-1.

*LOCALIZED IMPACTS*

Without BACMs, emissions during construction activity has the potential to exceed the SCAQMD's localized significance threshold for $PM_{2.5}$ only. BACM AQ-1 is recommended to reduce the impacts to less than significant levels. After implementation of BACM AQ-1, construction-source emissions will not exceed SCAQMD's localized significance thresholds for any applicable pollutants and a less than significant impact will occur.

Project construction-source emissions would not conflict with the applicable Air Quality Management Plan (AQMP).

*ODORS*

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less-than-significant.

## Long-Term Operational

*REGIONAL IMPACTS*

For regional emissions, the Project has the potential to exceed the numerical thresholds of significance established by the SCAQMD for emissions of $NO_x$. MM AQ-1 and MM AQ-2 are recommended to reduce the impacts to less than significant levels. After implementation of MM AQ-1 and MM AQ-2, a less than significant impact would occur for Project-related operational-source emissions.

*LOCALIZED IMPACTS*

Project operational-source emissions would not result in or cause a significant localized air quality impact as discussed in the operational LSTs section of this report. The proposed Project would not result in a significant CO "hotspot" as a result of Project related traffic during ongoing operations, nor would the Project result in a significant adverse health impact as

discussed in Section 3.8, thus a less than significant impact to sensitive receptors during operational activity is expected. Lastly, Project operational-source emissions would not conflict with the applicable AQMP.

*ODORS*

Substantial odor-generating sources include land uses such as agricultural activities, feedlots, wastewater treatment facilities, landfills or various heavy industrial uses. The Project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential sources of operational odors generated by the Project would include disposal of miscellaneous residential and commercial refuse. Moreover, SCAQMD Rule 402 acts to prevent occurrences of odor nuisances (1) . Consistent with City requirements, all Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with solid waste regulations. Potential operational-source odor impacts are therefore considered less-than-significant.

# 1 INTRODUCTION

This report presents the results of the air quality impact analysis (AQIA) prepared by Urban Crossroads, Inc., for the Rancho Palma Project (referred to as "Project"), which is located in the City of San Bernardino northeast of W. Little League Drive and northwest of Palm Avenue, as shown on Exhibit 1-A.

The purpose of this AQIA is to evaluate the potential impacts to air quality associated with construction and operation of the proposed Project, and recommend measures to mitigate impacts considered potentially significant in comparison to established regulatory thresholds.

## 1.1 PROJECT OVERVIEW

The Project is proposed to include the development of 120 single family detached residential dwelling units and 98,000 square feet of commercial retail use, as shown on Exhibit 1-B. The Project site is currently vacant and not emitting any emissions. For the purposes of this analysis, potential impacts have been assessed for two development phases. The two phases and their anticipated opening years are as follows:

- Phase 1 (2018) – 120 single family detached residential dwelling units (Western Half)
- Phase 2 (2019) – 98,000 square feet of commercial retail use (Eastern Half)

For the purposes of this AQIA, it is assumed that the Project will be constructed and at full occupancy by 2019.

## EXHIBIT 1-A: LOCATION MAP


**LEGEND:**

**EXHIBIT 1-B: SITE PLAN**

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# 2 AIR QUALITY SETTING

This section provides an overview of the existing air quality conditions in the Project area and region.

## 2.1 SOUTH COAST AIR BASIN

The Project site is located in the South Coast Air Basin (SCAB) within the jurisdiction of SCAQMD (2). The SCAQMD was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the SCAQMD is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. As discussed above, the Project site is located within the South Coast Air Basin, a 6,745-square mile subregion of the SCAQMD, which includes portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County. The larger South Coast district boundary includes 10,743 square miles.

The SCAB is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Los Angeles County portion of the Mojave Desert Air Basin is bound by the San Gabriel Mountains to the south and west, the Los Angeles / Kern County border to the north, and the Los Angeles / San Bernardino County border to the east. The Riverside County portion of the Salton Sea Air Basin is bound by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley.

## 2.2 REGIONAL CLIMATE

The regional climate has a substantial influence on air quality in the SCAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality.

The annual average temperatures throughout the SCAB vary from the low to middle 60s (degrees Fahrenheit). Due to a decreased marine influence, the eastern portion of the SCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SCAB, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the SCAB have recorded maximum temperatures above 100°F.

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB, and the conversion of sulfur dioxide to sulfates is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the SCAB is 71 percent along the coast and 59 percent inland. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90 percent of the SCAB's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the SCAB with frequency being higher near the coast.

Due to its generally clear weather, about three-quarters of available sunshine is received in the SCAB. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and on the longest day of the year there are approximately 14 1/2 hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SCAB is the "Catalina Eddy," a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections.

In the SCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter, when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as NOX and CO from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

## 2.3 WIND PATTERNS AND PROJECT LOCATION

The distinctive climate of the Project area and the SCAB is determined by its terrain and geographical location. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter.

Wind patterns across the south coastal region are characterized by westerly and southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season. However, during the dry summer months there are seasonal "Santa Ana" winds, which are strong, extremely down-slope winds, that move through the region. See section 2.2 Regional Climate for additional information.

## 2.4 EXISTING AIR QUALITY

Existing air quality is measured at established SCAQMD air quality monitoring stations. Monitored air quality is evaluated and in the context of ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) currently in effect are shown in Table 2-1 (3).

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the state and federal standards presented in Table 2-1. The air quality in a region is considered to be in attainment by the state if the measured ambient air pollutant levels for O3, CO, SO2, NO2, PM10, and PM2.5 are not equaled or exceeded at any time in any consecutive three-year period; and the federal standards (other than O3, PM10, PM2.5, and those based on annual averages or arithmetic mean) are not exceeded more than once per year. The O3 standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

**TABLE 2-1: AMBIENT AIR QUALITY STANDARDS (1 OF 2)**

## Ambient Air Quality Standards

| Pollutant | Averaging Time | California Standards [1] | | National Standards [2] | | |
|---|---|---|---|---|---|---|
| | | Concentration [3] | Method [4] | Primary [3,5] | Secondary [3,6] | Method [7] |
| Ozone ($O_3$)[8] | 1 Hour | 0.09 ppm (180 µg/m$^3$) | Ultraviolet Photometry | — | Same as Primary Standard | Ultraviolet Photometry |
| | 8 Hour | 0.070 ppm (137 µg/m$^3$) | | 0.070 ppm (137 µg/m$^3$) | | |
| Respirable Particulate Matter (PM10)[9] | 24 Hour | 50 µg/m$^3$ | Gravimetric or Beta Attenuation | 150 µg/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 20 µg/m$^3$ | | — | | |
| Fine Particulate Matter (PM2.5)[9] | 24 Hour | — | — | 35 µg/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 12 µg/m$^3$ | Gravimetric or Beta Attenuation | 12.0 µg/m$^3$ | 15 µg/m$^3$ | |
| Carbon Monoxide (CO) | 1 Hour | 20 ppm (23 mg/m$^3$) | Non-Dispersive Infrared Photometry (NDIR) | 35 ppm (40 mg/m$^3$) | — | Non-Dispersive Infrared Photometry (NDIR) |
| | 8 Hour | 9.0 ppm (10 mg/m$^3$) | | 9 ppm (10 mg/m$^3$) | — | |
| | 8 Hour (Lake Tahoe) | 6 ppm (7 mg/m$^3$) | | — | — | |
| Nitrogen Dioxide ($NO_2$)[10] | 1 Hour | 0.18 ppm (339 µg/m$^3$) | Gas Phase Chemiluminescence | 100 ppb (188 µg/m$^3$) | — | Gas Phase Chemiluminescence |
| | Annual Arithmetic Mean | 0.030 ppm (57 µg/m$^3$) | | 0.053 ppm (100 µg/m$^3$) | Same as Primary Standard | |
| Sulfur Dioxide ($SO_2$)[11] | 1 Hour | 0.25 ppm (655 µg/m$^3$) | Ultraviolet Fluorescence | 75 ppb (196 µg/m$^3$) | — | Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method) |
| | 3 Hour | — | | — | 0.5 ppm (1300 µg/m$^3$) | |
| | 24 Hour | 0.04 ppm (105 µg/m$^3$) | | 0.14 ppm (for certain areas)[10] | — | |
| | Annual Arithmetic Mean | — | | 0.030 ppm (for certain areas)[10] | — | |
| Lead[12,13] | 30 Day Average | 1.5 µg/m$^3$ | Atomic Absorption | — | — | High Volume Sampler and Atomic Absorption |
| | Calendar Quarter | — | | 1.5 µg/m$^3$ (for certain areas)[12] | Same as Primary Standard | |
| | Rolling 3-Month Average | — | | 0.15 µg/m$^3$ | | |
| Visibility Reducing Particles[14] | 8 Hour | See footnote 13 | Beta Attenuation and Transmittance through Filter Tape | No National Standards | | |
| Sulfates | 24 Hour | 25 µg/m$^3$ | Ion Chromatography | | | |
| Hydrogen Sulfide | 1 Hour | 0.03 ppm (42 µg/m$^3$) | Ultraviolet Fluorescence | | | |
| Vinyl Chloride[12] | 24 Hour | 0.01 ppm (26 µg/m$^3$) | Gas Chromatography | | | |

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (10/1/15)

## TABLE 2-1: AMBIENT AIR QUALITY STANDARDS (2 OF 2)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

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

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour $SO_2$ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 $SO_2$ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12. The ARB 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.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

**For more information please call ARB-PIO at (916) 322-2990** **California Air Resources Board (10/1/15)**

## 2.5 REGIONAL AIR QUALITY

The SCAQMD monitors levels of various criteria pollutants at 30 monitoring stations throughout the air district. In 2013, the federal and state ambient air quality standards (NAAQS and CAAQS) were exceeded on one or more days for ozone, PM10, and PM2.5 at most monitoring locations (4). No areas of the SCAB exceeded federal or state standards for NO2, SO2, CO, sulfates or lead. See Table 2-2 for attainment designations for the SCAB (5). Appendix 3.1 provides geographic representation of the state and federal attainment status for applicable criteria pollutants within the SCAB.

## 2.6 LOCAL AIR QUALITY

Relative to the Project site, the nearest long-term air quality monitoring site for Ozone ($O_3$), Carbon Monoxide (CO), Nitrogen Dioxide ($NO_2$), Inhalable Particulates ($PM_{10}$) and Ultra-Fine Particulates ($PM_{2.5}$) is the South Coast Air Quality Management District Central San Bernardino Valley 2 monitoring station, located approximately 9.2 miles southeast of the Project site in the City of San Bernardino (SRA 34) (8).

The most recent three (3) years of data available is shown on Table 2-3 and identifies the number of days ambient air quality standards were exceeded for the study area, which is was considered to be representative of the local air quality at the Project site (6). Additionally, data for SO2 has been omitted as attainment is regularly met in the South Coast Air Basin and few monitoring stations measure SO2 concentrations.

Criteria pollutants are pollutants that are regulated through the development of human health based and/or environmentally based criteria for setting permissible levels. Criteria pollutants, their typical sources, and effects are identified below (7):

- Carbon Monoxide (CO): Is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- Sulfur Dioxide (SO2): Is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO2 oxidizes in the atmosphere, it forms sulfates (SO4). Collectively, these pollutants are referred to as sulfur oxides (SOX).

**TABLE 2-2: ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SOUTH COAST AIR BASIN (SCAB)**

| Criteria Pollutant | State Designation | Federal Designation |
|---|---|---|
| Ozone - 1hour standard | Nonattainment | No Standard |
| Ozone - 8 hour standard | Nonattainment | Nonattainment |
| $PM_{10}$ | Nonattainment | Attainment |
| $PM_{2.5}$ | Nonattainment | Nonattainment |
| Carbon Monoxide | Attainment | Attainment |
| Nitrogen Dioxide | Attainment | Attainment |
| Sulfur Dioxide | Attainment | Attainment |
| Lead[1] | Attainment | Attainment |

Source: State/Federal designations were taken from http://www.arb.ca.gov/desig/adm/adm.htm
Note: See Appendix 3.1 for a detailed map of State/National Area Designations within the South Coast Air Basin

[1] The Federal nonattainment designation for lead is only applicable towards the Los Angeles County portion of the SCAB.

**TABLE 2-3: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2012-2014**

| POLLUTANT | STANDARD | YEAR | | |
|---|---|---|---|---|
| | | 2012 | 2013 | 2014 |
| Ozone ($O_3$) | | | | |
| Maximum 1-Hour Concentration (ppm) | | 0.124 | 0.139 | 0.121 |
| Maximum 8-Hour Concentration (ppm) | | 0.109 | 0.112 | 0.099 |
| Number of Days Exceeding State 1-Hour Standard | > 0.09 ppm | 41 | 22 | 38 |
| Number of Days Exceeding State 8-Hour Standard | > 0.07 ppm | 74 | 53 | 76 |
| Number of Days Exceeding Federal 1-Hour Standard | > 0.12 ppm | 0 | 2 | 0 |
| Number of Days Exceeding Federal 8-Hour Standard | > 0.075 ppm | 54 | 36 | 51 |
| Number of Days Exceeding Health Advisory | ≥ 0.15 ppm | 0 | 0 | 0 |
| Carbon Monoxide (CO) | | | | |
| Maximum 1-Hour Concentration (ppm) | | -- | -- | 4.0 |
| Maximum 8-Hour Concentration (ppm) | | 1.70 | 1.7 | 2.4 |
| Number of Days Exceeding State 1-Hour Standard | > 20 ppm | 0 | 0 | -- |
| Number of Days Exceeding Federal / State 8-Hour Standard | > 9.0 ppm | 0 | 0 | -- |
| Number of Days Exceeding Federal 1-Hour Standard | > 35 ppm | 0 | 0 | -- |
| Nitrogen Dioxide ($NO_2$) | | | | |
| Maximum 1-Hour Concentration (ppm) | | 0.067 | 0.072 | 0.073 |
| Annual Arithmetic Mean Concentration (ppm) | | 0.019 | 0.018 | 0.018 |
| Number of Days Exceeding State 1-Hour Standard | > 0.18 ppm | 0 | 0 | 0 |
| Particulate Matter ≤ 10 Microns ($PM_{10}$) | | | | |
| Maximum 24-Hour Concentration ($\mu g/m^3$) | | 53 | 102 | 136 |
| Number of Samples | | 55 | 60 | 60 |
| Number of Samples Exceeding State Standard | > 50 $\mu g/m^3$ | 1 | 3 | 4 |
| Number of Samples Exceeding Federal Standard | > 150 $\mu g/m^3$ | 0 | 0 | 0 |
| Particulate Matter ≤ 2.5 Microns ($PM_{2.5}$) | | | | |
| Maximum 24-Hour Concentration ($\mu g/m^3$) | | 34.8 | 55.3 | 73.9 |
| Annual Arithmetic Mean ($\mu g/m^3$) | | 11.8 | 11.41 | -- |
| Number of Samples Exceeding Federal 24-Hour Standard | > 35 $\mu g/m^3$ | 0 | 1 | 1 |

--= Data not available from either SCAQMD or EPA

- Nitrogen Oxides (Oxides of Nitrogen, or NOx): Nitrogen oxides (NOx) consist of nitric oxide (NO), nitrogen dioxide (NO2) and nitrous oxide (N2O) and are formed when nitrogen (N2) combines with oxygen (O2). Their lifespan in the atmosphere ranges from one to seven days for nitric oxide and nitrogen dioxide, to 170 years for nitrous oxide. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO2 is a criteria air pollutant, and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. Of

the seven types of nitrogen oxide compounds, NO2 is the most abundant in the atmosphere. As ambient concentrations of NO2 are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO2 than those indicated by regional monitors.

- Ozone (O3): Is a highly reactive and unstable gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOX) undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- PM10 (Particulate Matter less than 10 microns): A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM10 also causes visibility reduction and is a criteria air pollutant.
- PM2.5 (Particulate Matter less than 2.5 microns): A similar air pollutant consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO2 release from power plants and industrial facilities and nitrates that are formed from NOX release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions. PM2.5 is a criteria air pollutant.
- Volatile Organic Compounds (VOC): Volatile organic compounds are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include: carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a precursor to O3, which is a criteria pollutant. The SCAQMD uses the terms VOC and ROG (see below) interchangeably.
- Reactive Organic Gases (ROG): Similar to VOC, Reactive Organic Gases (ROG) are also precursors in forming ozone. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight. The SCAQMD uses the terms ROG and VOC (see previous) interchangeably.
- Lead (Pb): Lead is a heavy metal that is highly persistent in the environment. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. As a result of the removal of lead from gasoline, there have been no violations at any of the SCAQMD's regular air monitoring stations since 1982. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. It should be noted that the Project is not anticipated to generate a quantifiable amount of lead emissions. Lead is a criteria air pollutant.

## Health Effects of Air Pollutants

### Ozone

Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible sub-

groups for ozone effects. Short-term exposure (lasting for a few hours) to ozone 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. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Ozone exposure under exercising conditions is known to increase the severity of the responses described above. Animal studies suggest that exposure to a combination of pollutants that includes ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Carbon Monoxide

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of decreased oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.

Reduction in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO, resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels; these include pre-term births and heart abnormalities.

Particulate Matter

A consistent correlation between elevated ambient fine particulate matter (PM10 and PM2.5) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in PM2.5 concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter.

The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of high levels of PM10 and PM2.5.

Nitrogen Dioxide

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposure to NO2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO2 considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO2.

Sulfur Dioxide

A few minutes of exposure to low levels of SO2 can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO2.

Animal studies suggest that despite SO2 being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO2 levels. In these studies, efforts to separate the effects of SO2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased Pb levels are associated with increased blood pressure.

Pb poisoning can cause anemia, lethargy, seizures, and death; although it appears that there are no direct effects of Pb on the respiratory system. Pb can be stored in the bone from early

age environmental exposure, and elevated blood Pb levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb because of previous environmental Pb exposure of their mothers.

Odors

The science of odor as a health concern is still new. Merely identifying the hundreds of VOCs that cause odors poses a big challenge. Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, studies have shown that the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

## 2.7 REGULATORY BACKGROUND

### 2.7.1 FEDERAL REGULATIONS

The U.S. EPA is responsible for setting and enforcing the NAAQS for O3, CO, NOx, SO2, PM10, PM2.5, and lead (3). The U.S. EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The U.S. EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of the CARB.

The Federal Clean Air Act (CAA) was first enacted in 1955, and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance (8). The CAA also mandates that states submit and implement State Implementation Plans (SIPs) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O3, NO2, SO2, PM10, CO, PM2.5, and lead. The NAAQS were amended in July 1997 to include an additional standard for O3 and to adopt a NAAQS for PM2.5. Table 2-1 (previously presented) provides the NAAQS within the basin.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of

hydrocarbons and nitrogen oxides (NOx). NOx is a collective term that includes all forms of nitrogen oxides (NO, NO2, NO3) which are emitted as byproducts of the combustion process.

### 2.7.2 CALIFORNIA REGULATIONS

The CARB, which became part of the California EPA in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. The California CAA mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. The CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However at this time, hydrogen sulfide and vinyl chloride are not measured at any monitoring stations in the SCAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS (9) (3).

Local air quality management districts, such as the SCAQMD, regulate air emissions from commercial and light industrial facilities. All Basins have been formally designated as attainment or non-attainment for each CAAQS.

Non-attainment areas are required to prepare air quality management plans that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development);
- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a five percent or more annual reduction in emissions or 15 percent or more in a period of three years for ROGs, NOx, CO and PM10. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than five percent per year under certain circumstances.

### 2.7.3 AIR QUALITY MANAGEMENT PLANNING

Currently, the NAAQS and CAAQS are exceeded in most parts of the SCAB. In regards to the NAAQS, the Project region within the SCAB is in nonattainment for ozone (8-hour) and PM2.5. For the CAAQS, the Project region within the SCAB is in nonattainment for ozone (1-hour and 8-hour), PM10, and PM2.5. In response, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards (7). AQMPs are updated regularly in order to more effectively reduce emissions, accommodate

growth, and to minimize any negative fiscal impacts of air pollution control on the economy. A detailed discussion on the AQMP and Project consistency with the AQMP is provided in Section 3.9.

## 2.8 EXISTING PROJECT SITE AIR QUALITY CONDITIONS

Existing air quality conditions at the Project site would generally reflect ambient monitored conditions as presented previously at Table 2-3.

# 3 PROJECT AIR QUALITY IMPACT

## 3.1 INTRODUCTION

The Project has been evaluated to determine if it will violate an air quality standard or contribute to an existing or projected air quality violation. The Project has also been evaluated to determine conformity with the CAA. Additionally, the Project has been evaluated to determine if it will result in a cumulatively considerable net increase of a criteria pollutant for which the SCAB is non-attainment under an applicable federal or state ambient air quality standard. The significance of these potential impacts is described in the following section.

## 3.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related air quality impacts are taken from the Initial Study Checklist in Appendix G of the State CEQA Guidelines (14 California Code of Regulations §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would (10):

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute to an existing or projected air quality violation.
- 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).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

The SCAQMD has also developed regional and localized significance thresholds for other regulated pollutants, as summarized at Table 3-1 (11). The SCAQMD's CEQA Air Quality Significance Thresholds (March 2011) indicate that any projects in the SCAB with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

**TABLE 3-1: MAXIMUM DAILY EMISSIONS THRESHOLDS**

| Pollutant | Construction | Operations |
|---|---|---|
| **Regional Thresholds** | | |
| NOx | 100 lbs/day | 55 lbs/day |
| VOC | 75 lbs/day | 55 lbs/day |
| PM10 | 150 lbs/day | 150 lbs/day |
| PM2.5 | 55 lbs/day | 55 lbs/day |
| Sox | 150 lbs/day | 150 lbs/day |
| CO | 550 lbs/day | 550 lbs/day |
| Lead | 3 lbs/day | 3 lbs/day |
| **Localized Thresholds** | | |
| CO | 1,359 lbs/day (Site Preparation) | N/A |
| | 1,488 lbs/day (Grading) | |
| NOx | 220 lbs/day (Site Preparation) | N/A |
| | 237 lbs/day (Grading) | |
| PM10 | 11 lbs/day (Site Preparation) | N/A |
| | 12 lbs/day (Grading) | |
| PM2.5 | 6 lbs/day (Site Preparation) | N/A |
| | 7 lbs/day (Grading) | |

Note: lbs/day – pounds per day. Localized thresholds for construction emissions are based on the SCAQMD look-up tables for a four acre disturbance with the nearest sensitive receptor 25 meters away.

## 3.3 PROJECT-RELATED SOURCES OF POTENTIAL IMPACT

Land uses such as the Project affect air quality through construction-source and operational-source emissions.

On October 2, 2013, the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) released the latest version of the California Emissions Estimator Model™ (CalEEMod™) v2013.2.2. The purpose of this model is to calculate construction-source and operational-source criteria pollutant ($NO_x$, VOC, $PM_{10}$, $PM_{2.5}$, $SO_x$, and CO) and greenhouse gas (GHG) emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures. Accordingly, the latest version of CalEEMod™ has been used for this Project to determine construction and operational air quality emissions. Output from the model runs for both construction and operational activity are provided in Appendix 3.2.

## 3.4 CONSTRUCTION EMISSIONS

Construction activities associated with the Project will result in emissions of CO, VOCs, NOx, SOx, PM10, and PM2.5. Construction related emissions are expected from the following construction activities:

- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating
- Construction Workers Commuting

Construction is expected to commence in January 2017 and will last through May 31 2019. Construction duration by phase is shown on Table 3-2. The construction schedule utilized in the analysis represents a "worst-case" analysis scenario should construction occur any time after the respective dates since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.[2] The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per CEQA guidelines. Site specific construction fleet may vary due to specific project needs at the time of construction. The duration of construction activity and construction equipment were based CalEEMod 2013.2.2 defaults. Please refer to specific detailed modeling inputs/outputs contained in Appendix 3.2 of this analysis. A detailed summary of construction equipment assumptions by phase is provided at Table 3-3.

Dust is typically a major concern during rough grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions". Fugitive dust emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). The CalEEMod model was utilized to calculate fugitive dust emissions resulting from this phase of activity. The Project site is currently vacant and will not require demolition. It is our understanding the site will balance (will not require soil import/export).

Construction emissions for construction worker vehicles traveling to and from the Project site, as well as vendor trips (construction materials delivered to the Project site) were estimated based on information CalEEMod model defaults.

[2] As shown in the California Emissions Estimator Model (CalEEMod) User's Guide Version 2013.2, Table 3.4 "OFFROAD Equipment Emission Factors" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

**TABLE 3-2: CONSTRUCTION DURATION**

| Phase Name | Start Date | End Date | Days |
|---|---|---|---|
| **Phase 1** | | | |
| Site Preparation | 01/01/2017 | 01/13/2017 | 10 |
| Grading | 01/14/2017 | 04/28/2017 | 75 |
| Building Construction | 04/29/2017 | 06/22/2018 | 300 |
| Architectural Coating | 11/25/2018 | 06/22/2018 | 150 |
| Paving | 06/23/2018 | 07/20/2018 | 20 |
| **Phase 2** | | | |
| Site Preparation | 07/21/2018 | 07/27/2018 | 5 |
| Grading | 07/28/2018 | 09/07/2018 | 30 |
| Building Construction | 09/08/2018 | 05/17/2019 | 180 |
| Architectural Coating | 02/02/2019 | 05/17/2019 | 75 |
| Paving | 05/18/2019 | 05/31/2019 | 10 |

**TABLE 3-3: CONSTRUCTION EQUIPMENT ASSUMPTIONS (PHASE 1&2)**

| Activity | Equipment | Number | Hours Per Day |
|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8 |
| | Crawler Tractors | 4 | 8 |
| Grading | Excavators | 2 | 8 |
| | Graders | 1 | 8 |
| | Rubber Tired Dozers | 1 | 8 |
| | Scrapers | 2 | 8 |
| | Crawler Tractors | 2 | 8 |
| Building Construction | Cranes | 1 | 8 |
| | Forklifts | 3 | 8 |
| | Generator Sets | 1 | 8 |
| | Tractors/Loaders/Backhoes | 3 | 8 |
| | Welders | 1 | 8 |
| Architectural Coating | Air Compressor | 1 | 8 |
| Paving | Pavers | 2 | 8 |
| | Paving Equipment | 2 | 8 |
| | Rollers | 2 | 8 |

### 3.4.1 CONSTRUCTION EMISSIONS SUMMARY

#### *Impacts without BACMS*

SCAQMD Rules that are currently applicable during construction activity for this Project include but are not limited to: Rule 1403 (Asbestos); Rule 1113 (Architectural Coatings) (12); Rule 431.2 (Low Sulfur Fuel) (13); Rule 403 (Fugitive Dust) (14); and Rule 1186 / 1186.1 (Street Sweepers) (15). It should be noted that Best Available Control Measures (BACMs) are not mitigation as they are standard regulatory requirements. Notwithstanding, credit for Rule 403 has not been taken.

The estimated maximum daily construction emissions without mitigation are summarized on Table 3-4. Detailed construction model outputs are presented in Appendix 3.2. Under the assumed scenarios, emissions resulting from the Project construction would not exceed applicable SCAQMD regional thresholds of significance. Therefore, a less than significant impact would occur.

**TABLE 3-4: EMISSIONS SUMMARY OF CONSTRUCTION (WITHOUT BACMS)**

| Year | Emissions (pounds per day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | NOx | CO | SOx | PM10 | PM2.5 |
| 2017 | 37.36 | 81.72 | 48.73 | 0.07 | 21.02 | 12.52 |
| 2018 | 36.74 | 71.00 | 43.95 | 0.07 | 20.63 | 12.16 |
| 2019 | 68.67 | 29.91 | 35.75 | 0.07 | 4.16 | 2.22 |
| **Maximum Daily Emissions** | **68.67** | **81.72** | **48.73** | **0.07** | **21.02** | **12.52** |
| SCAQMD Regional Threshold | 75 | 100 | 550 | 150 | 150 | 55 |
| **Threshold Exceeded?** | **NO** | **NO** | **NO** | **NO** | **NO** | **NO** |

#### *Impacts with BACMS*

The estimated maximum daily construction emissions with BACMs are summarized on Table 3-5. Detailed construction model outputs are presented in Appendix 3.2. Under the assumed scenarios, emissions resulting from the Project construction would not exceed applicable SCAQMD regional thresholds of significance. Implementation of BACM AQ-1 would further reduce the severity of the impacts and a less than significant impact would occur for construction emission.

**TABLE 3-5: EMISSIONS SUMMARY OF CONSTRUCTION (WITH BACMS)**

| Year | Emissions (pounds per day) | | | | | |
|---|---|---|---|---|---|---|
| | **VOC** | **NOx** | **CO** | **SOx** | **PM10** | **PM2.5** |
| 2017 | 37.36 | 81.72 | 48.73 | 0.07 | 10.00 | 6.46 |
| 2018 | 36.74 | 71.00 | 43.95 | 0.07 | 9.61 | 6.10 |
| 2019 | 68.67 | 29.91 | 35.75 | 0.07 | 4.16 | 2.22 |
| **Maximum Daily Emissions** | **68.67** | **81.72** | **48.73** | **0.07** | **10.00** | **6.46** |
| SCAQMD Regional Threshold | 75 | 100 | 550 | 150 | 150 | 55 |
| **Threshold Exceeded?** | **NO** | **NO** | **NO** | **NO** | **NO** | **NO** |

## 3.5 OPERATIONAL EMISSIONS

Operational activities associated with the proposed Project will result in emissions of ROG, NOX, CO, SOX, PM10, and PM2.5. Operational emissions would be expected from the following primary sources:

- Area Source Emissions
- Energy Source Emissions
- Mobile Source Emissions

### 3.5.1 AREA SOURCE EMISSIONS

Architectural Coatings

Over a period of time the buildings that are part of this Project will be subject to emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings as part of Project maintenance. The emissions associated with architectural coatings were calculated using the CalEEMod model.

Consumer Products

Consumer products include, but are not limited to detergents, cleaning compounds, polishes, personal care products, and lawn and garden products. Many of these products contain organic compounds which when released in the atmosphere can react to form ozone and other photochemically reactive pollutants. The emissions associated with use of consumer products were calculated based on defaults provided within the CalEEMod model.

Hearths/Fireplaces

The emissions associated with use of hearths/fireplaces were calculated based on assumptions provided in the CalEEMod model. The Project is required to comply with SCAQMD Rule 445, which prohibits the use of wood burning stoves and fireplaces in new development. In order to account for the requirements of this Rule, the unmitigated CalEEMod model estimates were adjusted to remove wood burning stoves and fireplaces. As the project is required to comply with SCAQMD Rule 445, the removal of wood burning stoves and fireplaces is not considered "mitigation".

Landscape Maintenance Equipment

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shedders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the Project. The emissions associated with landscape maintenance equipment were calculated based on assumptions provided in the CalEEMod model.

### 3.5.2 ENERGY SOURCE EMISSIONS

Combustion Emissions Associated with Natural Gas and Electricity

Electricity and natural gas are used by almost every project. Criteria pollutant emissions are emitted through the generation of electricity and consumption of natural gas. However, because electrical generating facilities for the Project area are located either outside the region (state) or offset through the use of pollution credits (RECLAIM) for generation within the SCAB, criteria pollutant emissions from offsite generation of electricity is generally excluded from the evaluation of significance and only natural gas use is considered. The emissions associated with natural gas use were calculated using the CalEEMod model.

### 3.5.3 MOBILE SOURCE EMISSIONS

Vehicles

Project operational (vehicular) impacts are dependent on both overall daily vehicle trip generation and the effect of the Project on peak hour traffic volumes and traffic operations in the vicinity of the Project. The Project related operational air quality impacts derive primarily from vehicle trips generated by the Project. CalEEMod default trip characteristics were utilized in this analysis. Trip generation rates from The Institute of Transportation Engineers Trip Generation Handbook, 9$^{th}$ Edition were also used in the analysis.

Fugitive Dust Related to Vehicular Travel

Vehicles traveling on paved roads would be a source of fugitive emissions due to the generation of road dust inclusive of tire wear particulates. The emissions estimates for travel on paved roads were calculated using the CalEEMod model.

### 3.5.4 OPERATIONAL EMISSIONS SUMMARY

***Impacts without Mitigation***

The estimated total maximum daily operation emissions for phase 1 and 2 without mitigation are summarized on Table 3-6. Detailed operation model outputs are presented in Appendix 3.2. Under the assumed scenarios, emissions resulting from the Project operational activities would exceed applicable SCAQMD regional thresholds of significance for emissions of $NO_x$.

**TABLE 3-6: SUMMARY OF PEAK OPERATIONAL EMISSIONS (WITHOUT MITIGATION)**

| Operational Activities – Summer Scenario | Emissions (pounds per day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| **Phase 1** | | | | | | |
| Area Source | 7.41 | 0.12 | 9.98 | 5.20E-04 | 0.22 | 0.21 |
| Energy Source | 0.11 | 0.97 | 0.41 | 0.01 | 0.08 | 0.08 |
| Mobile Source | 4.22 | 13.22 | 50.31 | 0.13 | 8.81 | 2.48 |
| Total Maximum Daily Emissions | 11.74 | 14.31 | 60.70 | 0.14 | 9.11 | 2.77 |
| **Phase 2** | | | | | | |
| Area Source | 13.98 | 0.12 | 10.02 | 5.30E-04 | 0.22 | 0.21 |
| Energy Source | 0.12 | 1.02 | 0.46 | 0.01 | 0.08 | 0.08 |
| Mobile Source | 20.50 | 52.76 | 206.69 | 0.54 | 35.60 | 10.02 |
| **Total Maximum Daily Emissions** | **34.60** | **53.90** | **217.17** | **0.55** | **35.90** | **10.31** |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| **Threshold Exceeded?** | **NO** | **NO** | **NO** | **NO** | **NO** | **NO** |

| Operational Activities – Winter Scenario | Emissions (pounds per day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| **Phase 1** | | | | | | |
| Area Source | 7.41 | 0.12 | 9.98 | 5.20E-04 | 0.22 | 0.21 |
| Energy Source | 0.11 | 0.97 | 0.41 | 6.18E-03 | 0.08 | 0.08 |
| Mobile Source | 4.07 | 13.81 | 46.72 | 0.12 | 8.81 | 2.48 |
| Total Maximum Daily Emissions | 11.59 | 14.90 | 57.11 | 0.13 | 9.11 | 2.77 |
| **Phase 2** | | | | | | |
| Area Source | 13.98 | 0.12 | 10.02 | 5.30E-04 | 0.22 | 0.21 |
| Energy Source | 0.12 | 1.02 | 0.46 | 6.49E-03 | 0.08 | 0.08 |
| Mobile Source | 19.85 | 54.93 | 198.27 | 0.5 | 35.6 | 10.02 |
| **Total Maximum Daily Emissions** | **33.95** | **56.07** | **208.75** | **0.51** | **35.90** | **10.31** |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| **Threshold Exceeded?** | **NO** | **YES** | **NO** | **NO** | **NO** | **NO** |

### *Impacts with Mitigation*

The estimated total maximum daily operation emissions for phase 1 and 2 with mitigation are summarized on Table 3-7. Detailed operation model outputs are presented in Appendix 3.2. MM AQ-1 and MM AQ-2 are recommended to reduce the severity of the impacts. After implementation of the MMs, emissions resulting from the Project operational activities would not exceed applicable SCAQMD regional thresholds of significance for any criteria pollutant. Therefore, project operational-source emissions are considered less than significant.

**TABLE 3-7: SUMMARY OF PEAK OPERATIONAL EMISSIONS (WITH MITIGATION)**

| Operational Activities – Summer Scenario | Emissions (pounds per day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| **Phase 1** | | | | | | |
| Area Source | 7.41 | 0.12 | 9.98 | 5.20E-04 | 0.22 | 0.21 |
| Energy Source | 0.11 | 0.97 | 0.41 | 6.18E-03 | 0.08 | 0.08 |
| Mobile Source | 4.21 | 13.14 | 50.03 | 0.13 | 8.75 | 2.46 |
| Total Maximum Daily Emissions | 11.73 | 14.23 | 60.42 | 0.14 | 9.05 | 2.75 |
| **Phase 2** | | | | | | |
| Area Source | 13.98 | 0.12 | 10.02 | 5.30E-04 | 0.22 | 0.21 |
| Energy Source | 0.12 | 1.02 | 0.46 | 6.49E-03 | 0.08 | 0.08 |
| Mobile Source | 19.44 | 44.26 | 177.52 | 0.43 | 28.46 | 8.01 |
| **Total Maximum Daily Emissions** | **33.54** | **45.40** | **188.00** | **0.44** | **28.76** | **8.30** |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| **Threshold Exceeded?** | **NO** | **NO** | **NO** | **NO** | **NO** | **NO** |

| Operational Activities – Winter Scenario | Emissions (pounds per day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| **Phase 1** | | | | | | |
| Area Source | 7.41 | 0.12 | 9.98 | 5.20E-04 | 0.22 | 0.21 |
| Energy Source | 0.11 | 0.97 | 0.41 | 6.18E-03 | 0.08 | 0.08 |
| Mobile Source | 4.06 | 13.72 | 46.48 | 0.12 | 8.79 | 2.46 |
| Total Maximum Daily Emissions | 11.58 | 14.81 | 56.87 | 0.13 | 9.09 | 2.75 |
| **Phase 2** | | | | | | |
| Area Source | 13.98 | 0.12 | 10.02 | 5.30E-04 | 0.22 | 0.21 |
| Energy Source | 0.12 | 1.02 | 0.46 | 6.49E-03 | 0.08 | 0.08 |
| Mobile Source | 18.85 | 45.98 | 173.78 | 0.4 | 28.46 | 8.02 |
| **Total Maximum Daily Emissions** | **32.95** | **47.12** | **184.26** | **0.41** | **28.76** | **8.31** |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| **Threshold Exceeded?** | **NO** | **NO** | **NO** | **NO** | **NO** | **NO** |

## 3.6 LOCALIZED SIGNIFIANCE - CONSTRUCTION ACTIVITY

### BACKGROUND ON LOCALIZED SIGNIFICANCE THRESHOLDS (LSTS)

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (Methodology) (17). The SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs).

The significance of localized emissions impacts depends on whether ambient levels in the vicinity of any given project are above or below State standards. In the case of CO and NO2, if ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. For the nonattainment pollutants $PM_{10}$ and $PM_{2.5}$, background ambient concentrations already exceed state and/or federal standards. LSTs for $PM_{10}$ and $PM_{2.5}$ are therefore based on SCAQMD Rules 403/1303 (construction-source/operational-source emissions respectively) and are established as an allowable change in concentration. Background concentrations are irrelevant.

The SCAQMD established LSTs in response to the SCAQMD Governing Board's Environmental Justice Initiative I-4. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest residence or sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses. The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (18). For this Project, the appropriate Source Receptor Area (SRA) for the LST analysis is the Central San Bernardino Valley 2 Monitoring Station (SRA 34). LSTs apply to carbon monoxide (CO), nitrogen dioxide ($NO_2$), particulate matter ≤ 10 microns ($PM_{10}$), and particulate matter ≤ 2.5 microns ($PM_{2.5}$).

### EMISSIONS CONSIDERED

SCAQMD's Methodology clearly states that "off-site mobile emissions from the Project should NOT be included in the emissions compared to LSTs (19)." Therefore, for purposes of the construction LST analysis only emissions included in the CalEEMod "on-site" emissions outputs were considered.

#### *Sensitive Receptors*

Some people are especially sensitive to air pollution and are given special consideration when evaluating air quality impacts from projects. These groups of people include children, the elderly, persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Structures that house these persons or places where they gather to exercise are defined as "sensitive receptors".

The nearest sensitive receptor is the residential community located approximately 151 feet/46 meters east to the Project site. Therefore, LSTs for receptors located at 46 meters were used.

**APPLICABILITY OF LSTS FOR THE PROJECT**

For this Project, the appropriate Source Receptor Area (SRA) for the LST is the Central San Bernardino Valley 2 monitoring station (SRA 34). LSTs apply to carbon monoxide (CO), nitrogen dioxide (NO2), particulate matter ≤ 10 microns (PM10), and particulate matter ≤ 2.5 microns (PM2.5). The SCAQMD produced look-up tables for projects less than or equal to 5 acres in size.

In order to determine the appropriate methodology for determining localized impacts that could occur as a result of Project-related construction, the following process is undertaken:

- The CalEEMod model is utilized to determine the maximum daily on-site emissions that will occur during construction activity.
- The SCAQMD's Fact Sheet for Applying CalEEMod to Localized Significance Thresholds (33) is used to determine the maximum site acreage that is actively disturbed based on the construction equipment fleet and equipment hours as estimated in CalEEMod.
- If the total acreage disturbed is less than or equal to five acres per day, then the SCAQMD's screening look-up tables are utilized to determine if a Project has the potential to result in a significant impact (the SCAQMD recommends that Projects exceeding the screening look-up tables undergo dispersion modeling to determine actual impacts). The look-up tables establish a maximum daily emissions threshold in pounds per day that can be compared to CalEEMod outputs.
- If the total acreage disturbed is greater than five acres per day, then the SCAQMD recommends dispersion modeling to be conducted to determine the actual pollutant concentrations for applicable LSTs in the air. In other words, the maximum daily on-site emissions as calculated in CalEEMod are modeled via air dispersion modeling to calculate the actual concentration in the air (e.g., parts per million or micrograms per cubic meter) in order to determine if any applicable thresholds are exceeded.

**MAXIMUM DAILY DISTURBED-ACREAGE**

Table 3-8 is used to determine the maximum daily disturbed-acreage for use in determining the applicability of the SCAQMD's LST look-up tables. Based on Table 3-8, the maximum acres the Project could actively disturb are approximately 3.5 acres per day during the peak site preparation phase and 4 acres per day during the peak grading phase.

**TABLE 3-8: MAXIMUM DAILY DISTURBED ACREAGE**

| Construction Phase | Equipment Type | Equipment | Acres graded per 8 hour day | Operating Hours per Day | Acres graded per day |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 0.5 | 8 | 1.5 |
| | Crawler Tractors | 4 | 0.5 | 8 | 2 |
| | Graders | 0 | 0.5 | 8 | 0 |
| | Scrapers | 0 | 1 | 8 | 0 |
| **Total acres graded per day during Site Preparation** | | | | | **3.5** |

| Construction Phase | Equipment Type | Equipment | Acres graded per 8 hour day | Operating Hours per Day | Acres graded per day |
|---|---|---|---|---|---|
| Grading | Rubber Tired Dozers | 1 | 0.5 | 8 | 0.5 |
| | Crawler Tractors | 2 | 0.5 | 8 | 1 |
| | Graders | 1 | 0.5 | 8 | 0.5 |
| | Scrapers | 2 | 1 | 8 | 2 |
| **Total acres graded per day during Grading** | | | | | **4** |

**CONSTRUCTION-SOURCE EMISSIONS LST ANALYSIS**

Since the Project's maximum daily disturbed acreage is less than 5 acres per day, SCAQMD's LST Look-up Tables are used in determining localized impacts. This methodology is consistent with recent recommendations made by SCAQMD planning staff.

***Impacts without BACMs***

Table 3-9 identifies the localized impacts at the nearest receptor location in the vicinity of the Project. As shown, emissions during construction activity without BACMs has the potential to exceed the SCAQMD's localized significance thresholds for emissions of $PM_{2.5}$ only.

**TABLE 3-9: LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION (WITHOUT BACMS) (1 OF 2)**

| On-Site Site Preparation Emissions | Emissions (pounds per day) | | | |
|---|---|---|---|---|
| | **$NO_x$** | **CO** | **$PM_{10}$** | **$PM_{2.5}$** |
| Phase 1 | 51.75 | 39.40 | 20.82 | 12.46 |
| Phase 2 | 45.61 | 36.23 | 20.43 | 12.11 |
| **Maximum Daily Emissions** | **51.75** | **39.4** | **20.82** | **12.46** |
| SCAQMD Localized Threshold | 246 | 1,838 | 29 | 8 |
| **Threshold Exceeded?** | **NO** | **NO** | **NO** | **YES** |

**TABLE 3-9: LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION (WITHOUT BACMS) (2 OF 2)**

| On-Site Grading Emissions | Emissions (pounds per day) | | | |
|---|---|---|---|---|
| | $NO_x$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Phase 1 | 81.62 | 47.50 | 13.28 | 6.98 |
| Phase 2 | 70.92 | 42.84 | 12.78 | 6.51 |
| **Maximum Daily Emissions** | **81.62** | **47.50** | **13.28** | **6.98** |
| SCAQMD Localized Threshold | 263 | 1,989 | 33 | 8 |
| **Threshold Exceeded?** | **NO** | **NO** | **NO** | **NO** |

### *Impacts with BACMs*

Table 3-10 identifies the localized impacts at the nearest receptor location in the vicinity of the Project. As shown, emissions during construction activity with BACMs would not exceed SCAQMD's localized significance thresholds and a less than significant impact would occur.

**TABLE 3-10: LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION (WITH BACMS) (1 OF 2)**

| On-Site Site Preparation Emissions | Emissions (pounds per day) | | | |
|---|---|---|---|---|
| | $NO_x$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| **Phase 1** | 51.75 | 39.40 | 9.80 | 6.41 |
| **Phase 2** | 45.61 | 36.23 | 9.41 | 6.05 |
| **Maximum Daily Emissions** | **51.75** | **39.40** | **9.80** | **6.41** |
| SCAQMD Localized Threshold | 246 | 1,838 | 29 | 8 |
| **Threshold Exceeded?** | **NO** | **NO** | **NO** | **NO** |

**TABLE 3-10: LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION (WITH BACMS) (2 OF 2)**

| On-Site Grading Emissions | Emissions (pounds per day) | | | |
|---|---|---|---|---|
| | $NO_x$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| **Phase 1** | 81.62 | 47.50 | 7.35 | 4.71 |
| **Phase 2** | 70.92 | 42.84 | 6.84 | 4.25 |
| **Maximum Daily Emissions** | **81.62** | **47.50** | **7.35** | **4.71** |
| SCAQMD Localized Threshold | 263 | 1,989 | 33 | 8 |
| **Threshold Exceeded?** | **NO** | **NO** | **NO** | **NO** |

## 3.7 LOCALIZED SIGNIFICANCE – LONG-TERM OPERATIONAL ACTIVITY

The proposed project involves the construction and operation of 120 single family detached residential dwelling units and 98,000 square feet of commercial retail. According to SCAQMD LST methodology, LSTs would apply to the operational phase of a proposed project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., warehouse or transfer facilities). The proposed project does

not include such uses, and thus, due to the lack of stationary source emissions, no long-term localized significance threshold analysis is needed.

## 3.8 CO "HOT SPOT" ANALYSIS

As discussed below, the Project would not result in potentially adverse CO concentrations or "hot spots." Further, detailed modeling of Project-specific carbon monoxide (CO) "hot spots" is not needed to reach this conclusion.

It has long been recognized that adverse localized CO concentrations ("hot spots") are caused by vehicular emissions, primarily when idling at congested intersections. In response, vehicle emissions standards have become increasingly stringent in the last twenty years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentrations in the Project vicinity have steadily declined, as indicated by historical emissions data presented previously at Table 2-3.

A CO "hotspot" would occur if an exceedance of the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm were to occur. At the time of the 1993 Handbook, the SCAB was designated nonattainment under the California AAQS and National AAQS for CO (21). As identified within SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SCAB were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection (21). To establish a more accurate record of baseline CO concentrations affecting the SCAB, a CO "hot spot" analysis was conducted in 2003 for four busy intersections in Los Angeles at the peak morning and afternoon time periods. This hot spot analysis did not predict any violation of CO standards, as shown on Table 3-11. Traffic volumes generating the CO concentrations for the analysis are shown on Table 3-12. It can therefore be reasonably concluded that projects (such as the proposed Rancho Palma development) that are not subject to the extremes in vehicle volumes and vehicle congestion that was evidenced in the 2003 Los Angeles hot spot analysis would similarly not create or result in CO hot spots. Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (22). The proposed Project considered herein would not produce the volume of traffic required to generate a CO hotspot either in the context of the 2003 Los Angeles hot spot study, or based on representative BAAQMD CO threshold considerations, as shown on Table 3-13. Therefore, CO hotspots are not an environmental impact of concern for the proposed Project. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

**TABLE 3-11: CO MODEL RESULTS**

| Intersection Location | Carbon Monoxide Concentrations (ppm) | | |
|---|---|---|---|
| | Morning 1-hour | Afternoon 1-hour | 8-hour |
| Wilshire-Veteran | 4.6 | 3.5 | 4.2 |
| Sunset-Highland | 4 | 4.5 | 3.9 |
| La Cienega-Century | 3.7 | 3.1 | 5.8 |
| Long Beach-Imperial | 3 | 3.1 | 9.3 |

Notes: ppm- parts per million

**TABLE 3-12: TRAFFIC VOLUMES FOR INTERSECTIONS EVALUATED IN AQMP**

| Intersection Location | Peak Traffic Volumes (vph) | | | | |
|---|---|---|---|---|---|
| | Eastbound (AM/PM) | Westbound (AM/PM) | Southbound (AM/PM) | Northbound (AM/PM) | Total (AM/PM) |
| Wilshire-Veteran | 4,954/2,069 | 1,830/3,317 | 721/1,400 | 560/933 | 8,062/7,719 |
| Sunset-Highland | 1,417/1,764 | 1,342/1,540 | 2,304/1,832 | 1,551/2,238 | 6,614/5,374 |
| La Cienega-Century | 2,540/2,243 | 1,890/2,728 | 1,384/2,029 | 821/1,674 | 6,634/8,674 |
| Long Beach-Imperial | 1,217/2,020 | 1,760/1,400 | 479/944 | 756/1,150 | 4,212/5,514 |

Source: 2003 AQMP
Notes: vph- vehicles per hour

**TABLE 3-13: PROJECT PEAK TRAFFIC VOLUMES**

| Intersection Location | Peak Traffic Volumes (vph) | | | | |
|---|---|---|---|---|---|
| | Northbound (AM/PM) | Southbound (AM/PM) | Eastbound (AM/PM) | Westbound (AM/PM) | Total (AM/PM) |
| Palm Ave and W. Little League Dr/ Kendall Dr. | 971/1,179 | 1,000/499 | 402/458 | 697/818 | 3,070/2,954 |
| Palm Ave/ I-215 NB Ramps | 623/707 | 1,433/896 | 0/0 | 659/899 | 2,715/2,502 |
| Palm Ave & Kendall Dr./I-215 SB Ramps | 269/617 | 1,227/928 | 132/117 | 658/374 | 2,196/2,036 |
| University Pkwy & Kendall Dr. | 1,295/1,484 | 446/1,333 | 903/739 | 731/760 | 3,375/4,316 |

Source: Rancho Palma Traffic Impact Analysis (2015)
Notes: vph- vehicles per hour

## 3.9 AIR QUALITY MANAGEMENT PLANNING

The Project site is located within the SCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 10,743 square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the Southern California Association of Governments (SCAG), county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards.

Currently, these state and federal air quality standards are exceeded in most parts of the Basin. In response, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

The Final 2012 AQMP was adopted by the AQMD Governing Board on December 7, 2012 (23) (7). The 2012 AQMP incorporates the latest scientific and technological information and planning assumptions, including the 2012 Regional Transportation Plan/Sustainable Communities Strategy and updated emission inventory methodologies for various source categories.

Similar to the 2007 AQMP, the 2012 AQMP was based on assumptions provided by both CARB and SCAG in the latest available EMFAC model for the most recent motor vehicle and demographics information, respectively. The air quality levels projected in the 2012 AQMP are based on several assumptions. For example, the 2012 AQMP has assumed that development associated with general plans, specific plans, residential projects, and wastewater facilities will be constructed in accordance with population growth projections identified by SCAG in its 2012 RTP. The 2012 AQMP also has assumed that such development projects will implement strategies to reduce emissions generated during the construction and operational phases of development. The Project's consistency with the 2012 AQMP is discussed as follows:

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook (1993) (24). These indicators are discussed below:

- Consistency Criterion No. 1: The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

**Construction Impacts**

Consistency Criterion No. 1 refers to violations of the CAAQS and NAAQS. CAAQS and NAAQS violations would occur if LSTs were exceeded. As evaluated as part of the Project LST analysis

(previously presented), the Project's localized construction-source emissions would not exceed applicable LSTs.

**Operational Impacts**

The Project regional analysis demonstrates that Project operational-source emissions would not exceed applicable thresholds, and would therefore not result in or cause violations of the CAAQS and NAAQS.

On the basis of the preceding discussion, the Project is determined to be consistent with the first criterion.

- Consistency Criterion No. 2: The Project will not exceed the assumptions in the AQMP based on the years of Project build-out phase.

**Overview**

The 2012 AQMP demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the Southern California Association of Governments (SCAG), which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections in the City of San Bernardino General Plan is considered to be consistent with the AQMP.

**Construction Impacts**

Peak day emissions generated by construction activities are largely independent of land use assignments, but rather are a function of development scope and maximum area of disturbance. Irrespective of the site's land use designation, development of the site to its maximum potential would likely occur, with disturbance of the entire site occurring during construction activities.

**Operational Impacts**

The Project site currently has a land use designation of Commercial General -1, which is intended for retail, personal service, entertainment, office, and related commercial uses to service the needs of the residents (26). The Project proposes to construct residential and commercial land uses. It should be noted that the proposed development would not exceed regional or local thresholds and would therefore be considered to have a less than significant impact. As such, development proposed by the Project is consistent with the growth projections in the General Plan and is therefore considered to be consistent with the AQMP.

On the basis of the preceding discussion, the Project is determined to be consistent with the second criterion.

**AQMP Consistency Conclusion**

The proposed project would not result in or cause NAAQS or CAAQS violations. The Project's proposed land use designation for the subject site is not materially different than the development intensities as reflected in the adopted General Plan. The Project is therefore considered to be consistent with the AQMP.

### 3.10 POTENTIAL IMPACTS TO SENSITIVE RECEPTORS

The potential impact of Project-generated air pollutant emissions at sensitive receptors has also been considered. Sensitive receptors can include uses such as long term health care facilities, rehabilitation centers, and retirement homes. Residences, schools, playgrounds, child care centers, and athletic facilities can also be considered as sensitive receptors.

Results of the LST analysis indicate that the Project will not exceed the SCAQMD localized significance thresholds during construction. Therefore sensitive receptors would not be subject to a significant air quality impact during Project construction.

The proposed Project would not result in a CO "hotspot" as a result of Project related traffic during ongoing operations, nor would the Project result in a significant adverse health impact as discussed in Section 3.8. Thus a less than significant impact to sensitive receptors during operational activity is expected.

## 3.11 ODORS

The potential for the Project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

The Project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed Project's (long-term operational) uses. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the

respective phase of construction and is thus considered less than significant. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the County's solid waste regulations. The proposed Project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed Project construction and operations would be less than significant and no mitigation is required.

## 3.12 CUMULATIVE IMPACTS

The Project area is designated as an extreme non-attainment area for ozone, and a non-attainment area for $PM_{10}$ and $PM_{2.5}$.

#### CRITERION 1; REGIONAL ANALYSIS

Construction Impacts

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that Project construction-source air pollutant emissions will not result in exceedances of regional thresholds. Therefore, Project construction-source emissions would be considered less than significant on a project-specific and cumulative basis.

Operational Impacts

Project operational-source emissions will not exceed applicable SCAQMD regional thresholds. Therefore, Project operational-source emissions would be considered less than significant on a project-specific and cumulative basis.

#### CRITERION 2; LIST APPROACH

A list approach is used, in accordance with Section 15130(b) of the CEQA Guidelines, which states the following:

> *The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.*

The SCAQMD has recognized that there is typically insufficient information to quantitatively evaluate the cumulative contributions of multiple projects because each project applicant has no control over nearby projects. Nevertheless, the potential cumulative impacts from the Project and other projects are discussed below and have been quantified to the extent practical. A cumulative project list was developed for this analysis and is shown in Table 3-14.

The cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of San Bernardino, the cumulative project list

includes known and foreseeable projects that are anticipated to contribute emissions to the air basin in the vicinity of the Project.

Cumulative projects could contribute to an existing or projected air quality exceedance because the Basin is currently nonattainment for ozone, PM10, and PM2.5.

The AQMD has published a report on how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (39). In this report the AQMD clearly states (Page D-3):

*"…the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.*

*Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."*

Therefore, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable.

For this Project, a less than significant project-specific and thus less than cumulatively considerable impact would occur since the Project's emissions do not exceed the applicable SCAQMD thresholds for construction and on-going operational activity.

**TABLE 3-14: CUMULATIVE DEVELOPMENT LIST**

| # | Project/Location | Land Use[1] | Quantity | Units[2] |
|---|---|---|---|---|
| **City of San Bernardino** | | | | |
| CSB1 | DP206-28 | Distribution Center | 678.275 | TSF |
| CSB2 | ADP15-05 | Market | 18.000 | TSF |
| CSB3 | The Colonies at University Park | SFDR | 22 | DU |
| CSB4 | The Promenade at University Park | Student Housing | 104 | DU |
| CSB5 | CUP12-06 | Fast Food Restaurant with Drive-Thru | 2.300 | TSF |
| CSB6 | CUP14-04 | Water Treatment Plant | 63.000 | TSF |
| CSB7 | CUP14-08 | Gas Station / Commercial | 5.000 | TSF |
| CSB8 | CUP14-19 | Car Wash | 3.650 | TSF |
| CSB9 | CUP14-21 | Church | 121.000 | TSF |
| CSB10 | Harbor Flight Tools (DP-D14-18) | Retail | 17.541 | TSF |
| CSB11 | CUP15-03 | Restaurants with Drive-Thru | 5.422 | TSF |
| CSB12 | DP-D15-02 | Warehouse | 155.000 | TSF |
| CSB13 | DP-P13-07 | SFDR | 39 | DU |
| CSB14 | CUP11-08 | Home Improvement | 136.090 | TSF |
| | | Retail / Restaurant | 68.630 | TSF |
| **County of San Bernardino** | | | | |
| SBC1 | P201400536 | Recreational Facility Expansion | | |
| SBC2 | P201200390 | Truck Terminal | 4.298 | TSF |
| SBC3 | Silverleaf at Rosena Ranch (P201400397) | SFDR | | |
| SBC4 | P201400346 | Vehicle Service Shop Expansion | 1.462 | TSF |

[1] SFDR = Single Family Detached Residential

[2] TSF = Ten Thousand Square Feet; DU = Dwelling Unit

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# 4 FINDINGS & CONCLUSIONS

## 4.1 CONSTRUCTION-SOURCE EMISSIONS

*REGIONAL IMPACTS*

Project construction-source emissions would not exceed the numerical regional thresholds of significance established by the South Coast Air Quality Management District (SCAQMD). Notwithstanding, BACM AQ-1 is recommended to further reduce the severity of the impacts. Thus a less than significant impact would occur for Project-related construction-source emissions both with and without implementation of BACM AQ-1.

*LOCALIZED IMPACTS*

Without BACMs, emissions during construction activity has the potential to exceed the SCAQMD's localized significance threshold for $PM_{2.5}$ only. BACM AQ-1 is recommended to reduce the impacts to less than significant levels. After implementation of BACM AQ-1, construction-source emissions will not exceed SCAQMD's localized significance thresholds for any applicable pollutants and a less than significant impact will occur.

Project construction-source emissions would not conflict with the applicable AQMP.

*ODORS*

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less-than-significant.

## 4.2 OPERATIONAL-SOURCE EMISSIONS

*REGIONAL IMPACTS*

For regional emissions, the Project has the potential to exceed the numerical thresholds of significance established by the SCAQMD for emissions of $NO_x$. MM AQ-1 and MM AQ-2 are recommended to reduce the impacts to less than significant levels. After implementation of MM AQ-1 and MM AQ-2, a less than significant impact would occur for Project-related operational-source emissions.

*LOCALIZED IMPACTS*

Project operational-source emissions would not result in or cause a significant localized air quality impact as discussed in the operational LSTs section of this report. The proposed Project would not result in a significant CO "hotspot" as a result of Project related traffic during ongoing operations, nor would the Project result in a significant adverse health impact as

discussed in Section 3.8, thus a less than significant impact to sensitive receptors during operational activity is expected. Lastly, Project operational-source emissions would not conflict with the applicable AQMP.

*ODORS*

Substantial odor-generating sources include land uses such as agricultural activities, feedlots, wastewater treatment facilities, landfills or various heavy industrial uses. The Project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential sources of operational odors generated by the Project would include disposal of miscellaneous residential and commercial refuse. Moreover, SCAQMD Rule 402 acts to prevent occurrences of odor nuisances (1) . Consistent with City requirements, all Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with solid waste regulations. Potential operational-source odor impacts are therefore considered less-than-significant.

## 4.3 CONSTRUCTION AND OPERATIONAL-SOURCE BEST AVAILABLE CONTROL MEASURES AND MITIGATION MEASURES

**BACM AQ-1**

The following measures shall be incorporated into Project plans and specifications as implementation of Rule 403 (4):

- All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.
- The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered at least three (3) times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.
- The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 miles per hour or less.

**MM AQ-1**

Provide direct, safe, attractive pedestrian access from project to transit stops and adjacent development.

**MM AQ-2**

Provide safe, direct bicycle access to adjacent bicycle routes and connect bicycle lanes/paths to city-wide network to encourage non-auto modes of transportation.

# 5 REFERENCES


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# 6 CERTIFICATION

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed Rancho Palma Project. The information contained in this air quality impact assessment report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 660-1994 ext. 217.

Haseeb Qureshi
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### EDUCATION

Master of Science in Environmental Studies
California State University, Fullerton • May, 2010

Bachelor of Arts in Environmental Analysis and Design
University of California, Irvine • June, 2006

### PROFESSIONAL AFFILIATIONS

AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
ASTM – American Society for Testing and Materials

### PROFESSIONAL CERTIFICATIONS

Planned Communities and Urban Infill – Urban Land Institute • June, 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April, 2008
Principles of Ambient Air Monitoring – California Air Resources Board • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
Air Dispersion Modeling – Lakes Environmental • June, 2006

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# APPENDIX 3.1:

# STATE/FEDERAL ATTAINMENT STATUS OF CRITERIA POLLUTANTS

# 2013
# Area Designations for State Ambient Air Quality Standards
# OZONE


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

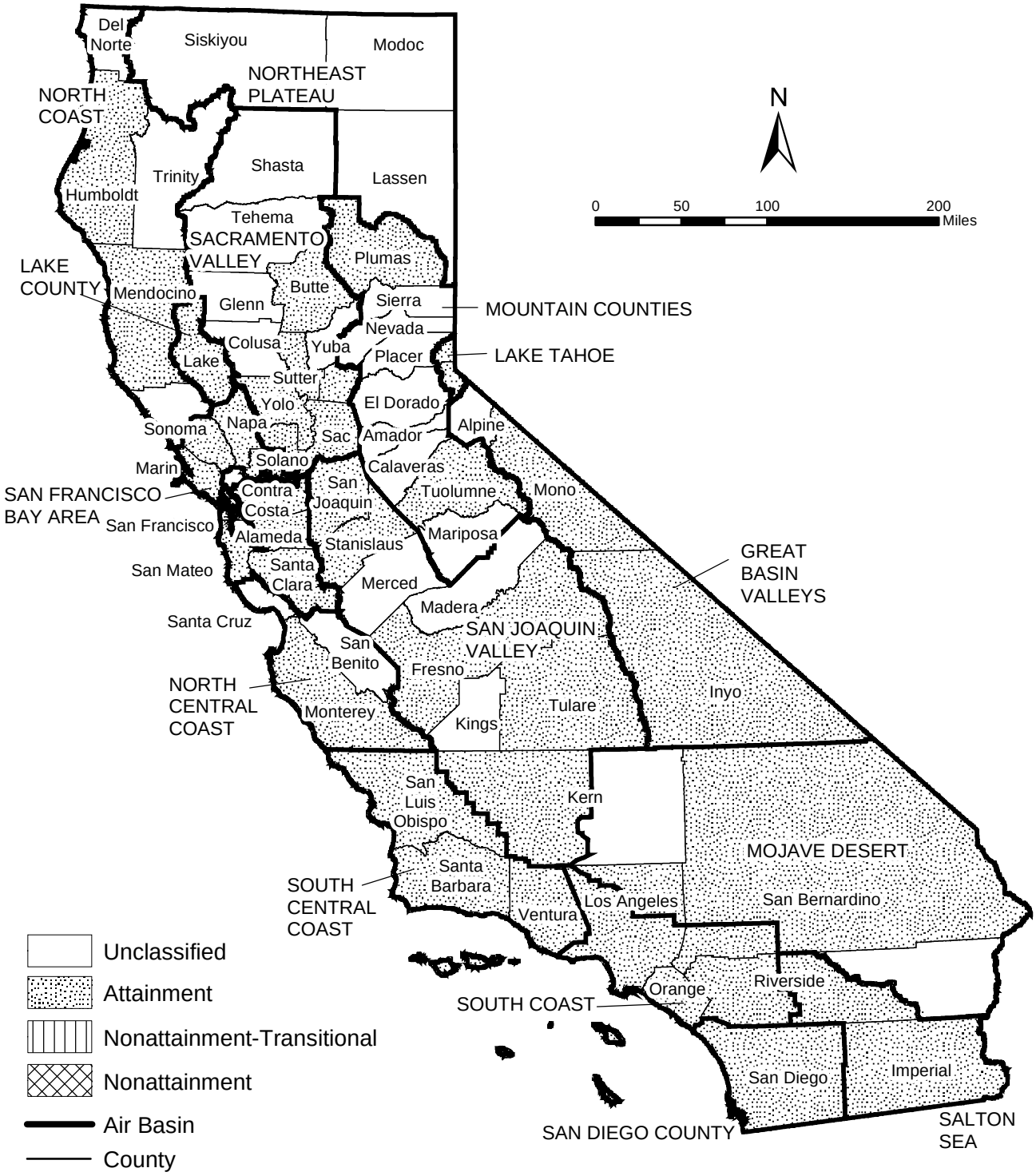
# 2013
# Area Designations for State Ambient Air Quality Standards
# PM10


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

# 2013
# Area Designations for State Ambient Air Quality Standards
# PM2.5


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

# 2013
# Area Designations for State Ambient Air Quality Standards
# CARBON MONOXIDE




Source Date:
June 2013
Air Quality Planning Branch, AQPSD

# 2013
# Area Designations for State Ambient Air Quality Standards
# NITROGEN DIOXIDE


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

# 2013
# Area Designations for State Ambient Air Quality Standards
# SULFUR DIOXIDE


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

# 2013
# Area Designations for State Ambient Air Quality Standards
# LEAD


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

# Area Designations for National Ambient Air Quality Standards 8-HOUR OZONE


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

# Area Designations for National Ambient Air Quality Standards PM10


Source Date:
September 2013
Air Quality Planning Branch, AQPSD

# Area Designations for National Ambient Air Quality Standards PM2.5


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

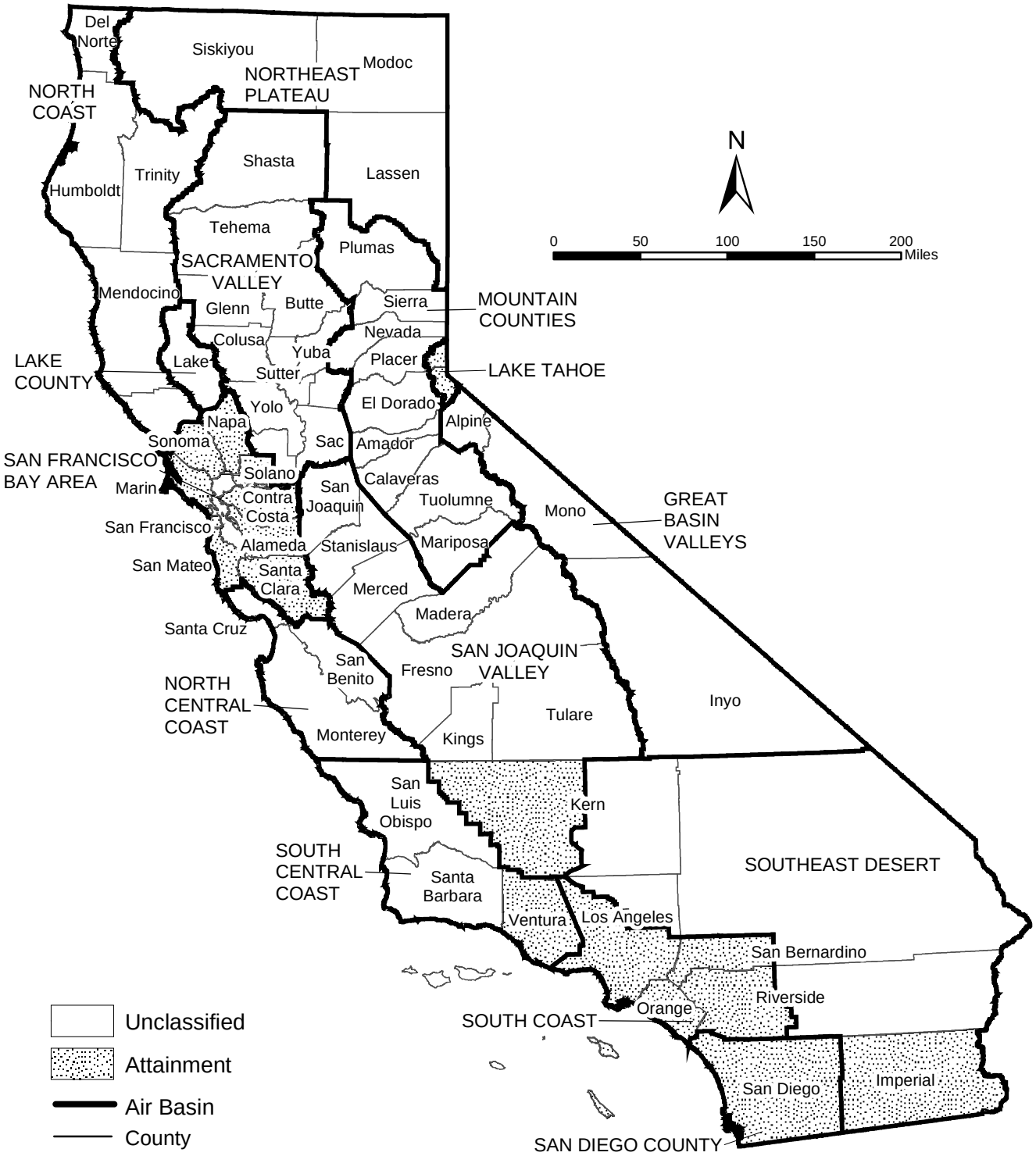
# Area Designations for National Ambient Air Quality Standards CARBON MONOXIDE


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

# Area Designations for National Ambient Air Quality Standards NITROGEN DIOXIDE


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

# Area Designations for National Ambient Air Quality Standards SULFUR DIOXIDE




Source Date:
June 2013
Air Quality Planning Branch, AQPSD

# Area Designations for National Ambient Air Quality Standards LEAD


Source Date:
June 2013
Air Quality Planning Branch, AQPSD

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# APPENDIX 3.2:

# CALEEMOD EMISSIONS MODEL OUTPUTS

# Rancho Palma (Construction)-Unmitigated

**San Bernardino-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 500.00 | Space | 4.50 | 200,000.00 | 0 |
| Single Family Housing | 120.00 | Dwelling Unit | 28.40 | 313,200.00 | 343 |
| Regional Shopping Center | 98.00 | 1000sqft | 4.70 | 98,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 32 |
| **Climate Zone** | 10 | | | **Operational Year** | 2019 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 479.9 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics - CPUC GHG Calculator version 3c, worksheet tab "CO2 Allocations," cells AH/AQ 35-44.

Land Use - Total Lot Acreage: 37.6; Average home size is 2,610 SF based on a 50% maximum lot coverage

Construction Phase - Based on past project experience

Off-road Equipment - 8 hour workdays

Off-road Equipment - 8 hour workdays

Off-road Equipment - 8 hour workdays

Off-road Equipment - 8 hour workdays

Off-road Equipment - Based on past project experience

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Construction Off-road Equipment Mitigation -

Grading -

Trips and VMT -

Off-road Equipment - Based on past project experience

Vehicle Trips - Construction run only

Vechicle Emission Factors - Construction run only

Vechicle Emission Factors - Construction run only

Vechicle Emission Factors - Construction run only

Woodstoves - Construction run only

Consumer Products - Construction run only

Area Coating - Construction run only

Landscape Equipment - Construction run only

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - Construction run only

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaCoating | ReapplicationRatePercent | 10 | 0 |
| tblConstructionPhase | NumDays | 55.00 | 150.00 |
| tblConstructionPhase | NumDays | 55.00 | 75.00 |
| tblConstructionPhase | NumDays | 740.00 | 300.00 |
| tblConstructionPhase | NumDays | 740.00 | 180.00 |
| tblConstructionPhase | NumDays | 75.00 | 30.00 |
| tblConstructionPhase | NumDays | 55.00 | 10.00 |
| tblConstructionPhase | NumDays | 55.00 | 20.00 |
| tblConstructionPhase | NumDays | 30.00 | 10.00 |
| tblConstructionPhase | NumDays | 30.00 | 5.00 |
| tblConstructionPhase | PhaseEndDate | 1/18/2019 | 6/22/2018 |
| tblConstructionPhase | PhaseEndDate | 8/30/2019 | 5/17/2019 |
| tblConstructionPhase | PhaseStartDate | 6/23/2018 | 11/25/2017 |
| tblConstructionPhase | PhaseStartDate | 5/18/2019 | 2/2/2019 |
| tblConsumerProducts | ROG_EF | 1.98E-05 | 1E-09 |
| tblEnergyUse | LightingElect | 0.88 | 0.00 |
| tblEnergyUse | LightingElect | 7.62 | 0.00 |
| tblEnergyUse | LightingElect | 1,608.84 | 0.00 |
| tblEnergyUse | NT24E | 2.44 | 0.00 |
| tblEnergyUse | NT24E | 5,089.81 | 0.00 |
| tblEnergyUse | NT24NG | 0.30 | 0.00 |
| tblEnergyUse | NT24NG | 5,950.14 | 0.00 |
| tblEnergyUse | T24E | 5.60 | 0.00 |
| tblEnergyUse | T24E | 980.99 | 0.00 |
| tblEnergyUse | T24NG | 2.02 | 0.00 |
| tblEnergyUse | T24NG | 27,816.78 | 0.00 |
| tblFireplaces | NumberGas | 102.00 | 0.00 |

| | | | |
|---|---|---|---|
| tblFireplaces | NumberNoFireplace | 12.00 | 0.00 |
| tblFireplaces | NumberWood | 6.00 | 0.00 |
| tblLandscapeEquipment | NumberSummerDays | 250 | 1 |
| tblLandUse | LandUseSquareFeet | 216,000.00 | 313,200.00 |
| tblLandUse | LotAcreage | 38.96 | 28.40 |
| tblLandUse | LotAcreage | 2.25 | 4.70 |
| tblOffRoadEquipment | LoadFactor | 0.43 | 0.43 |
| tblOffRoadEquipment | LoadFactor | 0.43 | 0.43 |
| tblOffRoadEquipment | OffRoadEquipmentType | | Crawler Tractors |
| tblOffRoadEquipment | OffRoadEquipmentType | | Crawler Tractors |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 630.89 | 479.9 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2019 |
| tblSolidWaste | SolidWasteGenerationRate | 102.90 | 0.00 |
| tblSolidWaste | SolidWasteGenerationRate | 140.63 | 0.00 |
| tblVehicleEF | HHD | 0.04 | 0.00 |
| tblVehicleEF | HHD | 0.04 | 0.00 |
| tblVehicleEF | HHD | 0.04 | 0.00 |
| tblVehicleEF | LDA | 0.47 | 0.00 |
| tblVehicleEF | LDA | 0.47 | 0.00 |
| tblVehicleEF | LDA | 0.47 | 0.00 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDT1 | 0.07 | 0.00 |
| tblVehicleEF | LDT1 | 0.07 | 0.00 |
| tblVehicleEF | LDT1 | 0.07 | 0.00 |
| tblVehicleEF | LDT2 | 0.17 | 0.00 |
| tblVehicleEF | LDT2 | 0.17 | 0.00 |
| tblVehicleEF | LDT2 | 0.17 | 0.00 |
| tblVehicleEF | LHD1 | 0.06 | 0.00 |
| tblVehicleEF | LHD1 | 0.06 | 0.00 |
| tblVehicleEF | LHD1 | 0.06 | 0.00 |
| tblVehicleEF | LHD2 | 9.0560e-003 | 0.00 |
| tblVehicleEF | LHD2 | 9.0560e-003 | 0.00 |
| tblVehicleEF | LHD2 | 9.0560e-003 | 0.00 |
| tblVehicleEF | MCY | 4.9860e-003 | 0.00 |
| tblVehicleEF | MCY | 4.9860e-003 | 0.00 |
| tblVehicleEF | MCY | 4.9860e-003 | 0.00 |
| tblVehicleEF | MDV | 0.16 | 0.00 |
| tblVehicleEF | MDV | 0.16 | 0.00 |
| tblVehicleEF | MDV | 0.16 | 0.00 |
| tblVehicleEF | MH | 2.9520e-003 | 0.00 |
| tblVehicleEF | MH | 2.9520e-003 | 0.00 |
| tblVehicleEF | MH | 2.9520e-003 | 0.00 |
| tblVehicleEF | MHD | 0.02 | 0.00 |
| tblVehicleEF | MHD | 0.02 | 0.00 |
| tblVehicleEF | MHD | 0.02 | 0.00 |
| tblVehicleEF | OBUS | 1.1120e-003 | 0.00 |
| tblVehicleEF | OBUS | 1.1120e-003 | 0.00 |
| tblVehicleEF | OBUS | 1.1120e-003 | 0.00 |
| tblVehicleEF | SBUS | 6.8600e-004 | 0.00 |

| | | | |
|---|---|---|---|
| tblVehicleEF | SBUS | 6.8600e-004 | 0.00 |
| tblVehicleEF | SBUS | 6.8600e-004 | 0.00 |
| tblVehicleEF | UBUS | 1.3360e-003 | 0.00 |
| tblVehicleEF | UBUS | 1.3360e-003 | 0.00 |
| tblVehicleEF | UBUS | 1.3360e-003 | 0.00 |
| tblVehicleTrips | ST_TR | 49.97 | 0.00 |
| tblVehicleTrips | ST_TR | 10.08 | 0.00 |
| tblVehicleTrips | SU_TR | 25.24 | 0.00 |
| tblVehicleTrips | SU_TR | 8.77 | 0.00 |
| tblVehicleTrips | WD_TR | 42.94 | 0.00 |
| tblVehicleTrips | WD_TR | 9.57 | 0.00 |
| tblWater | IndoorWaterUseRate | 7,259,107.11 | 0.00 |
| tblWater | IndoorWaterUseRate | 7,818,483.07 | 0.00 |
| tblWater | OutdoorWaterUseRate | 4,449,130.16 | 0.00 |
| tblWater | OutdoorWaterUseRate | 4,929,043.68 | 0.00 |
| tblWoodstoves | NumberCatalytic | 6.00 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 6.00 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2017 | 37.3601 | 81.7185 | 48.7347 | 0.0737 | 18.2675 | 3.5527 | 21.0231 | 9.9840 | 3.2685 | 12.5193 | 0.0000 | 7,473.7552 | 7,473.7552 | 2.2318 | 0.0000 | 7,520.6236 |
| 2018 | 36.7373 | 71.0005 | 43.9541 | 0.0737 | 18.2675 | 3.0466 | 20.6343 | 9.9840 | 2.8029 | 12.1615 | 0.0000 | 7,349.8107 | 7,349.8107 | 2.2307 | 0.0000 | 7,396.6555 |
| 2019 | 68.6740 | 29.9057 | 35.7515 | 0.0727 | 2.5244 | 1.6331 | 4.1574 | 0.6774 | 1.5423 | 2.2197 | 0.0000 | 6,393.4557 | 6,393.4557 | 0.8137 | 0.0000 | 6,410.5438 |
| **Total** | **142.7713** | **182.6248** | **128.4404** | **0.2200** | **39.0593** | **8.2323** | **45.8148** | **20.6455** | **7.6136** | **26.9004** | **0.0000** | **21,217.0216** | **21,217.0216** | **5.2763** | **0.0000** | **21,327.8228** |

### 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 | | | | | |
| 2017 | 37.3601 | 81.7185 | 48.7347 | 0.0737 | 7.2470 | 3.5527 | 10.0027 | 3.9263 | 3.2685 | 6.4615 | 0.0000 | 7,473.7552 | 7,473.7552 | 2.2318 | 0.0000 | 7,520.6236 |
| 2018 | 36.7373 | 71.0005 | 43.9541 | 0.0737 | 7.2470 | 3.0466 | 9.6139 | 3.9263 | 2.8029 | 6.1038 | 0.0000 | 7,349.8107 | 7,349.8107 | 2.2307 | 0.0000 | 7,396.6554 |
| 2019 | 68.6740 | 29.9057 | 35.7515 | 0.0727 | 2.5244 | 1.6331 | 4.1574 | 0.6774 | 1.5423 | 2.2197 | 0.0000 | 6,393.4557 | 6,393.4557 | 0.8137 | 0.0000 | 6,410.5438 |
| **Total** | **142.7713** | **182.6248** | **128.4404** | **0.2200** | **17.0185** | **8.2323** | **23.7740** | **8.5300** | **7.6136** | **14.7850** | **0.0000** | **21,217.0216** | **21,217.0216** | **5.2763** | **0.0000** | **21,327.8228** |

| | ROG | NOx | 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** | **56.43** | **0.00** | **48.11** | **58.68** | **0.00** | **45.04** | **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 | 0.3110 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | 0.0000 | 17.9572 | 17.9572 | 0.0179 | 0.0000 | 18.3321 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.3110** | **0.1158** | **10.0108** | **5.3000e-004** | **0.0000** | **0.0547** | **0.0547** | **0.0000** | **0.0547** | **0.0547** | **0.0000** | **17.9572** | **17.9572** | **0.0179** | **0.0000** | **18.3321** |

### 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 | 0.3110 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | 0.0000 | 17.9572 | 17.9572 | 0.0179 | 0.0000 | 18.3321 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.3110** | **0.1158** | **10.0108** | **5.3000e-004** | **0.0000** | **0.0547** | **0.0547** | **0.0000** | **0.0547** | **0.0547** | **0.0000** | **17.9572** | **17.9572** | **0.0179** | **0.0000** | **18.3321** |

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

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation 1 | Site Preparation | 1/1/2017 | 1/13/2017 | 5 | 10 | |
| 2 | Grading 1 | Grading | 1/14/2017 | 4/28/2017 | 5 | 75 | |
| 3 | Building Construction 1 | Building Construction | 4/29/2017 | 6/22/2018 | 5 | 300 | |
| 4 | Architectural Coating 1 | Architectural Coating | 11/25/2017 | 6/22/2018 | 5 | 150 | |
| 5 | Paving 1 | Paving | 6/23/2018 | 7/20/2018 | 5 | 20 | |
| 6 | Site Preparation 2 | Site Preparation | 7/21/2018 | 7/27/2018 | 5 | 5 | |
| 7 | Grading 2 | Grading | 7/28/2018 | 9/7/2018 | 5 | 30 | |
| 8 | Building Construction 2 | Building Construction | 9/8/2018 | 5/17/2019 | 5 | 180 | |
| 9 | Architectural Coating 2 | Architectural Coating | 2/2/2019 | 5/17/2019 | 5 | 75 | |
| 10 | Paving 2 | Paving | 5/18/2019 | 5/31/2019 | 5 | 10 | |

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

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

**Acres of Paving: 0**

**Residential Indoor: 634,230; Residential Outdoor: 211,410; Non-Residential Indoor: 156,000; Non-Residential Outdoor: 52,000 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation 1 | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |
| Site Preparation 1 | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading 1 | Excavators | 2 | 8.00 | 162 | 0.38 |
| Grading 1 | Graders | 1 | 8.00 | 174 | 0.41 |
| Grading 1 | Rubber Tired Dozers | 1 | 8.00 | 255 | 0.40 |
| Grading 1 | Scrapers | 2 | 8.00 | 361 | 0.48 |
| Grading 1 | Tractors/Loaders/Backhoes | 0 | 8.00 | 97 | 0.37 |
| Building Construction 1 | Cranes | 1 | 8.00 | 226 | 0.29 |
| Building Construction 1 | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction 1 | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction 1 | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Building Construction 1 | Welders | 1 | 8.00 | 46 | 0.45 |
| Architectural Coating 1 | Air Compressors | 1 | 8.00 | 78 | 0.48 |
| Paving 1 | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving 1 | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Paving 1 | Rollers | 2 | 8.00 | 80 | 0.38 |
| Site Preparation 2 | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |
| Site Preparation 2 | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading 2 | Excavators | 2 | 8.00 | 162 | 0.38 |
| Grading 2 | Graders | 1 | 8.00 | 174 | 0.41 |
| Grading 2 | Rubber Tired Dozers | 1 | 8.00 | 255 | 0.40 |
| Grading 2 | Scrapers | 2 | 8.00 | 361 | 0.48 |
| Grading 2 | Tractors/Loaders/Backhoes | 0 | 8.00 | 97 | 0.37 |
| Building Construction 2 | Cranes | 1 | 8.00 | 226 | 0.29 |
| Building Construction 2 | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction 2 | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction 2 | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction 2 | Welders | 1 | 8.00 | 46 | 0.45 |
| Architectural Coating 2 | Air Compressors | 1 | 8.00 | 78 | 0.48 |
| Paving 2 | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving 2 | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Paving 2 | Rollers | 2 | 8.00 | 80 | 0.38 |
| Grading 1 | Crawler Tractors | 2 | 8.00 | 208 | 0.43 |
| Grading 2 | Crawler Tractors | 2 | 8.00 | 208 | 0.43 |

**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 1 | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading 1 | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction 1 | 9 | 159.00 | 62.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating 1 | 1 | 32.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving 1 | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation 2 | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading 2 | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction 2 | 9 | 159.00 | 62.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating 2 | 1 | 32.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving 2 | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation 1 - 2017

### 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 | 4.8382 | 51.7535 | 39.3970 | 0.0391 | | 2.7542 | 2.7542 | | 2.5339 | 2.5339 | | 4,003.0859 | 4,003.0859 | 1.2265 | | 4,028.8432 |
| **Total** | **4.8382** | **51.7535** | **39.3970** | **0.0391** | **18.0663** | **2.7542** | **20.8205** | **9.9307** | **2.5339** | **12.4646** | | **4,003.0859** | **4,003.0859** | **1.2265** | | **4,028.8432** |

### 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 | 0.0688 | 0.0844 | 1.1138 | 2.5300e-003 | 0.2012 | 1.4400e-003 | 0.2026 | 0.0534 | 1.3300e-003 | 0.0547 | | 201.9558 | 201.9558 | 9.5700e-003 | | 202.1568 |
| **Total** | **0.0688** | **0.0844** | **1.1138** | **2.5300e-003** | **0.2012** | **1.4400e-003** | **0.2026** | **0.0534** | **1.3300e-003** | **0.0547** | | **201.9558** | **201.9558** | **9.5700e-003** | | **202.1568** |

## 3.2 Site Preparation 1 - 2017

### 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 | | | | | 7.0458 | 0.0000 | 7.0458 | 3.8730 | 0.0000 | 3.8730 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.8382 | 51.7535 | 39.3970 | 0.0391 | | 2.7542 | 2.7542 | | 2.5339 | 2.5339 | 0.0000 | 4,003.0859 | 4,003.0859 | 1.2265 | | 4,028.8432 |
| **Total** | **4.8382** | **51.7535** | **39.3970** | **0.0391** | **7.0458** | **2.7542** | **9.8001** | **3.8730** | **2.5339** | **6.4069** | **0.0000** | **4,003.0859** | **4,003.0859** | **1.2265** | | **4,028.8432** |

### 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 | 0.0688 | 0.0844 | 1.1138 | 2.5300e-003 | 0.2012 | 1.4400e-003 | 0.2026 | 0.0534 | 1.3300e-003 | 0.0547 | | 201.9558 | 201.9558 | 9.5700e-003 | | 202.1568 |
| **Total** | **0.0688** | **0.0844** | **1.1138** | **2.5300e-003** | **0.2012** | **1.4400e-003** | **0.2026** | **0.0534** | **1.3300e-003** | **0.0547** | | **201.9558** | **201.9558** | **9.5700e-003** | | **202.1568** |

## 3.3 Grading 1 - 2017

### 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 | | | | | 9.7338 | 0.0000 | 9.7338 | 3.7110 | 0.0000 | 3.7110 | | | 0.0000 | | | 0.0000 |
| Off-Road | 6.8168 | 81.6248 | 47.4972 | 0.0709 | | 3.5511 | 3.5511 | | 3.2670 | 3.2670 | | 7,249.3599 | 7,249.3599 | 2.2212 | | 7,296.0049 |
| **Total** | **6.8168** | **81.6248** | **47.4972** | **0.0709** | **9.7338** | **3.5511** | **13.2849** | **3.7110** | **3.2670** | **6.9780** | | **7,249.3599** | **7,249.3599** | **2.2212** | | **7,296.0049** |

### 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 | 0.0764 | 0.0937 | 1.2375 | 2.8100e-003 | 0.2236 | 1.6000e-003 | 0.2252 | 0.0593 | 1.4700e-003 | 0.0608 | | 224.3953 | 224.3953 | 0.0106 | | 224.6187 |
| **Total** | **0.0764** | **0.0937** | **1.2375** | **2.8100e-003** | **0.2236** | **1.6000e-003** | **0.2252** | **0.0593** | **1.4700e-003** | **0.0608** | | **224.3953** | **224.3953** | **0.0106** | | **224.6187** |

## 3.3 Grading 1 - 2017

### 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 | | | | | 3.7962 | 0.0000 | 3.7962 | 1.4473 | 0.0000 | 1.4473 | | | 0.0000 | | | 0.0000 |
| Off-Road | 6.8168 | 81.6248 | 47.4972 | 0.0709 | | 3.5511 | 3.5511 | | 3.2670 | 3.2670 | 0.0000 | 7,249.3599 | 7,249.3599 | 2.2212 | | 7,296.0049 |
| **Total** | **6.8168** | **81.6248** | **47.4972** | **0.0709** | **3.7962** | **3.5511** | **7.3473** | **1.4473** | **3.2670** | **4.7143** | **0.0000** | **7,249.3599** | **7,249.3599** | **2.2212** | | **7,296.0049** |

### 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 | 0.0764 | 0.0937 | 1.2375 | 2.8100e-003 | 0.2236 | 1.6000e-003 | 0.2252 | 0.0593 | 1.4700e-003 | 0.0608 | | 224.3953 | 224.3953 | 0.0106 | | 224.6187 |
| **Total** | **0.0764** | **0.0937** | **1.2375** | **2.8100e-003** | **0.2236** | **1.6000e-003** | **0.2252** | **0.0593** | **1.4700e-003** | **0.0608** | | **224.3953** | **224.3953** | **0.0106** | | **224.6187** |

## 3.4 Building Construction 1 - 2017

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.3022 | 28.5087 | 19.3714 | 0.0287 | | 1.9099 | 1.9099 | | 1.7914 | 1.7914 | | 2,831.3094 | 2,831.3094 | 0.7084 | | 2,846.1853 |
| **Total** | **3.3022** | **28.5087** | **19.3714** | **0.0287** | | **1.9099** | **1.9099** | | **1.7914** | **1.7914** | | **2,831.3094** | **2,831.3094** | **0.7084** | | **2,846.1853** |

### 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 | 0.4854 | 4.9238 | 5.8366 | 0.0135 | 0.3896 | 0.0800 | 0.4695 | 0.1112 | 0.0735 | 0.1848 | | 1,329.6123 | 1,329.6123 | 9.4100e-003 | | 1,329.8098 |
| Worker | 0.6077 | 0.7453 | 9.8382 | 0.0223 | 1.7772 | 0.0127 | 1.7900 | 0.4713 | 0.0117 | 0.4831 | | 1,783.9427 | 1,783.9427 | 0.0846 | | 1,785.7187 |
| **Total** | **1.0931** | **5.6690** | **15.6748** | **0.0358** | **2.1668** | **0.0927** | **2.2595** | **0.5826** | **0.0852** | **0.6678** | | **3,113.5550** | **3,113.5550** | **0.0940** | | **3,115.5284** |

## 3.4 Building Construction 1 - 2017

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.3022 | 28.5087 | 19.3714 | 0.0287 | | 1.9099 | 1.9099 | | 1.7914 | 1.7914 | 0.0000 | 2,831.3094 | 2,831.3094 | 0.7084 | | 2,846.1853 |
| **Total** | **3.3022** | **28.5087** | **19.3714** | **0.0287** | | **1.9099** | **1.9099** | | **1.7914** | **1.7914** | **0.0000** | **2,831.3094** | **2,831.3094** | **0.7084** | | **2,846.1853** |

### 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 | 0.4854 | 4.9238 | 5.8366 | 0.0135 | 0.3896 | 0.0800 | 0.4695 | 0.1112 | 0.0735 | 0.1848 | | 1,329.6123 | 1,329.6123 | 9.4100e-003 | | 1,329.8098 |
| Worker | 0.6077 | 0.7453 | 9.8382 | 0.0223 | 1.7772 | 0.0127 | 1.7900 | 0.4713 | 0.0117 | 0.4831 | | 1,783.9427 | 1,783.9427 | 0.0846 | | 1,785.7187 |
| **Total** | **1.0931** | **5.6690** | **15.6748** | **0.0358** | **2.1668** | **0.0927** | **2.2595** | **0.5826** | **0.0852** | **0.6678** | | **3,113.5550** | **3,113.5550** | **0.0940** | | **3,115.5284** |

## 3.4 Building Construction 1 - 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 | 2.8383 | 25.0811 | 18.7173 | 0.0287 | | 1.6002 | 1.6002 | | 1.5023 | 1.5023 | | 2,798.2338 | 2,798.2338 | 0.6973 | | 2,812.8775 |
| **Total** | **2.8383** | **25.0811** | **18.7173** | **0.0287** | | **1.6002** | **1.6002** | | **1.5023** | **1.5023** | | **2,798.2338** | **2,798.2338** | **0.6973** | | **2,812.8775** |

### 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 | 0.4493 | 4.5144 | 5.5084 | 0.0134 | 0.3895 | 0.0752 | 0.4647 | 0.1112 | 0.0692 | 0.1804 | | 1,306.8593 | 1,306.8593 | 9.3400e-003 | | 1,307.0555 |
| Worker | 0.5429 | 0.6727 | 8.8928 | 0.0223 | 1.7772 | 0.0124 | 1.7896 | 0.4713 | 0.0115 | 0.4828 | | 1,716.5428 | 1,716.5428 | 0.0781 | | 1,718.1828 |
| **Total** | **0.9921** | **5.1872** | **14.4011** | **0.0358** | **2.1667** | **0.0876** | **2.2543** | **0.5825** | **0.0807** | **0.6632** | | **3,023.4021** | **3,023.4021** | **0.0874** | | **3,025.2383** |

## 3.4 Building Construction 1 - 2018

### 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 | 2.8383 | 25.0811 | 18.7173 | 0.0287 | | 1.6002 | 1.6002 | | 1.5023 | 1.5023 | 0.0000 | 2,798.2338 | 2,798.2338 | 0.6973 | | 2,812.8775 |
| **Total** | **2.8383** | **25.0811** | **18.7173** | **0.0287** | | **1.6002** | **1.6002** | | **1.5023** | **1.5023** | **0.0000** | **2,798.2338** | **2,798.2338** | **0.6973** | | **2,812.8775** |

### 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 | 0.4493 | 4.5144 | 5.5084 | 0.0134 | 0.3895 | 0.0752 | 0.4647 | 0.1112 | 0.0692 | 0.1804 | | 1,306.8593 | 1,306.8593 | 9.3400e-003 | | 1,307.0555 |
| Worker | 0.5429 | 0.6727 | 8.8928 | 0.0223 | 1.7772 | 0.0124 | 1.7896 | 0.4713 | 0.0115 | 0.4828 | | 1,716.5428 | 1,716.5428 | 0.0781 | | 1,718.1828 |
| **Total** | **0.9921** | **5.1872** | **14.4011** | **0.0358** | **2.1667** | **0.0876** | **2.2543** | **0.5825** | **0.0807** | **0.6632** | | **3,023.4021** | **3,023.4021** | **0.0874** | | **3,025.2383** |

## 3.5 Architectural Coating 1 - 2017

### 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 | 32.3994 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4431 | 2.9134 | 2.4908 | 3.9600e-003 | | 0.2311 | 0.2311 | | 0.2311 | 0.2311 | | 375.2641 | 375.2641 | 0.0396 | | 376.0961 |
| **Total** | **32.8425** | **2.9134** | **2.4908** | **3.9600e-003** | | **0.2311** | **0.2311** | | **0.2311** | **0.2311** | | **375.2641** | **375.2641** | **0.0396** | | **376.0961** |

### 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 | 0.1223 | 0.1500 | 1.9800 | 4.5000e-003 | 0.3577 | 2.5600e-003 | 0.3602 | 0.0949 | 2.3600e-003 | 0.0972 | | 359.0325 | 359.0325 | 0.0170 | | 359.3899 |
| **Total** | **0.1223** | **0.1500** | **1.9800** | **4.5000e-003** | **0.3577** | **2.5600e-003** | **0.3602** | **0.0949** | **2.3600e-003** | **0.0972** | | **359.0325** | **359.0325** | **0.0170** | | **359.3899** |

## 3.5 Architectural Coating 1 - 2017

### 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 | 32.3994 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4431 | 2.9134 | 2.4908 | 3.9600e-003 | | 0.2311 | 0.2311 | | 0.2311 | 0.2311 | 0.0000 | 375.2641 | 375.2641 | 0.0396 | | 376.0961 |
| **Total** | **32.8425** | **2.9134** | **2.4908** | **3.9600e-003** | | **0.2311** | **0.2311** | | **0.2311** | **0.2311** | **0.0000** | **375.2641** | **375.2641** | **0.0396** | | **376.0961** |

### 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 | 0.1223 | 0.1500 | 1.9800 | 4.5000e-003 | 0.3577 | 2.5600e-003 | 0.3602 | 0.0949 | 2.3600e-003 | 0.0972 | | 359.0325 | 359.0325 | 0.0170 | | 359.3899 |
| **Total** | **0.1223** | **0.1500** | **1.9800** | **4.5000e-003** | **0.3577** | **2.5600e-003** | **0.3602** | **0.0949** | **2.3600e-003** | **0.0972** | | **359.0325** | **359.0325** | **0.0170** | | **359.3899** |

## 3.5 Architectural Coating 1 - 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 | | | | | |
| Archit. Coating | 32.3994 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3982 | 2.6743 | 2.4723 | 3.9600e-003 | | 0.2007 | 0.2007 | | 0.2007 | 0.2007 | | 375.2647 | 375.2647 | 0.0357 | | 376.0135 |
| **Total** | **32.7976** | **2.6743** | **2.4723** | **3.9600e-003** | | **0.2007** | **0.2007** | | **0.2007** | **0.2007** | | **375.2647** | **375.2647** | **0.0357** | | **376.0135** |

### 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 | 0.1093 | 0.1354 | 1.7897 | 4.5000e-003 | 0.3577 | 2.4900e-003 | 0.3602 | 0.0949 | 2.3100e-003 | 0.0972 | | 345.4677 | 345.4677 | 0.0157 | | 345.7978 |
| **Total** | **0.1093** | **0.1354** | **1.7897** | **4.5000e-003** | **0.3577** | **2.4900e-003** | **0.3602** | **0.0949** | **2.3100e-003** | **0.0972** | | **345.4677** | **345.4677** | **0.0157** | | **345.7978** |

## 3.5 Architectural Coating 1 - 2018

### 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 | 32.3994 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3982 | 2.6743 | 2.4723 | 3.9600e-003 | | 0.2007 | 0.2007 | | 0.2007 | 0.2007 | 0.0000 | 375.2647 | 375.2647 | 0.0357 | | 376.0135 |
| **Total** | **32.7976** | **2.6743** | **2.4723** | **3.9600e-003** | | **0.2007** | **0.2007** | | **0.2007** | **0.2007** | **0.0000** | **375.2647** | **375.2647** | **0.0357** | | **376.0135** |

### 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 | 0.1093 | 0.1354 | 1.7897 | 4.5000e-003 | 0.3577 | 2.4900e-003 | 0.3602 | 0.0949 | 2.3100e-003 | 0.0972 | | 345.4677 | 345.4677 | 0.0157 | | 345.7978 |
| **Total** | **0.1093** | **0.1354** | **1.7897** | **4.5000e-003** | **0.3577** | **2.4900e-003** | **0.3602** | **0.0949** | **2.3100e-003** | **0.0972** | | **345.4677** | **345.4677** | **0.0157** | | **345.7978** |

## 3.6 Paving 1 - 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 | 1.6114 | 17.1628 | 14.4944 | 0.0223 | | 0.9386 | 0.9386 | | 0.8635 | 0.8635 | | 2,245.2695 | 2,245.2695 | 0.6990 | | 2,259.9481 |
| Paving | 0.5895 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.2009** | **17.1628** | **14.4944** | **0.0223** | | **0.9386** | **0.9386** | | **0.8635** | **0.8635** | | **2,245.2695** | **2,245.2695** | **0.6990** | | **2,259.9481** |

### 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 | 0.0512 | 0.0635 | 0.8389 | 2.1100e-003 | 0.1677 | 1.1700e-003 | 0.1688 | 0.0445 | 1.0800e-003 | 0.0456 | | 161.9380 | 161.9380 | 7.3700e-003 | | 162.0927 |
| **Total** | **0.0512** | **0.0635** | **0.8389** | **2.1100e-003** | **0.1677** | **1.1700e-003** | **0.1688** | **0.0445** | **1.0800e-003** | **0.0456** | | **161.9380** | **161.9380** | **7.3700e-003** | | **162.0927** |

## 3.6 Paving 1 - 2018

### 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 | 1.6114 | 17.1628 | 14.4944 | 0.0223 | | 0.9386 | 0.9386 | | 0.8635 | 0.8635 | 0.0000 | 2,245.2695 | 2,245.2695 | 0.6990 | | 2,259.9481 |
| Paving | 0.5895 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.2009** | **17.1628** | **14.4944** | **0.0223** | | **0.9386** | **0.9386** | | **0.8635** | **0.8635** | **0.0000** | **2,245.2695** | **2,245.2695** | **0.6990** | | **2,259.9481** |

### 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 | 0.0512 | 0.0635 | 0.8389 | 2.1100e-003 | 0.1677 | 1.1700e-003 | 0.1688 | 0.0445 | 1.0800e-003 | 0.0456 | | 161.9380 | 161.9380 | 7.3700e-003 | | 162.0927 |
| **Total** | **0.0512** | **0.0635** | **0.8389** | **2.1100e-003** | **0.1677** | **1.1700e-003** | **0.1688** | **0.0445** | **1.0800e-003** | **0.0456** | | **161.9380** | **161.9380** | **7.3700e-003** | | **162.0927** |

## 3.7 Site Preparation 2 - 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 | 4.2921 | 45.6088 | 36.2346 | 0.0391 | | 2.3654 | 2.3654 | | 2.1762 | 2.1762 | | 3,939.7731 | 3,939.7731 | 1.2265 | | 3,965.5297 |
| **Total** | **4.2921** | **45.6088** | **36.2346** | **0.0391** | **18.0663** | **2.3654** | **20.4317** | **9.9307** | **2.1762** | **12.1069** | | **3,939.7731** | **3,939.7731** | **1.2265** | | **3,965.5297** |

### 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 | 0.0615 | 0.0762 | 1.0067 | 2.5300e-003 | 0.2012 | 1.4000e-003 | 0.2026 | 0.0534 | 1.3000e-003 | 0.0547 | | 194.3256 | 194.3256 | 8.8400e-003 | | 194.5113 |
| **Total** | **0.0615** | **0.0762** | **1.0067** | **2.5300e-003** | **0.2012** | **1.4000e-003** | **0.2026** | **0.0534** | **1.3000e-003** | **0.0547** | | **194.3256** | **194.3256** | **8.8400e-003** | | **194.5113** |

## 3.7 Site Preparation 2 - 2018

### 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 | | | | | 7.0458 | 0.0000 | 7.0458 | 3.8730 | 0.0000 | 3.8730 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.2921 | 45.6088 | 36.2346 | 0.0391 | | 2.3654 | 2.3654 | | 2.1762 | 2.1762 | 0.0000 | 3,939.7731 | 3,939.7731 | 1.2265 | | 3,965.5297 |
| **Total** | **4.2921** | **45.6088** | **36.2346** | **0.0391** | **7.0458** | **2.3654** | **9.4113** | **3.8730** | **2.1762** | **6.0491** | **0.0000** | **3,939.7731** | **3,939.7731** | **1.2265** | | **3,965.5297** |

### 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 | 0.0615 | 0.0762 | 1.0067 | 2.5300e-003 | 0.2012 | 1.4000e-003 | 0.2026 | 0.0534 | 1.3000e-003 | 0.0547 | | 194.3256 | 194.3256 | 8.8400e-003 | | 194.5113 |
| **Total** | **0.0615** | **0.0762** | **1.0067** | **2.5300e-003** | **0.2012** | **1.4000e-003** | **0.2026** | **0.0534** | **1.3000e-003** | **0.0547** | | **194.3256** | **194.3256** | **8.8400e-003** | | **194.5113** |

## 3.8 Grading 2 - 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 | | | | | 9.7338 | 0.0000 | 9.7338 | 3.7110 | 0.0000 | 3.7110 | | | 0.0000 | | | 0.0000 |
| Off-Road | 6.0104 | 70.9159 | 42.8356 | 0.0709 | | 3.0450 | 3.0450 | | 2.8014 | 2.8014 | | 7,133.8934 | 7,133.8934 | 2.2209 | | 7,180.5318 |
| **Total** | **6.0104** | **70.9159** | **42.8356** | **0.0709** | **9.7338** | **3.0450** | **12.7789** | **3.7110** | **2.8014** | **6.5124** | | **7,133.8934** | **7,133.8934** | **2.2209** | | **7,180.5318** |

### 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 | 0.0683 | 0.0846 | 1.1186 | 2.8100e-003 | 0.2236 | 1.5600e-003 | 0.2251 | 0.0593 | 1.4400e-003 | 0.0607 | | 215.9173 | 215.9173 | 9.8200e-003 | | 216.1236 |
| **Total** | **0.0683** | **0.0846** | **1.1186** | **2.8100e-003** | **0.2236** | **1.5600e-003** | **0.2251** | **0.0593** | **1.4400e-003** | **0.0607** | | **215.9173** | **215.9173** | **9.8200e-003** | | **216.1236** |

## 3.8 Grading 2 - 2018

### 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 | | | | | 3.7962 | 0.0000 | 3.7962 | 1.4473 | 0.0000 | 1.4473 | | | 0.0000 | | | 0.0000 |
| Off-Road | 6.0104 | 70.9159 | 42.8356 | 0.0709 | | 3.0450 | 3.0450 | | 2.8014 | 2.8014 | 0.0000 | 7,133.8934 | 7,133.8934 | 2.2209 | | 7,180.5318 |
| **Total** | **6.0104** | **70.9159** | **42.8356** | **0.0709** | **3.7962** | **3.0450** | **6.8412** | **1.4473** | **2.8014** | **4.2487** | **0.0000** | **7,133.8934** | **7,133.8934** | **2.2209** | | **7,180.5318** |

### 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 | 0.0683 | 0.0846 | 1.1186 | 2.8100e-003 | 0.2236 | 1.5600e-003 | 0.2251 | 0.0593 | 1.4400e-003 | 0.0607 | | 215.9173 | 215.9173 | 9.8200e-003 | | 216.1236 |
| **Total** | **0.0683** | **0.0846** | **1.1186** | **2.8100e-003** | **0.2236** | **1.5600e-003** | **0.2251** | **0.0593** | **1.4400e-003** | **0.0607** | | **215.9173** | **215.9173** | **9.8200e-003** | | **216.1236** |

## 3.9 Building Construction 2 - 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 | 2.8383 | 25.0811 | 18.7173 | 0.0287 | | 1.6002 | 1.6002 | | 1.5023 | 1.5023 | | 2,798.2338 | 2,798.2338 | 0.6973 | | 2,812.8775 |
| **Total** | **2.8383** | **25.0811** | **18.7173** | **0.0287** | | **1.6002** | **1.6002** | | **1.5023** | **1.5023** | | **2,798.2338** | **2,798.2338** | **0.6973** | | **2,812.8775** |

### 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 | 0.4493 | 4.5144 | 5.5084 | 0.0134 | 0.3895 | 0.0752 | 0.4647 | 0.1112 | 0.0692 | 0.1804 | | 1,306.8593 | 1,306.8593 | 9.3400e-003 | | 1,307.0555 |
| Worker | 0.5429 | 0.6727 | 8.8928 | 0.0223 | 1.7772 | 0.0124 | 1.7896 | 0.4713 | 0.0115 | 0.4828 | | 1,716.5428 | 1,716.5428 | 0.0781 | | 1,718.1828 |
| **Total** | **0.9921** | **5.1872** | **14.4011** | **0.0358** | **2.1667** | **0.0876** | **2.2543** | **0.5825** | **0.0807** | **0.6632** | | **3,023.4021** | **3,023.4021** | **0.0874** | | **3,025.2383** |

## 3.9 Building Construction 2 - 2018

### 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 | 2.8383 | 25.0811 | 18.7173 | 0.0287 | | 1.6002 | 1.6002 | | 1.5023 | 1.5023 | 0.0000 | 2,798.2338 | 2,798.2338 | 0.6973 | | 2,812.8775 |
| **Total** | **2.8383** | **25.0811** | **18.7173** | **0.0287** | | **1.6002** | **1.6002** | | **1.5023** | **1.5023** | **0.0000** | **2,798.2338** | **2,798.2338** | **0.6973** | | **2,812.8775** |

### 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 | 0.4493 | 4.5144 | 5.5084 | 0.0134 | 0.3895 | 0.0752 | 0.4647 | 0.1112 | 0.0692 | 0.1804 | | 1,306.8593 | 1,306.8593 | 9.3400e-003 | | 1,307.0555 |
| Worker | 0.5429 | 0.6727 | 8.8928 | 0.0223 | 1.7772 | 0.0124 | 1.7896 | 0.4713 | 0.0115 | 0.4828 | | 1,716.5428 | 1,716.5428 | 0.0781 | | 1,718.1828 |
| **Total** | **0.9921** | **5.1872** | **14.4011** | **0.0358** | **2.1667** | **0.0876** | **2.2543** | **0.5825** | **0.0807** | **0.6632** | | **3,023.4021** | **3,023.4021** | **0.0874** | | **3,025.2383** |

## 3.9 Building Construction 2 - 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 | 2.5006 | 22.5762 | 18.2643 | 0.0287 | | 1.3747 | 1.3747 | | 1.2908 | 1.2908 | | 2,765.9458 | 2,765.9458 | 0.6865 | | 2,780.3623 |
| **Total** | **2.5006** | **22.5762** | **18.2643** | **0.0287** | | **1.3747** | **1.3747** | | **1.2908** | **1.2908** | | **2,765.9458** | **2,765.9458** | **0.6865** | | **2,780.3623** |

### 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 | 0.4259 | 4.1459 | 5.3430 | 0.0133 | 0.3894 | 0.0721 | 0.4616 | 0.1112 | 0.0664 | 0.1775 | | 1,276.9752 | 1,276.9752 | 9.0300e-003 | | 1,277.1647 |
| Worker | 0.4940 | 0.6131 | 8.0658 | 0.0222 | 1.7772 | 0.0121 | 1.7894 | 0.4713 | 0.0112 | 0.4826 | | 1,644.3352 | 1,644.3352 | 0.0720 | | 1,645.8473 |
| **Total** | **0.9199** | **4.7590** | **13.4088** | **0.0356** | **2.1667** | **0.0842** | **2.2509** | **0.5825** | **0.0776** | **0.6601** | | **2,921.3104** | **2,921.3104** | **0.0810** | | **2,923.0120** |

## 3.9 Building Construction 2 - 2019

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.5006 | 22.5762 | 18.2643 | 0.0287 | | 1.3747 | 1.3747 | | 1.2908 | 1.2908 | 0.0000 | 2,765.9458 | 2,765.9458 | 0.6865 | | 2,780.3623 |
| **Total** | **2.5006** | **22.5762** | **18.2643** | **0.0287** | | **1.3747** | **1.3747** | | **1.2908** | **1.2908** | **0.0000** | **2,765.9458** | **2,765.9458** | **0.6865** | | **2,780.3623** |

### 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 | 0.4259 | 4.1459 | 5.3430 | 0.0133 | 0.3894 | 0.0721 | 0.4616 | 0.1112 | 0.0664 | 0.1775 | | 1,276.9752 | 1,276.9752 | 9.0300e-003 | | 1,277.1647 |
| Worker | 0.4940 | 0.6131 | 8.0658 | 0.0222 | 1.7772 | 0.0121 | 1.7894 | 0.4713 | 0.0112 | 0.4826 | | 1,644.3352 | 1,644.3352 | 0.0720 | | 1,645.8473 |
| **Total** | **0.9199** | **4.7590** | **13.4088** | **0.0356** | **2.1667** | **0.0842** | **2.2509** | **0.5825** | **0.0776** | **0.6601** | | **2,921.3104** | **2,921.3104** | **0.0810** | | **2,923.0120** |

## 3.10 Architectural Coating 2 - 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 | 64.7989 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3553 | 2.4472 | 2.4551 | 3.9600e-003 | | 0.1717 | 0.1717 | | 0.1717 | 0.1717 | | 375.2641 | 375.2641 | 0.0317 | | 375.9297 |
| **Total** | **65.1541** | **2.4472** | **2.4551** | **3.9600e-003** | | **0.1717** | **0.1717** | | **0.1717** | **0.1717** | | **375.2641** | **375.2641** | **0.0317** | | **375.9297** |

### 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 | 0.0994 | 0.1234 | 1.6233 | 4.4700e-003 | 0.3577 | 2.4400e-003 | 0.3601 | 0.0949 | 2.2600e-003 | 0.0971 | | 330.9354 | 330.9354 | 0.0145 | | 331.2397 |
| **Total** | **0.0994** | **0.1234** | **1.6233** | **4.4700e-003** | **0.3577** | **2.4400e-003** | **0.3601** | **0.0949** | **2.2600e-003** | **0.0971** | | **330.9354** | **330.9354** | **0.0145** | | **331.2397** |

## 3.10 Architectural Coating 2 - 2019

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 64.7989 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3553 | 2.4472 | 2.4551 | 3.9600e-003 | | 0.1717 | 0.1717 | | 0.1717 | 0.1717 | 0.0000 | 375.2641 | 375.2641 | 0.0317 | | 375.9297 |
| **Total** | **65.1541** | **2.4472** | **2.4551** | **3.9600e-003** | | **0.1717** | **0.1717** | | **0.1717** | **0.1717** | **0.0000** | **375.2641** | **375.2641** | **0.0317** | | **375.9297** |

### 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 | 0.0994 | 0.1234 | 1.6233 | 4.4700e-003 | 0.3577 | 2.4400e-003 | 0.3601 | 0.0949 | 2.2600e-003 | 0.0971 | | 330.9354 | 330.9354 | 0.0145 | | 331.2397 |
| **Total** | **0.0994** | **0.1234** | **1.6233** | **4.4700e-003** | **0.3577** | **2.4400e-003** | **0.3601** | **0.0949** | **2.2600e-003** | **0.0971** | | **330.9354** | **330.9354** | **0.0145** | | **331.2397** |

## 3.11 Paving 2 - 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 | 1.4259 | 14.9353 | 14.3652 | 0.0223 | | 0.8094 | 0.8094 | | 0.7447 | 0.7447 | | 2,208.9731 | 2,208.9731 | 0.6989 | | 2,223.6499 |
| Paving | 1.1790 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.6049** | **14.9353** | **14.3652** | **0.0223** | | **0.8094** | **0.8094** | | **0.7447** | **0.7447** | | **2,208.9731** | **2,208.9731** | **0.6989** | | **2,223.6499** |

### 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 | 0.0466 | 0.0578 | 0.7609 | 2.1000e-003 | 0.1677 | 1.1400e-003 | 0.1688 | 0.0445 | 1.0600e-003 | 0.0455 | | 155.1260 | 155.1260 | 6.7900e-003 | | 155.2686 |
| **Total** | **0.0466** | **0.0578** | **0.7609** | **2.1000e-003** | **0.1677** | **1.1400e-003** | **0.1688** | **0.0445** | **1.0600e-003** | **0.0455** | | **155.1260** | **155.1260** | **6.7900e-003** | | **155.2686** |

### 3.11 Paving 2 - 2019

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4259 | 14.9353 | 14.3652 | 0.0223 | | 0.8094 | 0.8094 | | 0.7447 | 0.7447 | 0.0000 | 2,208.9731 | 2,208.9731 | 0.6989 | | 2,223.6499 |
| Paving | 1.1790 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.6049** | **14.9353** | **14.3652** | **0.0223** | | **0.8094** | **0.8094** | | **0.7447** | **0.7447** | **0.0000** | **2,208.9731** | **2,208.9731** | **0.6989** | | **2,223.6499** |

**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 | 0.0466 | 0.0578 | 0.7609 | 2.1000e-003 | 0.1677 | 1.1400e-003 | 0.1688 | 0.0445 | 1.0600e-003 | 0.0455 | | 155.1260 | 155.1260 | 6.7900e-003 | | 155.2686 |
| **Total** | **0.0466** | **0.0578** | **0.7609** | **2.1000e-003** | **0.1677** | **1.1400e-003** | **0.1688** | **0.0445** | **1.0600e-003** | **0.0455** | | **155.1260** | **155.1260** | **6.7900e-003** | | **155.2686** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

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

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Regional Shopping Center | 0.00 | 0.00 | 0.00 | | |
| Single Family Housing | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Regional Shopping Center | 16.60 | 8.40 | 6.90 | 16.30 | 64.70 | 19.00 | 54 | 35 | 11 |
| Single Family Housing | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 5.0 Energy Detail

### 4.4 Fleet Mix

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

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

## 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 | | | | | |
| Single Family Housing | 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 |
| 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 |
| Regional Shopping Center | 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** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### Mitigated

| | 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 | | | | | |
| Single Family Housing | 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 |
| 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 |
| Regional Shopping Center | 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** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 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 | 0.3110 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | 0.0000 | 17.9572 | 17.9572 | 0.0179 | 0.0000 | 18.3321 |
| Unmitigated | 0.3110 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | 0.0000 | 17.9572 | 17.9572 | 0.0179 | 0.0000 | 18.3321 |

## 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 | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.1000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.3104 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | | 17.9572 | 17.9572 | 0.0179 | | 18.3321 |
| **Total** | **0.3110** | **0.1158** | **10.0108** | **5.3000e-004** | | **0.0547** | **0.0547** | | **0.0547** | **0.0547** | **0.0000** | **17.9572** | **17.9572** | **0.0179** | **0.0000** | **18.3321** |

### 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 | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.1000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.3104 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | | 17.9572 | 17.9572 | 0.0179 | | 18.3321 |
| **Total** | **0.3110** | **0.1158** | **10.0108** | **5.3000e-004** | | **0.0547** | **0.0547** | | **0.0547** | **0.0547** | **0.0000** | **17.9572** | **17.9572** | **0.0179** | **0.0000** | **18.3321** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Vegetation

# Rancho Palma (Construction)- Unmitigated

**San Bernardino-South Coast County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 500.00 | Space | 4.50 | 200,000.00 | 0 |
| Single Family Housing | 120.00 | Dwelling Unit | 28.40 | 313,200.00 | 343 |
| Regional Shopping Center | 98.00 | 1000sqft | 4.70 | 98,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 32 |
| **Climate Zone** | 10 | | | **Operational Year** | 2019 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 479.9 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics - CPUC GHG Calculator version 3c, worksheet tab "CO2 Allocations," cells AH/AQ 35-44.

Land Use - Total Lot Acreage: 37.6; Average home size is 2,610 SF based on a 50% maximum lot coverage

Construction Phase - Based on past project experience

Off-road Equipment - 8 hour workdays

Off-road Equipment - 8 hour workdays

Off-road Equipment - 8 hour workdays

Off-road Equipment - 8 hour workdays

Off-road Equipment - Based on past project experience

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Construction Off-road Equipment Mitigation -

Grading -

Trips and VMT -

Off-road Equipment - Based on past project experience

Vehicle Trips - Construction run only

Vechicle Emission Factors - Construction run only

Vechicle Emission Factors - Construction run only

Vechicle Emission Factors - Construction run only

Woodstoves - Construction run only

Consumer Products - Construction run only

Area Coating - Construction run only

Landscape Equipment - Construction run only

Energy Use - Construction run only

Water And Wastewater - Construction run only

Solid Waste - Construction run only

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaCoating | ReapplicationRatePercent | 10 | 0 |
| tblConstructionPhase | NumDays | 55.00 | 150.00 |
| tblConstructionPhase | NumDays | 55.00 | 75.00 |
| tblConstructionPhase | NumDays | 740.00 | 300.00 |
| tblConstructionPhase | NumDays | 740.00 | 180.00 |
| tblConstructionPhase | NumDays | 75.00 | 30.00 |
| tblConstructionPhase | NumDays | 55.00 | 10.00 |
| tblConstructionPhase | NumDays | 55.00 | 20.00 |
| tblConstructionPhase | NumDays | 30.00 | 10.00 |
| tblConstructionPhase | NumDays | 30.00 | 5.00 |
| tblConstructionPhase | PhaseEndDate | 1/18/2019 | 6/22/2018 |
| tblConstructionPhase | PhaseEndDate | 8/30/2019 | 5/17/2019 |
| tblConstructionPhase | PhaseStartDate | 6/23/2018 | 11/25/2017 |
| tblConstructionPhase | PhaseStartDate | 5/18/2019 | 2/2/2019 |
| tblConsumerProducts | ROG_EF | 1.98E-05 | 1E-09 |
| tblEnergyUse | LightingElect | 0.88 | 0.00 |
| tblEnergyUse | LightingElect | 7.62 | 0.00 |
| tblEnergyUse | LightingElect | 1,608.84 | 0.00 |
| tblEnergyUse | NT24E | 2.44 | 0.00 |
| tblEnergyUse | NT24E | 5,089.81 | 0.00 |
| tblEnergyUse | NT24NG | 0.30 | 0.00 |
| tblEnergyUse | NT24NG | 5,950.14 | 0.00 |
| tblEnergyUse | T24E | 5.60 | 0.00 |
| tblEnergyUse | T24E | 980.99 | 0.00 |
| tblEnergyUse | T24NG | 2.02 | 0.00 |
| tblEnergyUse | T24NG | 27,816.78 | 0.00 |
| tblFireplaces | NumberGas | 102.00 | 0.00 |

| | | | |
|---|---|---|---|
| tblFireplaces | NumberNoFireplace | 12.00 | 0.00 |
| tblFireplaces | NumberWood | 6.00 | 0.00 |
| tblLandscapeEquipment | NumberSummerDays | 250 | 1 |
| tblLandUse | LandUseSquareFeet | 216,000.00 | 313,200.00 |
| tblLandUse | LotAcreage | 38.96 | 28.40 |
| tblLandUse | LotAcreage | 2.25 | 4.70 |
| tblOffRoadEquipment | LoadFactor | 0.43 | 0.43 |
| tblOffRoadEquipment | LoadFactor | 0.43 | 0.43 |
| tblOffRoadEquipment | OffRoadEquipmentType | | Crawler Tractors |
| tblOffRoadEquipment | OffRoadEquipmentType | | Crawler Tractors |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 630.89 | 479.9 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2019 |
| tblSolidWaste | SolidWasteGenerationRate | 102.90 | 0.00 |
| tblSolidWaste | SolidWasteGenerationRate | 140.63 | 0.00 |
| tblVehicleEF | HHD | 0.04 | 0.00 |
| tblVehicleEF | HHD | 0.04 | 0.00 |
| tblVehicleEF | HHD | 0.04 | 0.00 |
| tblVehicleEF | LDA | 0.47 | 0.00 |
| tblVehicleEF | LDA | 0.47 | 0.00 |
| tblVehicleEF | LDA | 0.47 | 0.00 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDT1 | 0.07 | 0.00 |
| tblVehicleEF | LDT1 | 0.07 | 0.00 |
| tblVehicleEF | LDT1 | 0.07 | 0.00 |
| tblVehicleEF | LDT2 | 0.17 | 0.00 |
| tblVehicleEF | LDT2 | 0.17 | 0.00 |
| tblVehicleEF | LDT2 | 0.17 | 0.00 |
| tblVehicleEF | LHD1 | 0.06 | 0.00 |
| tblVehicleEF | LHD1 | 0.06 | 0.00 |
| tblVehicleEF | LHD1 | 0.06 | 0.00 |
| tblVehicleEF | LHD2 | 9.0560e-003 | 0.00 |
| tblVehicleEF | LHD2 | 9.0560e-003 | 0.00 |
| tblVehicleEF | LHD2 | 9.0560e-003 | 0.00 |
| tblVehicleEF | MCY | 4.9860e-003 | 0.00 |
| tblVehicleEF | MCY | 4.9860e-003 | 0.00 |
| tblVehicleEF | MCY | 4.9860e-003 | 0.00 |
| tblVehicleEF | MDV | 0.16 | 0.00 |
| tblVehicleEF | MDV | 0.16 | 0.00 |
| tblVehicleEF | MDV | 0.16 | 0.00 |
| tblVehicleEF | MH | 2.9520e-003 | 0.00 |
| tblVehicleEF | MH | 2.9520e-003 | 0.00 |
| tblVehicleEF | MH | 2.9520e-003 | 0.00 |
| tblVehicleEF | MHD | 0.02 | 0.00 |
| tblVehicleEF | MHD | 0.02 | 0.00 |
| tblVehicleEF | MHD | 0.02 | 0.00 |
| tblVehicleEF | OBUS | 1.1120e-003 | 0.00 |
| tblVehicleEF | OBUS | 1.1120e-003 | 0.00 |
| tblVehicleEF | OBUS | 1.1120e-003 | 0.00 |
| tblVehicleEF | SBUS | 6.8600e-004 | 0.00 |

| | | | |
|---|---|---|---|
| tblVehicleEF | SBUS | 6.8600e-004 | 0.00 |
| tblVehicleEF | SBUS | 6.8600e-004 | 0.00 |
| tblVehicleEF | UBUS | 1.3360e-003 | 0.00 |
| tblVehicleEF | UBUS | 1.3360e-003 | 0.00 |
| tblVehicleEF | UBUS | 1.3360e-003 | 0.00 |
| tblVehicleTrips | ST_TR | 49.97 | 0.00 |
| tblVehicleTrips | ST_TR | 10.08 | 0.00 |
| tblVehicleTrips | SU_TR | 25.24 | 0.00 |
| tblVehicleTrips | SU_TR | 8.77 | 0.00 |
| tblVehicleTrips | WD_TR | 42.94 | 0.00 |
| tblVehicleTrips | WD_TR | 9.57 | 0.00 |
| tblWater | IndoorWaterUseRate | 7,259,107.11 | 0.00 |
| tblWater | IndoorWaterUseRate | 7,818,483.07 | 0.00 |
| tblWater | OutdoorWaterUseRate | 4,449,130.16 | 0.00 |
| tblWater | OutdoorWaterUseRate | 4,929,043.68 | 0.00 |
| tblWoodstoves | NumberCatalytic | 6.00 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 6.00 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2017 | 37.3440 | 81.7249 | 48.5524 | 0.0734 | 18.2675 | 3.5527 | 21.0231 | 9.9840 | 3.2685 | 12.5193 | 0.0000 | 7,453.7329 | 7,453.7329 | 2.2318 | 0.0000 | 7,500.6013 |
| 2018 | 36.7210 | 71.0062 | 43.7863 | 0.0734 | 18.2675 | 3.0466 | 20.6343 | 9.9840 | 2.8029 | 12.1615 | 0.0000 | 7,330.5235 | 7,330.5235 | 2.2307 | 0.0000 | 7,377.3683 |
| 2019 | 68.6599 | 30.0578 | 35.1916 | 0.0702 | 2.5244 | 1.6337 | 4.1581 | 0.6774 | 1.5429 | 2.2202 | 0.0000 | 6,206.1445 | 6,206.1445 | 0.8140 | 0.0000 | 6,223.2391 |
| **Total** | **142.7248** | **182.7888** | **127.5302** | **0.2170** | **39.0593** | **8.2330** | **45.8154** | **20.6455** | **7.6142** | **26.9010** | **0.0000** | **20,990.4010** | **20,990.4010** | **5.2766** | **0.0000** | **21,101.2086** |

### 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 | | | | | |
| 2017 | 37.3440 | 81.7249 | 48.5524 | 0.0734 | 7.2470 | 3.5527 | 10.0027 | 3.9263 | 3.2685 | 6.4615 | 0.0000 | 7,453.7329 | 7,453.7329 | 2.2318 | 0.0000 | 7,500.6013 |
| 2018 | 36.7210 | 71.0062 | 43.7863 | 0.0734 | 7.2470 | 3.0466 | 9.6139 | 3.9263 | 2.8029 | 6.1038 | 0.0000 | 7,330.5235 | 7,330.5235 | 2.2307 | 0.0000 | 7,377.3683 |
| 2019 | 68.6599 | 30.0578 | 35.1916 | 0.0702 | 2.5244 | 1.6337 | 4.1581 | 0.6774 | 1.5429 | 2.2202 | 0.0000 | 6,206.1445 | 6,206.1445 | 0.8140 | 0.0000 | 6,223.2390 |
| **Total** | **142.7248** | **182.7888** | **127.5302** | **0.2170** | **17.0185** | **8.2330** | **23.7746** | **8.5300** | **7.6142** | **14.7856** | **0.0000** | **20,990.4010** | **20,990.4010** | **5.2766** | **0.0000** | **21,101.2086** |

| | ROG | NOx | 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** | **56.43** | **0.00** | **48.11** | **58.68** | **0.00** | **45.04** | **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 | 0.3110 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | 0.0000 | 17.9572 | 17.9572 | 0.0179 | 0.0000 | 18.3321 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.3110** | **0.1158** | **10.0108** | **5.3000e-004** | **0.0000** | **0.0547** | **0.0547** | **0.0000** | **0.0547** | **0.0547** | **0.0000** | **17.9572** | **17.9572** | **0.0179** | **0.0000** | **18.3321** |

### 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 | 0.3110 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | 0.0000 | 17.9572 | 17.9572 | 0.0179 | 0.0000 | 18.3321 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.3110** | **0.1158** | **10.0108** | **5.3000e-004** | **0.0000** | **0.0547** | **0.0547** | **0.0000** | **0.0547** | **0.0547** | **0.0000** | **17.9572** | **17.9572** | **0.0179** | **0.0000** | **18.3321** |

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

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation 1 | Site Preparation | 1/1/2017 | 1/13/2017 | 5 | 10 | |
| 2 | Grading 1 | Grading | 1/14/2017 | 4/28/2017 | 5 | 75 | |
| 3 | Building Construction 1 | Building Construction | 4/29/2017 | 6/22/2018 | 5 | 300 | |
| 4 | Architectural Coating 1 | Architectural Coating | 11/25/2017 | 6/22/2018 | 5 | 150 | |
| 5 | Paving 1 | Paving | 6/23/2018 | 7/20/2018 | 5 | 20 | |
| 6 | Site Preparation 2 | Site Preparation | 7/21/2018 | 7/27/2018 | 5 | 5 | |
| 7 | Grading 2 | Grading | 7/28/2018 | 9/7/2018 | 5 | 30 | |
| 8 | Building Construction 2 | Building Construction | 9/8/2018 | 5/17/2019 | 5 | 180 | |
| 9 | Architectural Coating 2 | Architectural Coating | 2/2/2019 | 5/17/2019 | 5 | 75 | |
| 10 | Paving 2 | Paving | 5/18/2019 | 5/31/2019 | 5 | 10 | |

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

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

**Acres of Paving: 0**

**Residential Indoor: 634,230; Residential Outdoor: 211,410; Non-Residential Indoor: 156,000; Non-Residential Outdoor: 52,000 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation 1 | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |
| Site Preparation 1 | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading 1 | Excavators | 2 | 8.00 | 162 | 0.38 |
| Grading 1 | Graders | 1 | 8.00 | 174 | 0.41 |
| Grading 1 | Rubber Tired Dozers | 1 | 8.00 | 255 | 0.40 |
| Grading 1 | Scrapers | 2 | 8.00 | 361 | 0.48 |
| Grading 1 | Tractors/Loaders/Backhoes | 0 | 8.00 | 97 | 0.37 |
| Building Construction 1 | Cranes | 1 | 8.00 | 226 | 0.29 |
| Building Construction 1 | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction 1 | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction 1 | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Building Construction 1 | Welders | 1 | 8.00 | 46 | 0.45 |
| Architectural Coating 1 | Air Compressors | 1 | 8.00 | 78 | 0.48 |
| Paving 1 | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving 1 | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Paving 1 | Rollers | 2 | 8.00 | 80 | 0.38 |
| Site Preparation 2 | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |
| Site Preparation 2 | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading 2 | Excavators | 2 | 8.00 | 162 | 0.38 |
| Grading 2 | Graders | 1 | 8.00 | 174 | 0.41 |
| Grading 2 | Rubber Tired Dozers | 1 | 8.00 | 255 | 0.40 |
| Grading 2 | Scrapers | 2 | 8.00 | 361 | 0.48 |
| Grading 2 | Tractors/Loaders/Backhoes | 0 | 8.00 | 97 | 0.37 |
| Building Construction 2 | Cranes | 1 | 8.00 | 226 | 0.29 |
| Building Construction 2 | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction 2 | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction 2 | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction 2 | Welders | 1 | 8.00 | 46 | 0.45 |
| Architectural Coating 2 | Air Compressors | 1 | 8.00 | 78 | 0.48 |
| Paving 2 | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving 2 | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Paving 2 | Rollers | 2 | 8.00 | 80 | 0.38 |
| Grading 1 | Crawler Tractors | 2 | 8.00 | 208 | 0.43 |
| Grading 2 | Crawler Tractors | 2 | 8.00 | 208 | 0.43 |

**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 1 | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading 1 | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction 1 | 9 | 159.00 | 62.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating 1 | 1 | 32.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving 1 | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation 2 | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading 2 | 8 | 20.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction 2 | 9 | 159.00 | 62.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating 2 | 1 | 32.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving 2 | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation 1 - 2017

### 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 | 4.8382 | 51.7535 | 39.3970 | 0.0391 | | 2.7542 | 2.7542 | | 2.5339 | 2.5339 | | 4,003.0859 | 4,003.0859 | 1.2265 | | 4,028.8432 |
| **Total** | **4.8382** | **51.7535** | **39.3970** | **0.0391** | **18.0663** | **2.7542** | **20.8205** | **9.9307** | **2.5339** | **12.4646** | | **4,003.0859** | **4,003.0859** | **1.2265** | | **4,028.8432** |

### 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 | 0.0644 | 0.0901 | 0.9496 | 2.3000e-003 | 0.2012 | 1.4400e-003 | 0.2026 | 0.0534 | 1.3300e-003 | 0.0547 | | 183.9357 | 183.9357 | 9.5700e-003 | | 184.1368 |
| **Total** | **0.0644** | **0.0901** | **0.9496** | **2.3000e-003** | **0.2012** | **1.4400e-003** | **0.2026** | **0.0534** | **1.3300e-003** | **0.0547** | | **183.9357** | **183.9357** | **9.5700e-003** | | **184.1368** |

## 3.2 Site Preparation 1 - 2017

### 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 | | | | | 7.0458 | 0.0000 | 7.0458 | 3.8730 | 0.0000 | 3.8730 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.8382 | 51.7535 | 39.3970 | 0.0391 | | 2.7542 | 2.7542 | | 2.5339 | 2.5339 | 0.0000 | 4,003.0859 | 4,003.0859 | 1.2265 | | 4,028.8432 |
| **Total** | **4.8382** | **51.7535** | **39.3970** | **0.0391** | **7.0458** | **2.7542** | **9.8001** | **3.8730** | **2.5339** | **6.4069** | **0.0000** | **4,003.0859** | **4,003.0859** | **1.2265** | | **4,028.8432** |

### 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 | 0.0644 | 0.0901 | 0.9496 | 2.3000e-003 | 0.2012 | 1.4400e-003 | 0.2026 | 0.0534 | 1.3300e-003 | 0.0547 | | 183.9357 | 183.9357 | 9.5700e-003 | | 184.1368 |
| **Total** | **0.0644** | **0.0901** | **0.9496** | **2.3000e-003** | **0.2012** | **1.4400e-003** | **0.2026** | **0.0534** | **1.3300e-003** | **0.0547** | | **183.9357** | **183.9357** | **9.5700e-003** | | **184.1368** |

## 3.3 Grading 1 - 2017

### 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 | | | | | 9.7338 | 0.0000 | 9.7338 | 3.7110 | 0.0000 | 3.7110 | | | 0.0000 | | | 0.0000 |
| Off-Road | 6.8168 | 81.6248 | 47.4972 | 0.0709 | | 3.5511 | 3.5511 | | 3.2670 | 3.2670 | | 7,249.3599 | 7,249.3599 | 2.2212 | | 7,296.0049 |
| **Total** | **6.8168** | **81.6248** | **47.4972** | **0.0709** | **9.7338** | **3.5511** | **13.2849** | **3.7110** | **3.2670** | **6.9780** | | **7,249.3599** | **7,249.3599** | **2.2212** | | **7,296.0049** |

### 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 | 0.0716 | 0.1001 | 1.0551 | 2.5600e-003 | 0.2236 | 1.6000e-003 | 0.2252 | 0.0593 | 1.4700e-003 | 0.0608 | | 204.3730 | 204.3730 | 0.0106 | | 204.5964 |
| **Total** | **0.0716** | **0.1001** | **1.0551** | **2.5600e-003** | **0.2236** | **1.6000e-003** | **0.2252** | **0.0593** | **1.4700e-003** | **0.0608** | | **204.3730** | **204.3730** | **0.0106** | | **204.5964** |

## 3.3 Grading 1 - 2017

### 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 | | | | | 3.7962 | 0.0000 | 3.7962 | 1.4473 | 0.0000 | 1.4473 | | | 0.0000 | | | 0.0000 |
| Off-Road | 6.8168 | 81.6248 | 47.4972 | 0.0709 | | 3.5511 | 3.5511 | | 3.2670 | 3.2670 | 0.0000 | 7,249.3599 | 7,249.3599 | 2.2212 | | 7,296.0049 |
| **Total** | **6.8168** | **81.6248** | **47.4972** | **0.0709** | **3.7962** | **3.5511** | **7.3473** | **1.4473** | **3.2670** | **4.7143** | **0.0000** | **7,249.3599** | **7,249.3599** | **2.2212** | | **7,296.0049** |

### 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 | 0.0716 | 0.1001 | 1.0551 | 2.5600e-003 | 0.2236 | 1.6000e-003 | 0.2252 | 0.0593 | 1.4700e-003 | 0.0608 | | 204.3730 | 204.3730 | 0.0106 | | 204.5964 |
| **Total** | **0.0716** | **0.1001** | **1.0551** | **2.5600e-003** | **0.2236** | **1.6000e-003** | **0.2252** | **0.0593** | **1.4700e-003** | **0.0608** | | **204.3730** | **204.3730** | **0.0106** | | **204.5964** |

## 3.4 Building Construction 1 - 2017

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.3022 | 28.5087 | 19.3714 | 0.0287 | | 1.9099 | 1.9099 | | 1.7914 | 1.7914 | | 2,831.3094 | 2,831.3094 | 0.7084 | | 2,846.1853 |
| **Total** | **3.3022** | **28.5087** | **19.3714** | **0.0287** | | **1.9099** | **1.9099** | | **1.7914** | **1.7914** | | **2,831.3094** | **2,831.3094** | **0.7084** | | **2,846.1853** |

### 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 | 0.5160 | 5.0533 | 6.7481 | 0.0134 | 0.3896 | 0.0807 | 0.4703 | 0.1112 | 0.0742 | 0.1855 | | 1,318.4319 | 1,318.4319 | 9.7000e-003 | | 1,318.6355 |
| Worker | 0.5689 | 0.7956 | 8.3883 | 0.0203 | 1.7772 | 0.0127 | 1.7900 | 0.4713 | 0.0117 | 0.4831 | | 1,624.7655 | 1,624.7655 | 0.0846 | | 1,626.5414 |
| **Total** | **1.0848** | **5.8489** | **15.1364** | **0.0337** | **2.1668** | **0.0934** | **2.2602** | **0.5826** | **0.0860** | **0.6685** | | **2,943.1973** | **2,943.1973** | **0.0943** | | **2,945.1769** |

## 3.4 Building Construction 1 - 2017

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.3022 | 28.5087 | 19.3714 | 0.0287 | | 1.9099 | 1.9099 | | 1.7914 | 1.7914 | 0.0000 | 2,831.3094 | 2,831.3094 | 0.7084 | | 2,846.1853 |
| **Total** | **3.3022** | **28.5087** | **19.3714** | **0.0287** | | **1.9099** | **1.9099** | | **1.7914** | **1.7914** | **0.0000** | **2,831.3094** | **2,831.3094** | **0.7084** | | **2,846.1853** |

### 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 | 0.5160 | 5.0533 | 6.7481 | 0.0134 | 0.3896 | 0.0807 | 0.4703 | 0.1112 | 0.0742 | 0.1855 | | 1,318.4319 | 1,318.4319 | 9.7000e-003 | | 1,318.6355 |
| Worker | 0.5689 | 0.7956 | 8.3883 | 0.0203 | 1.7772 | 0.0127 | 1.7900 | 0.4713 | 0.0117 | 0.4831 | | 1,624.7655 | 1,624.7655 | 0.0846 | | 1,626.5414 |
| **Total** | **1.0848** | **5.8489** | **15.1364** | **0.0337** | **2.1668** | **0.0934** | **2.2602** | **0.5826** | **0.0860** | **0.6685** | | **2,943.1973** | **2,943.1973** | **0.0943** | | **2,945.1769** |

## 3.4 Building Construction 1 - 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 | 2.8383 | 25.0811 | 18.7173 | 0.0287 | | 1.6002 | 1.6002 | | 1.5023 | 1.5023 | | 2,798.2338 | 2,798.2338 | 0.6973 | | 2,812.8775 |
| **Total** | **2.8383** | **25.0811** | **18.7173** | **0.0287** | | **1.6002** | **1.6002** | | **1.5023** | **1.5023** | | **2,798.2338** | **2,798.2338** | **0.6973** | | **2,812.8775** |

### 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 | 0.4769 | 4.6304 | 6.4273 | 0.0133 | 0.3895 | 0.0759 | 0.4654 | 0.1112 | 0.0698 | 0.1810 | | 1,295.8431 | 1,295.8431 | 9.6400e-003 | | 1,296.0456 |
| Worker | 0.5063 | 0.7175 | 7.5584 | 0.0203 | 1.7772 | 0.0124 | 1.7896 | 0.4713 | 0.0115 | 0.4828 | | 1,563.2096 | 1,563.2096 | 0.0781 | | 1,564.8496 |
| **Total** | **0.9832** | **5.3479** | **13.9857** | **0.0337** | **2.1667** | **0.0883** | **2.2550** | **0.5825** | **0.0813** | **0.6638** | | **2,859.0527** | **2,859.0527** | **0.0877** | | **2,860.8952** |

## 3.4 Building Construction 1 - 2018

### 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 | 2.8383 | 25.0811 | 18.7173 | 0.0287 | | 1.6002 | 1.6002 | | 1.5023 | 1.5023 | 0.0000 | 2,798.2338 | 2,798.2338 | 0.6973 | | 2,812.8775 |
| **Total** | **2.8383** | **25.0811** | **18.7173** | **0.0287** | | **1.6002** | **1.6002** | | **1.5023** | **1.5023** | **0.0000** | **2,798.2338** | **2,798.2338** | **0.6973** | | **2,812.8775** |

### 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 | 0.4769 | 4.6304 | 6.4273 | 0.0133 | 0.3895 | 0.0759 | 0.4654 | 0.1112 | 0.0698 | 0.1810 | | 1,295.8431 | 1,295.8431 | 9.6400e-003 | | 1,296.0456 |
| Worker | 0.5063 | 0.7175 | 7.5584 | 0.0203 | 1.7772 | 0.0124 | 1.7896 | 0.4713 | 0.0115 | 0.4828 | | 1,563.2096 | 1,563.2096 | 0.0781 | | 1,564.8496 |
| **Total** | **0.9832** | **5.3479** | **13.9857** | **0.0337** | **2.1667** | **0.0883** | **2.2550** | **0.5825** | **0.0813** | **0.6638** | | **2,859.0527** | **2,859.0527** | **0.0877** | | **2,860.8952** |

## 3.5 Architectural Coating 1 - 2017

### 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 | 32.3994 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4431 | 2.9134 | 2.4908 | 3.9600e-003 | | 0.2311 | 0.2311 | | 0.2311 | 0.2311 | | 375.2641 | 375.2641 | 0.0396 | | 376.0961 |
| **Total** | **32.8425** | **2.9134** | **2.4908** | **3.9600e-003** | | **0.2311** | **0.2311** | | **0.2311** | **0.2311** | | **375.2641** | **375.2641** | **0.0396** | | **376.0961** |

### 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 | 0.1145 | 0.1601 | 1.6882 | 4.0900e-003 | 0.3577 | 2.5600e-003 | 0.3602 | 0.0949 | 2.3600e-003 | 0.0972 | | 326.9968 | 326.9968 | 0.0170 | | 327.3542 |
| **Total** | **0.1145** | **0.1601** | **1.6882** | **4.0900e-003** | **0.3577** | **2.5600e-003** | **0.3602** | **0.0949** | **2.3600e-003** | **0.0972** | | **326.9968** | **326.9968** | **0.0170** | | **327.3542** |

## 3.5 Architectural Coating 1 - 2017

### 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 | 32.3994 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4431 | 2.9134 | 2.4908 | 3.9600e-003 | | 0.2311 | 0.2311 | | 0.2311 | 0.2311 | 0.0000 | 375.2641 | 375.2641 | 0.0396 | | 376.0961 |
| **Total** | **32.8425** | **2.9134** | **2.4908** | **3.9600e-003** | | **0.2311** | **0.2311** | | **0.2311** | **0.2311** | **0.0000** | **375.2641** | **375.2641** | **0.0396** | | **376.0961** |

### 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 | 0.1145 | 0.1601 | 1.6882 | 4.0900e-003 | 0.3577 | 2.5600e-003 | 0.3602 | 0.0949 | 2.3600e-003 | 0.0972 | | 326.9968 | 326.9968 | 0.0170 | | 327.3542 |
| **Total** | **0.1145** | **0.1601** | **1.6882** | **4.0900e-003** | **0.3577** | **2.5600e-003** | **0.3602** | **0.0949** | **2.3600e-003** | **0.0972** | | **326.9968** | **326.9968** | **0.0170** | | **327.3542** |

## 3.5 Architectural Coating 1 - 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 | | | | | |
| Archit. Coating | 32.3994 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3982 | 2.6743 | 2.4723 | 3.9600e-003 | | 0.2007 | 0.2007 | | 0.2007 | 0.2007 | | 375.2647 | 375.2647 | 0.0357 | | 376.0135 |
| **Total** | **32.7976** | **2.6743** | **2.4723** | **3.9600e-003** | | **0.2007** | **0.2007** | | **0.2007** | **0.2007** | | **375.2647** | **375.2647** | **0.0357** | | **376.0135** |

### 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 | 0.1019 | 0.1444 | 1.5212 | 4.0900e-003 | 0.3577 | 2.4900e-003 | 0.3602 | 0.0949 | 2.3100e-003 | 0.0972 | | 314.6082 | 314.6082 | 0.0157 | | 314.9383 |
| **Total** | **0.1019** | **0.1444** | **1.5212** | **4.0900e-003** | **0.3577** | **2.4900e-003** | **0.3602** | **0.0949** | **2.3100e-003** | **0.0972** | | **314.6082** | **314.6082** | **0.0157** | | **314.9383** |

## 3.5 Architectural Coating 1 - 2018

### 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 | 32.3994 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3982 | 2.6743 | 2.4723 | 3.9600e-003 | | 0.2007 | 0.2007 | | 0.2007 | 0.2007 | 0.0000 | 375.2647 | 375.2647 | 0.0357 | | 376.0135 |
| **Total** | **32.7976** | **2.6743** | **2.4723** | **3.9600e-003** | | **0.2007** | **0.2007** | | **0.2007** | **0.2007** | **0.0000** | **375.2647** | **375.2647** | **0.0357** | | **376.0135** |

### 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 | 0.1019 | 0.1444 | 1.5212 | 4.0900e-003 | 0.3577 | 2.4900e-003 | 0.3602 | 0.0949 | 2.3100e-003 | 0.0972 | | 314.6082 | 314.6082 | 0.0157 | | 314.9383 |
| **Total** | **0.1019** | **0.1444** | **1.5212** | **4.0900e-003** | **0.3577** | **2.4900e-003** | **0.3602** | **0.0949** | **2.3100e-003** | **0.0972** | | **314.6082** | **314.6082** | **0.0157** | | **314.9383** |

## 3.6 Paving 1 - 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 | 1.6114 | 17.1628 | 14.4944 | 0.0223 | | 0.9386 | 0.9386 | | 0.8635 | 0.8635 | | 2,245.2695 | 2,245.2695 | 0.6990 | | 2,259.9481 |
| Paving | 0.5895 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.2009** | **17.1628** | **14.4944** | **0.0223** | | **0.9386** | **0.9386** | | **0.8635** | **0.8635** | | **2,245.2695** | **2,245.2695** | **0.6990** | | **2,259.9481** |

### 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 | 0.0478 | 0.0677 | 0.7131 | 1.9200e-003 | 0.1677 | 1.1700e-003 | 0.1688 | 0.0445 | 1.0800e-003 | 0.0456 | | 147.4726 | 147.4726 | 7.3700e-003 | | 147.6273 |
| **Total** | **0.0478** | **0.0677** | **0.7131** | **1.9200e-003** | **0.1677** | **1.1700e-003** | **0.1688** | **0.0445** | **1.0800e-003** | **0.0456** | | **147.4726** | **147.4726** | **7.3700e-003** | | **147.6273** |

## 3.6 Paving 1 - 2018

### 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 | 1.6114 | 17.1628 | 14.4944 | 0.0223 | | 0.9386 | 0.9386 | | 0.8635 | 0.8635 | 0.0000 | 2,245.2695 | 2,245.2695 | 0.6990 | | 2,259.9481 |
| Paving | 0.5895 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.2009** | **17.1628** | **14.4944** | **0.0223** | | **0.9386** | **0.9386** | | **0.8635** | **0.8635** | **0.0000** | **2,245.2695** | **2,245.2695** | **0.6990** | | **2,259.9481** |

### 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 | 0.0478 | 0.0677 | 0.7131 | 1.9200e-003 | 0.1677 | 1.1700e-003 | 0.1688 | 0.0445 | 1.0800e-003 | 0.0456 | | 147.4726 | 147.4726 | 7.3700e-003 | | 147.6273 |
| **Total** | **0.0478** | **0.0677** | **0.7131** | **1.9200e-003** | **0.1677** | **1.1700e-003** | **0.1688** | **0.0445** | **1.0800e-003** | **0.0456** | | **147.4726** | **147.4726** | **7.3700e-003** | | **147.6273** |

## 3.7 Site Preparation 2 - 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 | 4.2921 | 45.6088 | 36.2346 | 0.0391 | | 2.3654 | 2.3654 | | 2.1762 | 2.1762 | | 3,939.7731 | 3,939.7731 | 1.2265 | | 3,965.5297 |
| **Total** | **4.2921** | **45.6088** | **36.2346** | **0.0391** | **18.0663** | **2.3654** | **20.4317** | **9.9307** | **2.1762** | **12.1069** | | **3,939.7731** | **3,939.7731** | **1.2265** | | **3,965.5297** |

### 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 | 0.0573 | 0.0812 | 0.8557 | 2.3000e-003 | 0.2012 | 1.4000e-003 | 0.2026 | 0.0534 | 1.3000e-003 | 0.0547 | | 176.9671 | 176.9671 | 8.8400e-003 | | 177.1528 |
| **Total** | **0.0573** | **0.0812** | **0.8557** | **2.3000e-003** | **0.2012** | **1.4000e-003** | **0.2026** | **0.0534** | **1.3000e-003** | **0.0547** | | **176.9671** | **176.9671** | **8.8400e-003** | | **177.1528** |

## 3.7 Site Preparation 2 - 2018

### 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 | | | | | 7.0458 | 0.0000 | 7.0458 | 3.8730 | 0.0000 | 3.8730 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.2921 | 45.6088 | 36.2346 | 0.0391 | | 2.3654 | 2.3654 | | 2.1762 | 2.1762 | 0.0000 | 3,939.7731 | 3,939.7731 | 1.2265 | | 3,965.5297 |
| **Total** | **4.2921** | **45.6088** | **36.2346** | **0.0391** | **7.0458** | **2.3654** | **9.4113** | **3.8730** | **2.1762** | **6.0491** | **0.0000** | **3,939.7731** | **3,939.7731** | **1.2265** | | **3,965.5297** |

### 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 | 0.0573 | 0.0812 | 0.8557 | 2.3000e-003 | 0.2012 | 1.4000e-003 | 0.2026 | 0.0534 | 1.3000e-003 | 0.0547 | | 176.9671 | 176.9671 | 8.8400e-003 | | 177.1528 |
| **Total** | **0.0573** | **0.0812** | **0.8557** | **2.3000e-003** | **0.2012** | **1.4000e-003** | **0.2026** | **0.0534** | **1.3000e-003** | **0.0547** | | **176.9671** | **176.9671** | **8.8400e-003** | | **177.1528** |

## 3.8 Grading 2 - 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 | | | | | 9.7338 | 0.0000 | 9.7338 | 3.7110 | 0.0000 | 3.7110 | | | 0.0000 | | | 0.0000 |
| Off-Road | 6.0104 | 70.9159 | 42.8356 | 0.0709 | | 3.0450 | 3.0450 | | 2.8014 | 2.8014 | | 7,133.8934 | 7,133.8934 | 2.2209 | | 7,180.5318 |
| **Total** | **6.0104** | **70.9159** | **42.8356** | **0.0709** | **9.7338** | **3.0450** | **12.7789** | **3.7110** | **2.8014** | **6.5124** | | **7,133.8934** | **7,133.8934** | **2.2209** | | **7,180.5318** |

### 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 | 0.0637 | 0.0903 | 0.9508 | 2.5600e-003 | 0.2236 | 1.5600e-003 | 0.2251 | 0.0593 | 1.4400e-003 | 0.0607 | | 196.6301 | 196.6301 | 9.8200e-003 | | 196.8364 |
| **Total** | **0.0637** | **0.0903** | **0.9508** | **2.5600e-003** | **0.2236** | **1.5600e-003** | **0.2251** | **0.0593** | **1.4400e-003** | **0.0607** | | **196.6301** | **196.6301** | **9.8200e-003** | | **196.8364** |

## 3.8 Grading 2 - 2018

### 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 | | | | | 3.7962 | 0.0000 | 3.7962 | 1.4473 | 0.0000 | 1.4473 | | | 0.0000 | | | 0.0000 |
| Off-Road | 6.0104 | 70.9159 | 42.8356 | 0.0709 | | 3.0450 | 3.0450 | | 2.8014 | 2.8014 | 0.0000 | 7,133.8934 | 7,133.8934 | 2.2209 | | 7,180.5318 |
| **Total** | **6.0104** | **70.9159** | **42.8356** | **0.0709** | **3.7962** | **3.0450** | **6.8412** | **1.4473** | **2.8014** | **4.2487** | **0.0000** | **7,133.8934** | **7,133.8934** | **2.2209** | | **7,180.5318** |

### 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 | 0.0637 | 0.0903 | 0.9508 | 2.5600e-003 | 0.2236 | 1.5600e-003 | 0.2251 | 0.0593 | 1.4400e-003 | 0.0607 | | 196.6301 | 196.6301 | 9.8200e-003 | | 196.8364 |
| **Total** | **0.0637** | **0.0903** | **0.9508** | **2.5600e-003** | **0.2236** | **1.5600e-003** | **0.2251** | **0.0593** | **1.4400e-003** | **0.0607** | | **196.6301** | **196.6301** | **9.8200e-003** | | **196.8364** |

## 3.9 Building Construction 2 - 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 | 2.8383 | 25.0811 | 18.7173 | 0.0287 | | 1.6002 | 1.6002 | | 1.5023 | 1.5023 | | 2,798.2338 | 2,798.2338 | 0.6973 | | 2,812.8775 |
| **Total** | **2.8383** | **25.0811** | **18.7173** | **0.0287** | | **1.6002** | **1.6002** | | **1.5023** | **1.5023** | | **2,798.2338** | **2,798.2338** | **0.6973** | | **2,812.8775** |

### 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 | 0.4769 | 4.6304 | 6.4273 | 0.0133 | 0.3895 | 0.0759 | 0.4654 | 0.1112 | 0.0698 | 0.1810 | | 1,295.8431 | 1,295.8431 | 9.6400e-003 | | 1,296.0456 |
| Worker | 0.5063 | 0.7175 | 7.5584 | 0.0203 | 1.7772 | 0.0124 | 1.7896 | 0.4713 | 0.0115 | 0.4828 | | 1,563.2096 | 1,563.2096 | 0.0781 | | 1,564.8496 |
| **Total** | **0.9832** | **5.3479** | **13.9857** | **0.0337** | **2.1667** | **0.0883** | **2.2550** | **0.5825** | **0.0813** | **0.6638** | | **2,859.0527** | **2,859.0527** | **0.0877** | | **2,860.8952** |

## 3.9 Building Construction 2 - 2018

### 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 | 2.8383 | 25.0811 | 18.7173 | 0.0287 | | 1.6002 | 1.6002 | | 1.5023 | 1.5023 | 0.0000 | 2,798.2338 | 2,798.2338 | 0.6973 | | 2,812.8775 |
| **Total** | **2.8383** | **25.0811** | **18.7173** | **0.0287** | | **1.6002** | **1.6002** | | **1.5023** | **1.5023** | **0.0000** | **2,798.2338** | **2,798.2338** | **0.6973** | | **2,812.8775** |

### 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 | 0.4769 | 4.6304 | 6.4273 | 0.0133 | 0.3895 | 0.0759 | 0.4654 | 0.1112 | 0.0698 | 0.1810 | | 1,295.8431 | 1,295.8431 | 9.6400e-003 | | 1,296.0456 |
| Worker | 0.5063 | 0.7175 | 7.5584 | 0.0203 | 1.7772 | 0.0124 | 1.7896 | 0.4713 | 0.0115 | 0.4828 | | 1,563.2096 | 1,563.2096 | 0.0781 | | 1,564.8496 |
| **Total** | **0.9832** | **5.3479** | **13.9857** | **0.0337** | **2.1667** | **0.0883** | **2.2550** | **0.5825** | **0.0813** | **0.6638** | | **2,859.0527** | **2,859.0527** | **0.0877** | | **2,860.8952** |

## 3.9 Building Construction 2 - 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 | 2.5006 | 22.5762 | 18.2643 | 0.0287 | | 1.3747 | 1.3747 | | 1.2908 | 1.2908 | | 2,765.9458 | 2,765.9458 | 0.6865 | | 2,780.3623 |
| **Total** | **2.5006** | **22.5762** | **18.2643** | **0.0287** | | **1.3747** | **1.3747** | | **1.2908** | **1.2908** | | **2,765.9458** | **2,765.9458** | **0.6865** | | **2,780.3623** |

### 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 | 0.4522 | 4.2495 | 6.2507 | 0.0132 | 0.3894 | 0.0728 | 0.4622 | 0.1112 | 0.0669 | 0.1781 | | 1,266.1238 | 1,266.1238 | 9.3300e-003 | | 1,266.3198 |
| Worker | 0.4604 | 0.6535 | 6.8441 | 0.0202 | 1.7772 | 0.0121 | 1.7894 | 0.4713 | 0.0112 | 0.4826 | | 1,497.4394 | 1,497.4394 | 0.0720 | | 1,498.9515 |
| **Total** | **0.9125** | **4.9029** | **13.0948** | **0.0335** | **2.1667** | **0.0849** | **2.2516** | **0.5825** | **0.0782** | **0.6607** | | **2,763.5632** | **2,763.5632** | **0.0813** | | **2,765.2713** |

## 3.9 Building Construction 2 - 2019

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.5006 | 22.5762 | 18.2643 | 0.0287 | | 1.3747 | 1.3747 | | 1.2908 | 1.2908 | 0.0000 | 2,765.9458 | 2,765.9458 | 0.6865 | | 2,780.3623 |
| **Total** | **2.5006** | **22.5762** | **18.2643** | **0.0287** | | **1.3747** | **1.3747** | | **1.2908** | **1.2908** | **0.0000** | **2,765.9458** | **2,765.9458** | **0.6865** | | **2,780.3623** |

### 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 | 0.4522 | 4.2495 | 6.2507 | 0.0132 | 0.3894 | 0.0728 | 0.4622 | 0.1112 | 0.0669 | 0.1781 | | 1,266.1238 | 1,266.1238 | 9.3300e-003 | | 1,266.3198 |
| Worker | 0.4604 | 0.6535 | 6.8441 | 0.0202 | 1.7772 | 0.0121 | 1.7894 | 0.4713 | 0.0112 | 0.4826 | | 1,497.4394 | 1,497.4394 | 0.0720 | | 1,498.9515 |
| **Total** | **0.9125** | **4.9029** | **13.0948** | **0.0335** | **2.1667** | **0.0849** | **2.2516** | **0.5825** | **0.0782** | **0.6607** | | **2,763.5632** | **2,763.5632** | **0.0813** | | **2,765.2713** |

## 3.10 Architectural Coating 2 - 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 | 64.7989 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3553 | 2.4472 | 2.4551 | 3.9600e-003 | | 0.1717 | 0.1717 | | 0.1717 | 0.1717 | | 375.2641 | 375.2641 | 0.0317 | | 375.9297 |
| **Total** | **65.1541** | **2.4472** | **2.4551** | **3.9600e-003** | | **0.1717** | **0.1717** | | **0.1717** | **0.1717** | | **375.2641** | **375.2641** | **0.0317** | | **375.9297** |

### 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 | 0.0927 | 0.1315 | 1.3774 | 4.0700e-003 | 0.3577 | 2.4400e-003 | 0.3601 | 0.0949 | 2.2600e-003 | 0.0971 | | 301.3715 | 301.3715 | 0.0145 | | 301.6758 |
| **Total** | **0.0927** | **0.1315** | **1.3774** | **4.0700e-003** | **0.3577** | **2.4400e-003** | **0.3601** | **0.0949** | **2.2600e-003** | **0.0971** | | **301.3715** | **301.3715** | **0.0145** | | **301.6758** |

## 3.10 Architectural Coating 2 - 2019

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 64.7989 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3553 | 2.4472 | 2.4551 | 3.9600e-003 | | 0.1717 | 0.1717 | | 0.1717 | 0.1717 | 0.0000 | 375.2641 | 375.2641 | 0.0317 | | 375.9297 |
| **Total** | **65.1541** | **2.4472** | **2.4551** | **3.9600e-003** | | **0.1717** | **0.1717** | | **0.1717** | **0.1717** | **0.0000** | **375.2641** | **375.2641** | **0.0317** | | **375.9297** |

### 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 | 0.0927 | 0.1315 | 1.3774 | 4.0700e-003 | 0.3577 | 2.4400e-003 | 0.3601 | 0.0949 | 2.2600e-003 | 0.0971 | | 301.3715 | 301.3715 | 0.0145 | | 301.6758 |
| **Total** | **0.0927** | **0.1315** | **1.3774** | **4.0700e-003** | **0.3577** | **2.4400e-003** | **0.3601** | **0.0949** | **2.2600e-003** | **0.0971** | | **301.3715** | **301.3715** | **0.0145** | | **301.6758** |

## 3.11 Paving 2 - 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 | 1.4259 | 14.9353 | 14.3652 | 0.0223 | | 0.8094 | 0.8094 | | 0.7447 | 0.7447 | | 2,208.9731 | 2,208.9731 | 0.6989 | | 2,223.6499 |
| Paving | 1.1790 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.6049** | **14.9353** | **14.3652** | **0.0223** | | **0.8094** | **0.8094** | | **0.7447** | **0.7447** | | **2,208.9731** | **2,208.9731** | **0.6989** | | **2,223.6499** |

### 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 | 0.0434 | 0.0617 | 0.6457 | 1.9100e-003 | 0.1677 | 1.1400e-003 | 0.1688 | 0.0445 | 1.0600e-003 | 0.0455 | | 141.2679 | 141.2679 | 6.7900e-003 | | 141.4105 |
| **Total** | **0.0434** | **0.0617** | **0.6457** | **1.9100e-003** | **0.1677** | **1.1400e-003** | **0.1688** | **0.0445** | **1.0600e-003** | **0.0455** | | **141.2679** | **141.2679** | **6.7900e-003** | | **141.4105** |

### 3.11 Paving 2 - 2019

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4259 | 14.9353 | 14.3652 | 0.0223 | | 0.8094 | 0.8094 | | 0.7447 | 0.7447 | 0.0000 | 2,208.9731 | 2,208.9731 | 0.6989 | | 2,223.6499 |
| Paving | 1.1790 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.6049** | **14.9353** | **14.3652** | **0.0223** | | **0.8094** | **0.8094** | | **0.7447** | **0.7447** | **0.0000** | **2,208.9731** | **2,208.9731** | **0.6989** | | **2,223.6499** |

**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 | 0.0434 | 0.0617 | 0.6457 | 1.9100e-003 | 0.1677 | 1.1400e-003 | 0.1688 | 0.0445 | 1.0600e-003 | 0.0455 | | 141.2679 | 141.2679 | 6.7900e-003 | | 141.4105 |
| **Total** | **0.0434** | **0.0617** | **0.6457** | **1.9100e-003** | **0.1677** | **1.1400e-003** | **0.1688** | **0.0445** | **1.0600e-003** | **0.0455** | | **141.2679** | **141.2679** | **6.7900e-003** | | **141.4105** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

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

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Regional Shopping Center | 0.00 | 0.00 | 0.00 | | |
| Single Family Housing | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Regional Shopping Center | 16.60 | 8.40 | 6.90 | 16.30 | 64.70 | 19.00 | 54 | 35 | 11 |
| Single Family Housing | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

## 5.0 Energy Detail

### 4.4 Fleet Mix

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

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

## 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 | | | | | |
| Regional Shopping Center | 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 |
| Single Family Housing | 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 |
| 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** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### Mitigated

| | 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 | | | | | |
| Single Family Housing | 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 |
| 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 |
| Regional Shopping Center | 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** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 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 | 0.3110 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | 0.0000 | 17.9572 | 17.9572 | 0.0179 | 0.0000 | 18.3321 |
| Unmitigated | 0.3110 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | 0.0000 | 17.9572 | 17.9572 | 0.0179 | 0.0000 | 18.3321 |

## 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 | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.1000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.3104 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | | 17.9572 | 17.9572 | 0.0179 | | 18.3321 |
| **Total** | **0.3110** | **0.1158** | **10.0108** | **5.3000e-004** | | **0.0547** | **0.0547** | | **0.0547** | **0.0547** | **0.0000** | **17.9572** | **17.9572** | **0.0179** | **0.0000** | **18.3321** |

### 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 | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.1000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.3104 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | | 17.9572 | 17.9572 | 0.0179 | | 18.3321 |
| **Total** | **0.3110** | **0.1158** | **10.0108** | **5.3000e-004** | | **0.0547** | **0.0547** | | **0.0547** | **0.0547** | **0.0000** | **17.9572** | **17.9572** | **0.0179** | **0.0000** | **18.3321** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Vegetation

# Rancho Palma (Phase 1)

**San Bernardino-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Single Family Housing | 120.00 | Dwelling Unit | 28.40 | 313,200.00 | 343 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 32 |
| **Climate Zone** | 10 | | | **Operational Year** | 2018 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 497.64 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics - CPUC GHG Calculator version 3c, worksheet tab "CO2 Allocations," cells AH/AQ 35-44.

Land Use - Total lot acreage: 28.40; Average home size is 2,610 SF based on 50% maximum lot coverage

Construction Phase - Operation run only

Off-road Equipment - Operation run only

Vehicle Trips - Trip rate based on ITE Trip Generation Handbook, 9th Edition

Woodstoves - Gas stoves only

Energy Use - Title-24 Electricity Energy Intensity and Title-24 Natural Gas Energy Intensity were adjusted by 36.4% and 6.5% respectively, to reflect 2013 Title 24 requirements. Source: Impact Analysis California's 2013 Building Energy Efficiency Standards (CEC 2013)

Mobile Land Use Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 30.00 | 1.00 |
| tblEnergyUse | T24E | 980.99 | 623.91 |
| tblEnergyUse | T24NG | 27,816.78 | 26,008.69 |
| tblFireplaces | NumberGas | 102.00 | 120.00 |
| tblFireplaces | NumberNoFireplace | 12.00 | 0.00 |
| tblFireplaces | NumberWood | 6.00 | 0.00 |
| tblLandUse | LandUseSquareFeet | 216,000.00 | 313,200.00 |
| tblLandUse | LotAcreage | 38.96 | 28.40 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 630.89 | 497.64 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2018 |
| tblVehicleTrips | ST_TR | 10.08 | 9.91 |
| tblVehicleTrips | SU_TR | 8.77 | 8.62 |
| tblVehicleTrips | WD_TR | 9.57 | 9.52 |
| tblWoodstoves | NumberCatalytic | 6.00 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 6.00 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2016 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | 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 | | | | | |
| 2016 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

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

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 7.4128 | 0.1157 | 9.9829 | 5.2000e-004 | | 0.2154 | 0.2154 | | 0.2137 | 0.2137 | 0.0000 | 2,559.0028 | 2,559.0028 | 0.0664 | 0.0466 | 2,574.8389 |
| Energy | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| Mobile | 4.2190 | 13.2207 | 50.3136 | 0.1322 | 8.6205 | 0.1917 | 8.8122 | 2.3024 | 0.1766 | 2.4789 | | 10,928.8194 | 10,928.8194 | 0.3719 | | 10,936.6289 |
| **Total** | **11.7451** | **14.3047** | **60.7085** | **0.1389** | **8.6205** | **0.4853** | **9.1058** | **2.3024** | **0.4685** | **2.7709** | **0.0000** | **14,723.9413** | **14,723.9413** | **0.4619** | **0.0693** | **14,755.1097** |

### 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 | 7.4128 | 0.1157 | 9.9829 | 5.2000e-004 | | 0.2154 | 0.2154 | | 0.2137 | 0.2137 | 0.0000 | 2,559.0028 | 2,559.0028 | 0.0664 | 0.0466 | 2,574.8389 |
| Energy | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| Mobile | 4.2085 | 13.1373 | 50.0255 | 0.1312 | 8.5570 | 0.1903 | 8.7474 | 2.2854 | 0.1753 | 2.4607 | | 10,850.3681 | 10,850.3681 | 0.3694 | | 10,858.1249 |
| **Total** | **11.7346** | **14.2213** | **60.4204** | **0.1379** | **8.5570** | **0.4840** | **9.0410** | **2.2854** | **0.4673** | **2.7527** | **0.0000** | **14,645.4900** | **14,645.4900** | **0.4594** | **0.0693** | **14,676.6058** |

| | ROG | NOx | 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 | 0.09 | 0.58 | 0.47 | 0.68 | 0.74 | 0.28 | 0.71 | 0.74 | 0.26 | 0.66 | 0.00 | 0.53 | 0.53 | 0.54 | 0.00 | 0.53 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2016 | 1/1/2016 | 5 | 1 | |

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

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

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 0 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 0 | 8.00 | 162 | 0.38 |
| Demolition | Rubber Tired Dozers | 0 | 8.00 | 255 | 0.40 |

### Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 0 | 0.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2016

### Unmitigated Construction On-Site

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

### 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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | | **0.0000** |

### 3.2 Demolition - 2016

**Mitigated Construction On-Site**

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

**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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | | **0.0000** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Increase Diversity

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive 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 | 4.2085 | 13.1373 | 50.0255 | 0.1312 | 8.5570 | 0.1903 | 8.7474 | 2.2854 | 0.1753 | 2.4607 | | 10,850.3681 | 10,850.3681 | 0.3694 | | 10,858.1249 |
| Unmitigated | 4.2190 | 13.2207 | 50.3136 | 0.1322 | 8.6205 | 0.1917 | 8.8122 | 2.3024 | 0.1766 | 2.4789 | | 10,928.8194 | 10,928.8194 | 0.3719 | | 10,936.6289 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Single Family Housing | 1,142.40 | 1,189.20 | 1034.40 | 3,873,879 | 3,845,353 |
| Total | 1,142.40 | 1,189.20 | 1,034.40 | 3,873,879 | 3,845,353 |

## 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 |
| Single Family Housing | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.470490 | 0.065594 | 0.173154 | 0.156076 | 0.056237 | 0.009050 | 0.016623 | 0.041711 | 0.001119 | 0.001337 | 0.004965 | 0.000700 | 0.002944 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| NaturalGas Unmitigated | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |

### 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 | | | | | |
| Single Family Housing | 10507 | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| **Total** | | **0.1133** | **0.9683** | **0.4120** | **6.1800e-003** | | **0.0783** | **0.0783** | | **0.0783** | **0.0783** | | **1,236.1191** | **1,236.1191** | **0.0237** | **0.0227** | **1,243.6419** |

### 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 | | | | | |
| Single Family Housing | 10.507 | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| **Total** | | **0.1133** | **0.9683** | **0.4120** | **6.1800e-003** | | **0.0783** | **0.0783** | | **0.0783** | **0.0783** | | **1,236.1191** | **1,236.1191** | **0.0237** | **0.0227** | **1,243.6419** |

## 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 | 7.4128 | 0.1157 | 9.9829 | 5.2000e-004 | | 0.2154 | 0.2154 | | 0.2137 | 0.2137 | 0.0000 | 2,559.0028 | 2,559.0028 | 0.0664 | 0.0466 | 2,574.8389 |
| Unmitigated | 7.4128 | 0.1157 | 9.9829 | 5.2000e-004 | | 0.2154 | 0.2154 | | 0.2137 | 0.2137 | 0.0000 | 2,559.0028 | 2,559.0028 | 0.0664 | 0.0466 | 2,574.8389 |

## 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 | | | | | |
| Consumer Products | 6.2014 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.2329 | 1.0000e-005 | 0.0127 | 0.0000 | | 0.1609 | 0.1609 | | 0.1593 | 0.1593 | 0.0000 | 2,541.1765 | 2,541.1765 | 0.0487 | 0.0466 | 2,556.6417 |
| Landscaping | 0.3073 | 0.1157 | 9.9702 | 5.2000e-004 | | 0.0544 | 0.0544 | | 0.0544 | 0.0544 | | 17.8263 | 17.8263 | 0.0177 | | 18.1973 |
| Architectural Coating | 0.6712 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **7.4128** | **0.1157** | **9.9829** | **5.2000e-004** | | **0.2154** | **0.2154** | | **0.2137** | **0.2137** | **0.0000** | **2,559.0028** | **2,559.0028** | **0.0664** | **0.0466** | **2,574.8389** |

### 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 | | | | | |
| Consumer Products | 6.2014 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.2329 | 1.0000e-005 | 0.0127 | 0.0000 | | 0.1609 | 0.1609 | | 0.1593 | 0.1593 | 0.0000 | 2,541.1765 | 2,541.1765 | 0.0487 | 0.0466 | 2,556.6417 |
| Landscaping | 0.3073 | 0.1157 | 9.9702 | 5.2000e-004 | | 0.0544 | 0.0544 | | 0.0544 | 0.0544 | | 17.8263 | 17.8263 | 0.0177 | | 18.1973 |
| Architectural Coating | 0.6712 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **7.4128** | **0.1157** | **9.9829** | **5.2000e-004** | | **0.2154** | **0.2154** | | **0.2137** | **0.2137** | **0.0000** | **2,559.0028** | **2,559.0028** | **0.0664** | **0.0466** | **2,574.8389** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Vegetation

# Rancho Palma (Phase 1)

**San Bernardino-South Coast County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Single Family Housing | 120.00 | Dwelling Unit | 28.40 | 313,200.00 | 343 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 32 |
| **Climate Zone** | 10 | | | **Operational Year** | 2018 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 497.64 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics - CPUC GHG Calculator version 3c, worksheet tab "CO2 Allocations," cells AH/AQ 35-44.

Land Use - Total lot acreage: 28.40; Average home size is 2,610 SF based on 50% maximum lot coverage

Construction Phase - Operation run only

Off-road Equipment - Operation run only

Vehicle Trips - Trip rate based on ITE Trip Generation Handbook, 9th Edition

Woodstoves - Gas stoves only

Energy Use - Title-24 Electricity Energy Intensity and Title-24 Natural Gas Energy Intensity were adjusted by 36.4% and 6.5% respectively, to reflect 2013 Title 24 requirements. Source: Impact Analysis California's 2013 Building Energy Efficiency Standards (CEC 2013)

Mobile Land Use Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 30.00 | 1.00 |
| tblEnergyUse | T24E | 980.99 | 623.91 |
| tblEnergyUse | T24NG | 27,816.78 | 26,008.69 |
| tblFireplaces | NumberGas | 102.00 | 120.00 |
| tblFireplaces | NumberNoFireplace | 12.00 | 0.00 |
| tblFireplaces | NumberWood | 6.00 | 0.00 |
| tblLandUse | LandUseSquareFeet | 216,000.00 | 313,200.00 |
| tblLandUse | LotAcreage | 38.96 | 28.40 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 630.89 | 497.64 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2018 |
| tblVehicleTrips | ST_TR | 10.08 | 9.91 |
| tblVehicleTrips | SU_TR | 8.77 | 8.62 |
| tblVehicleTrips | WD_TR | 9.57 | 9.52 |
| tblWoodstoves | NumberCatalytic | 6.00 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 6.00 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2016 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | 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 | | | | | |
| 2016 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

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

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 7.4128 | 0.1157 | 9.9829 | 5.2000e-004 | | 0.2154 | 0.2154 | | 0.2137 | 0.2137 | 0.0000 | 2,559.0028 | 2,559.0028 | 0.0664 | 0.0466 | 2,574.8389 |
| Energy | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| Mobile | 4.0740 | 13.8052 | 46.7191 | 0.1231 | 8.6205 | 0.1924 | 8.8129 | 2.3024 | 0.1772 | 2.4796 | | 10,224.0323 | 10,224.0323 | 0.3723 | | 10,231.8506 |
| **Total** | **11.6001** | **14.8892** | **57.1140** | **0.1298** | **8.6205** | **0.4861** | **9.1066** | **2.3024** | **0.4692** | **2.7715** | **0.0000** | **14,019.1542** | **14,019.1542** | **0.4624** | **0.0693** | **14,050.3315** |

### 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 | 7.4128 | 0.1157 | 9.9829 | 5.2000e-004 | | 0.2154 | 0.2154 | | 0.2137 | 0.2137 | 0.0000 | 2,559.0028 | 2,559.0028 | 0.0664 | 0.0466 | 2,574.8389 |
| Energy | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| Mobile | 4.0641 | 13.7175 | 46.4772 | 0.1222 | 8.5570 | 0.1911 | 8.7481 | 2.2854 | 0.1760 | 2.4614 | | 10,150.6787 | 10,150.6787 | 0.3698 | | 10,158.4444 |
| **Total** | **11.5902** | **14.8015** | **56.8721** | **0.1289** | **8.5570** | **0.4847** | **9.0417** | **2.2854** | **0.4679** | **2.7533** | **0.0000** | **13,945.8006** | **13,945.8006** | **0.4599** | **0.0693** | **13,976.9253** |

| | ROG | NOx | 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 | 0.09 | 0.59 | 0.42 | 0.69 | 0.74 | 0.28 | 0.71 | 0.74 | 0.26 | 0.66 | 0.00 | 0.52 | 0.52 | 0.54 | 0.00 | 0.52 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2016 | 1/1/2016 | 5 | 1 | |

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

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

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 0 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 0 | 8.00 | 162 | 0.38 |
| Demolition | Rubber Tired Dozers | 0 | 8.00 | 255 | 0.40 |

### Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 0 | 0.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2016

### Unmitigated Construction On-Site

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

### 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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | | **0.0000** |

### 3.2 Demolition - 2016

**Mitigated Construction On-Site**

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

**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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | | **0.0000** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Increase Diversity

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive 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 | 4.0641 | 13.7175 | 46.4772 | 0.1222 | 8.5570 | 0.1911 | 8.7481 | 2.2854 | 0.1760 | 2.4614 | | 10,150.6787 | 10,150.6787 | 0.3698 | | 10,158.4444 |
| Unmitigated | 4.0740 | 13.8052 | 46.7191 | 0.1231 | 8.6205 | 0.1924 | 8.8129 | 2.3024 | 0.1772 | 2.4796 | | 10,224.0323 | 10,224.0323 | 0.3723 | | 10,231.8506 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Single Family Housing | 1,142.40 | 1,189.20 | 1034.40 | 3,873,879 | 3,845,353 |
| Total | 1,142.40 | 1,189.20 | 1,034.40 | 3,873,879 | 3,845,353 |

## 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 |
| Single Family Housing | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.470490 | 0.065594 | 0.173154 | 0.156076 | 0.056237 | 0.009050 | 0.016623 | 0.041711 | 0.001119 | 0.001337 | 0.004965 | 0.000700 | 0.002944 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| NaturalGas Unmitigated | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |

### 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 | | | | | |
| Single Family Housing | 10507 | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| **Total** | | **0.1133** | **0.9683** | **0.4120** | **6.1800e-003** | | **0.0783** | **0.0783** | | **0.0783** | **0.0783** | | **1,236.1191** | **1,236.1191** | **0.0237** | **0.0227** | **1,243.6419** |

### 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 | | | | | |
| Single Family Housing | 10.507 | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| **Total** | | **0.1133** | **0.9683** | **0.4120** | **6.1800e-003** | | **0.0783** | **0.0783** | | **0.0783** | **0.0783** | | **1,236.1191** | **1,236.1191** | **0.0237** | **0.0227** | **1,243.6419** |

## 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 | 7.4128 | 0.1157 | 9.9829 | 5.2000e-004 | | 0.2154 | 0.2154 | | 0.2137 | 0.2137 | 0.0000 | 2,559.0028 | 2,559.0028 | 0.0664 | 0.0466 | 2,574.8389 |
| Unmitigated | 7.4128 | 0.1157 | 9.9829 | 5.2000e-004 | | 0.2154 | 0.2154 | | 0.2137 | 0.2137 | 0.0000 | 2,559.0028 | 2,559.0028 | 0.0664 | 0.0466 | 2,574.8389 |

## 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 | 0.6712 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.2014 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.2329 | 1.0000e-005 | 0.0127 | 0.0000 | | 0.1609 | 0.1609 | | 0.1593 | 0.1593 | 0.0000 | 2,541.1765 | 2,541.1765 | 0.0487 | 0.0466 | 2,556.6417 |
| Landscaping | 0.3073 | 0.1157 | 9.9702 | 5.2000e-004 | | 0.0544 | 0.0544 | | 0.0544 | 0.0544 | | 17.8263 | 17.8263 | 0.0177 | | 18.1973 |
| **Total** | **7.4128** | **0.1157** | **9.9829** | **5.2000e-004** | | **0.2154** | **0.2154** | | **0.2137** | **0.2137** | **0.0000** | **2,559.0028** | **2,559.0028** | **0.0664** | **0.0466** | **2,574.8389** |

### 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 | | | | | |
| Consumer Products | 6.2014 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.2329 | 1.0000e-005 | 0.0127 | 0.0000 | | 0.1609 | 0.1609 | | 0.1593 | 0.1593 | 0.0000 | 2,541.1765 | 2,541.1765 | 0.0487 | 0.0466 | 2,556.6417 |
| Landscaping | 0.3073 | 0.1157 | 9.9702 | 5.2000e-004 | | 0.0544 | 0.0544 | | 0.0544 | 0.0544 | | 17.8263 | 17.8263 | 0.0177 | | 18.1973 |
| Architectural Coating | 0.6712 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **7.4128** | **0.1157** | **9.9829** | **5.2000e-004** | | **0.2154** | **0.2154** | | **0.2137** | **0.2137** | **0.0000** | **2,559.0028** | **2,559.0028** | **0.0664** | **0.0466** | **2,574.8389** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Vegetation

# Rancho Palma (Phase 2)

**San Bernardino-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 500.00 | Space | 4.50 | 200,000.00 | 0 |
| Single Family Housing | 120.00 | Dwelling Unit | 28.40 | 313,200.00 | 343 |
| Regional Shopping Center | 98.00 | 1000sqft | 4.70 | 98,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 32 |
| **Climate Zone** | 10 | | | **Operational Year** | 2019 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 479.9 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics - CPUC GHG Calculator version 3c, worksheet tab "CO2 Allocations," cells AH/AQ 35-44.

Land Use - Total Lot Acreage: 37.6; Average home size is 2,610 SF based on 50% maximum coverage

Construction Phase - Operation run only

Off-road Equipment - Operation run only

Vehicle Trips - Trip Rate based on Traffic Study; Weekend Trip Rates based on ITE Trip Generation Handbook, 9th Edition. Credit for Internal Capture and Pass-By Trips have been taken.

Woodstoves - Gas Stoves Only

Energy Use - Title-24 Energy Intensity for Electricity & Natural Gas were adjusted by 21.8% & 16.8% respectively, for Non-Residential, and by 36.4% & 6.5%, respectively, for Residential. Impact Analysis California's 2013 Building Energy Efficiency Standards (CEC).

Mobile Land Use Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 50.00 | 1.00 |
| tblEnergyUse | T24E | 5.60 | 4.38 |
| tblEnergyUse | T24E | 980.99 | 623.91 |
| tblEnergyUse | T24NG | 2.02 | 1.68 |
| tblEnergyUse | T24NG | 27,816.78 | 26,008.69 |
| tblFireplaces | NumberGas | 102.00 | 120.00 |
| tblFireplaces | NumberNoFireplace | 12.00 | 0.00 |
| tblFireplaces | NumberWood | 6.00 | 0.00 |
| tblLandUse | LandUseSquareFeet | 216,000.00 | 313,200.00 |
| tblLandUse | LotAcreage | 38.96 | 28.40 |
| tblLandUse | LotAcreage | 2.25 | 4.70 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 630.89 | 479.9 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2019 |
| tblVehicleTrips | DV_TP | 35.00 | 0.00 |
| tblVehicleTrips | PB_TP | 11.00 | 34.00 |
| tblVehicleTrips | PR_TP | 54.00 | 66.00 |
| tblVehicleTrips | ST_TR | 49.97 | 46.20 |
| tblVehicleTrips | ST_TR | 10.08 | 5.53 |
| tblVehicleTrips | SU_TR | 25.24 | 23.34 |
| tblVehicleTrips | SU_TR | 8.77 | 4.81 |
| tblVehicleTrips | WD_TR | 42.94 | 63.23 |
| tblVehicleTrips | WD_TR | 9.57 | 5.31 |
| tblWoodstoves | NumberCatalytic | 6.00 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 6.00 | 0.00 |

# 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2016 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | 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 | | | | | |
| 2016 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

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

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 13.9766 | 0.1158 | 10.0235 | 5.3000e-004 | | 0.2157 | 0.2157 | | 0.2140 | 0.2140 | 0.0000 | 2,559.1336 | 2,559.1336 | 0.0666 | 0.0466 | 2,574.9737 |
| Energy | 0.1190 | 1.0204 | 0.4558 | 6.4900e-003 | | 0.0823 | 0.0823 | | 0.0823 | 0.0823 | | 1,298.6622 | 1,298.6622 | 0.0249 | 0.0238 | 1,306.5657 |
| Mobile | 20.4968 | 52.7586 | 206.6879 | 0.5371 | 34.8211 | 0.7785 | 35.5996 | 9.2998 | 0.7175 | 10.0173 | | 43,087.1111 | 43,087.1111 | 1.4373 | | 43,117.2936 |
| **Total** | **34.5924** | **53.8948** | **217.1672** | **0.5441** | **34.8211** | **1.0764** | **35.8975** | **9.2998** | **1.0138** | **10.3136** | **0.0000** | **46,944.9070** | **46,944.9070** | **1.5287** | **0.0704** | **46,998.8330** |

### 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 | 13.9766 | 0.1158 | 10.0235 | 5.3000e-004 | | 0.2157 | 0.2157 | | 0.2140 | 0.2140 | 0.0000 | 2,559.1336 | 2,559.1336 | 0.0666 | 0.0466 | 2,574.9737 |
| Energy | 0.1190 | 1.0204 | 0.4558 | 6.4900e-003 | | 0.0823 | 0.0823 | | 0.0823 | 0.0823 | | 1,298.6622 | 1,298.6622 | 0.0249 | 0.0238 | 1,306.5657 |
| Mobile | 19.4398 | 44.2550 | 177.5198 | 0.4330 | 27.8220 | 0.6333 | 28.4554 | 7.4305 | 0.5838 | 8.0143 | | 34,737.1447 | 34,737.1447 | 1.1815 | | 34,761.9552 |
| **Total** | **33.5355** | **45.3913** | **187.9992** | **0.4401** | **27.8220** | **0.9313** | **28.7533** | **7.4305** | **0.8800** | **8.3105** | **0.0000** | **38,594.9406** | **38,594.9406** | **1.2729** | **0.0704** | **38,643.4946** |

| | ROG | NOx | 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 | 3.06 | 15.78 | 13.43 | 19.13 | 20.10 | 13.49 | 19.90 | 20.10 | 13.19 | 19.42 | 0.00 | 17.79 | 17.79 | 16.73 | 0.00 | 17.78 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2016 | 1/1/2016 | 5 | 1 | |

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

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

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 0 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 0 | 8.00 | 162 | 0.38 |
| Demolition | Rubber Tired Dozers | 0 | 8.00 | 255 | 0.40 |

### Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 0 | 0.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2016

### Unmitigated Construction On-Site

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

### 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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | | **0.0000** |

### 3.2 Demolition - 2016

**Mitigated Construction On-Site**

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

**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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | | **0.0000** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive 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 | 19.4398 | 44.2550 | 177.5198 | 0.4330 | 27.8220 | 0.6333 | 28.4554 | 7.4305 | 0.5838 | 8.0143 | | 34,737.1447 | 34,737.1447 | 1.1815 | | 34,761.9552 |
| Unmitigated | 20.4968 | 52.7586 | 206.6879 | 0.5371 | 34.8211 | 0.7785 | 35.5996 | 9.2998 | 0.7175 | 10.0173 | | 43,087.1111 | 43,087.1111 | 1.4373 | | 43,117.2936 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Regional Shopping Center | 6,196.54 | 4,527.60 | 2287.32 | 12,327,577 | 9,849,740 |
| Single Family Housing | 637.20 | 663.60 | 577.20 | 2,161,007 | 1,726,646 |
| Total | 6,833.74 | 5,191.20 | 2,864.52 | 14,488,584 | 11,576,385 |

### 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 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Regional Shopping Center | 16.60 | 8.40 | 6.90 | 16.30 | 64.70 | 19.00 | 66 | 0 | 34 |
| Single Family Housing | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.469745 | 0.065359 | 0.173284 | 0.156374 | 0.056542 | 0.009056 | 0.016508 | 0.042061 | 0.001112 | 0.001336 | 0.004986 | 0.000686 | 0.002952 |

## 5.0 Energy Detail

### 4.4 Fleet Mix

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1190 | 1.0204 | 0.4558 | 6.4900e-003 | | 0.0823 | 0.0823 | | 0.0823 | 0.0823 | | 1,298.6622 | 1,298.6622 | 0.0249 | 0.0238 | 1,306.5657 |
| NaturalGas Unmitigated | 0.1190 | 1.0204 | 0.4558 | 6.4900e-003 | | 0.0823 | 0.0823 | | 0.0823 | 0.0823 | | 1,298.6622 | 1,298.6622 | 0.0249 | 0.0238 | 1,306.5657 |

## 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 | | | | | |
| Single Family Housing | 10507 | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| 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 |
| Regional Shopping Center | 531.616 | 5.7300e-003 | 0.0521 | 0.0438 | 3.1000e-004 | | 3.9600e-003 | 3.9600e-003 | | 3.9600e-003 | 3.9600e-003 | | 62.5431 | 62.5431 | 1.2000e-003 | 1.1500e-003 | 62.9237 |
| **Total** | | **0.1190** | **1.0204** | **0.4558** | **6.4900e-003** | | **0.0823** | **0.0823** | | **0.0823** | **0.0823** | | **1,298.6622** | **1,298.6622** | **0.0249** | **0.0238** | **1,306.5657** |

### 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 | | | | | |
| Single Family Housing | 10.507 | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| 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 |
| Regional Shopping Center | 0.531616 | 5.7300e-003 | 0.0521 | 0.0438 | 3.1000e-004 | | 3.9600e-003 | 3.9600e-003 | | 3.9600e-003 | 3.9600e-003 | | 62.5431 | 62.5431 | 1.2000e-003 | 1.1500e-003 | 62.9237 |
| **Total** | | **0.1190** | **1.0204** | **0.4558** | **6.4900e-003** | | **0.0823** | **0.0823** | | **0.0823** | **0.0823** | | **1,298.6622** | **1,298.6622** | **0.0249** | **0.0238** | **1,306.5657** |

## 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 | 13.9766 | 0.1158 | 10.0235 | 5.3000e-004 | | 0.2157 | 0.2157 | | 0.2140 | 0.2140 | 0.0000 | 2,559.1336 | 2,559.1336 | 0.0666 | 0.0466 | 2,574.9737 |
| Unmitigated | 13.9766 | 0.1158 | 10.0235 | 5.3000e-004 | | 0.2157 | 0.2157 | | 0.2140 | 0.2140 | 0.0000 | 2,559.1336 | 2,559.1336 | 0.0666 | 0.0466 | 2,574.9737 |

## 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 | 1.3315 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.1018 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.2329 | 1.0000e-005 | 0.0127 | 0.0000 | | 0.1609 | 0.1609 | | 0.1593 | 0.1593 | 0.0000 | 2,541.1765 | 2,541.1765 | 0.0487 | 0.0466 | 2,556.6417 |
| Landscaping | 0.3104 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | | 17.9572 | 17.9572 | 0.0179 | | 18.3321 |
| **Total** | **13.9766** | **0.1158** | **10.0236** | **5.3000e-004** | | **0.2157** | **0.2157** | | **0.2140** | **0.2140** | **0.0000** | **2,559.1336** | **2,559.1336** | **0.0666** | **0.0466** | **2,574.9737** |

### 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 | 1.3315 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.1018 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.2329 | 1.0000e-005 | 0.0127 | 0.0000 | | 0.1609 | 0.1609 | | 0.1593 | 0.1593 | 0.0000 | 2,541.1765 | 2,541.1765 | 0.0487 | 0.0466 | 2,556.6417 |
| Landscaping | 0.3104 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | | 17.9572 | 17.9572 | 0.0179 | | 18.3321 |
| **Total** | **13.9766** | **0.1158** | **10.0236** | **5.3000e-004** | | **0.2157** | **0.2157** | | **0.2140** | **0.2140** | **0.0000** | **2,559.1336** | **2,559.1336** | **0.0666** | **0.0466** | **2,574.9737** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Vegetation

# Rancho Palma (Phase 2)

**San Bernardino-South Coast County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Parking Lot | 500.00 | Space | 4.50 | 200,000.00 | 0 |
| Single Family Housing | 120.00 | Dwelling Unit | 28.40 | 313,200.00 | 343 |
| Regional Shopping Center | 98.00 | 1000sqft | 4.70 | 98,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 32 |
| **Climate Zone** | 10 | | | **Operational Year** | 2019 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 479.9 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

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

Project Characteristics - CPUC GHG Calculator version 3c, worksheet tab "CO2 Allocations," cells AH/AQ 35-44.

Land Use - Total Lot Acreage: 37.6; Average home size is 2,610 SF based on 50% maximum coverage

Construction Phase - Operation run only

Off-road Equipment - Operation run only

Vehicle Trips - Trip Rate based on Traffic Study; Weekend Trip Rates based on ITE Trip Generation Handbook, 9th Edition. Credit for Internal Capture and Pass-By Trips have been taken.

Woodstoves - Gas Stoves Only

Energy Use - Title-24 Energy Intensity for Electricity & Natural Gas were adjusted by 21.8% & 16.8% respectively, for Non-Residential, and by 36.4% & 6.5%, respectively, for Residential. Impact Analysis California's 2013 Building Energy Efficiency Standards (CEC).

Mobile Land Use Mitigation -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 50.00 | 1.00 |
| tblEnergyUse | T24E | 5.60 | 4.38 |
| tblEnergyUse | T24E | 980.99 | 623.91 |
| tblEnergyUse | T24NG | 2.02 | 1.68 |
| tblEnergyUse | T24NG | 27,816.78 | 26,008.69 |
| tblFireplaces | NumberGas | 102.00 | 120.00 |
| tblFireplaces | NumberNoFireplace | 12.00 | 0.00 |
| tblFireplaces | NumberWood | 6.00 | 0.00 |
| tblLandUse | LandUseSquareFeet | 216,000.00 | 313,200.00 |
| tblLandUse | LotAcreage | 38.96 | 28.40 |
| tblLandUse | LotAcreage | 2.25 | 4.70 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 0.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 630.89 | 479.9 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2019 |
| tblVehicleTrips | DV_TP | 35.00 | 0.00 |
| tblVehicleTrips | PB_TP | 11.00 | 34.00 |
| tblVehicleTrips | PR_TP | 54.00 | 66.00 |
| tblVehicleTrips | ST_TR | 49.97 | 46.20 |
| tblVehicleTrips | ST_TR | 10.08 | 5.53 |
| tblVehicleTrips | SU_TR | 25.24 | 23.34 |
| tblVehicleTrips | SU_TR | 8.77 | 4.81 |
| tblVehicleTrips | WD_TR | 42.94 | 63.23 |
| tblVehicleTrips | WD_TR | 9.57 | 5.31 |
| tblWoodstoves | NumberCatalytic | 6.00 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 6.00 | 0.00 |

# 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2016 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | 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 | | | | | |
| 2016 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

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

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 13.9766 | 0.1158 | 10.0235 | 5.3000e-004 | | 0.2157 | 0.2157 | | 0.2140 | 0.2140 | 0.0000 | 2,559.1336 | 2,559.1336 | 0.0666 | 0.0466 | 2,574.9737 |
| Energy | 0.1190 | 1.0204 | 0.4558 | 6.4900e-003 | | 0.0823 | 0.0823 | | 0.0823 | 0.0823 | | 1,298.6622 | 1,298.6622 | 0.0249 | 0.0238 | 1,306.5657 |
| Mobile | 19.8505 | 54.9271 | 198.2662 | 0.5006 | 34.8211 | 0.7824 | 35.6034 | 9.2998 | 0.7211 | 10.0209 | | 40,334.7656 | 40,334.7656 | 1.4398 | | 40,365.0007 |
| **Total** | **33.9461** | **56.0634** | **208.7456** | **0.5076** | **34.8211** | **1.0803** | **35.9014** | **9.2998** | **1.0173** | **10.3171** | **0.0000** | **44,192.5615** | **44,192.5615** | **1.5312** | **0.0704** | **44,246.5401** |

### 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 | 13.9766 | 0.1158 | 10.0235 | 5.3000e-004 | | 0.2157 | 0.2157 | | 0.2140 | 0.2140 | 0.0000 | 2,559.1336 | 2,559.1336 | 0.0666 | 0.0466 | 2,574.9737 |
| Energy | 0.1190 | 1.0204 | 0.4558 | 6.4900e-003 | | 0.0823 | 0.0823 | | 0.0823 | 0.0823 | | 1,298.6622 | 1,298.6622 | 0.0249 | 0.0238 | 1,306.5657 |
| Mobile | 18.8533 | 45.9844 | 173.7797 | 0.4038 | 27.8220 | 0.6372 | 28.4593 | 7.4305 | 0.5873 | 8.0179 | | 32,523.6933 | 32,523.6933 | 1.1840 | | 32,548.5564 |
| **Total** | **32.9489** | **47.1207** | **184.2590** | **0.4108** | **27.8220** | **0.9352** | **28.7572** | **7.4305** | **0.8836** | **8.3141** | **0.0000** | **36,381.4891** | **36,381.4891** | **1.2754** | **0.0704** | **36,430.0957** |

| | ROG | NOx | 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 | 2.94 | 15.95 | 11.73 | 19.08 | 20.10 | 13.44 | 19.90 | 20.10 | 13.15 | 19.41 | 0.00 | 17.68 | 17.68 | 16.71 | 0.00 | 17.67 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2016 | 1/1/2016 | 5 | 1 | |

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

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

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 0 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 0 | 8.00 | 162 | 0.38 |
| Demolition | Rubber Tired Dozers | 0 | 8.00 | 255 | 0.40 |

### Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 0 | 0.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2016

### Unmitigated Construction On-Site

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

### 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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | | **0.0000** |

### 3.2 Demolition - 2016

**Mitigated Construction On-Site**

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

**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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | | **0.0000** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Increase Diversity

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive 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 | 18.8533 | 45.9844 | 173.7797 | 0.4038 | 27.8220 | 0.6372 | 28.4593 | 7.4305 | 0.5873 | 8.0179 | | 32,523.6933 | 32,523.6933 | 1.1840 | | 32,548.5564 |
| Unmitigated | 19.8505 | 54.9271 | 198.2662 | 0.5006 | 34.8211 | 0.7824 | 35.6034 | 9.2998 | 0.7211 | 10.0209 | | 40,334.7656 | 40,334.7656 | 1.4398 | | 40,365.0007 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Regional Shopping Center | 6,196.54 | 4,527.60 | 2287.32 | 12,327,577 | 9,849,740 |
| Single Family Housing | 637.20 | 663.60 | 577.20 | 2,161,007 | 1,726,646 |
| Total | 6,833.74 | 5,191.20 | 2,864.52 | 14,488,584 | 11,576,385 |

### 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 |
| Parking Lot | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Regional Shopping Center | 16.60 | 8.40 | 6.90 | 16.30 | 64.70 | 19.00 | 66 | 0 | 34 |
| Single Family Housing | 14.70 | 5.90 | 8.70 | 40.20 | 19.20 | 40.60 | 86 | 11 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.469745 | 0.065359 | 0.173284 | 0.156374 | 0.056542 | 0.009056 | 0.016508 | 0.042061 | 0.001112 | 0.001336 | 0.004986 | 0.000686 | 0.002952 |

## 5.0 Energy Detail

### 4.4 Fleet Mix

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1190 | 1.0204 | 0.4558 | 6.4900e-003 | | 0.0823 | 0.0823 | | 0.0823 | 0.0823 | | 1,298.6622 | 1,298.6622 | 0.0249 | 0.0238 | 1,306.5657 |
| NaturalGas Unmitigated | 0.1190 | 1.0204 | 0.4558 | 6.4900e-003 | | 0.0823 | 0.0823 | | 0.0823 | 0.0823 | | 1,298.6622 | 1,298.6622 | 0.0249 | 0.0238 | 1,306.5657 |

## 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 | | | | | |
| Single Family Housing | 10507 | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| 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 |
| Regional Shopping Center | 531.616 | 5.7300e-003 | 0.0521 | 0.0438 | 3.1000e-004 | | 3.9600e-003 | 3.9600e-003 | | 3.9600e-003 | 3.9600e-003 | | 62.5431 | 62.5431 | 1.2000e-003 | 1.1500e-003 | 62.9237 |
| **Total** | | **0.1190** | **1.0204** | **0.4558** | **6.4900e-003** | | **0.0823** | **0.0823** | | **0.0823** | **0.0823** | | **1,298.6622** | **1,298.6622** | **0.0249** | **0.0238** | **1,306.5657** |

### 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 | | | | | |
| Single Family Housing | 10.507 | 0.1133 | 0.9683 | 0.4120 | 6.1800e-003 | | 0.0783 | 0.0783 | | 0.0783 | 0.0783 | | 1,236.1191 | 1,236.1191 | 0.0237 | 0.0227 | 1,243.6419 |
| 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 |
| Regional Shopping Center | 0.531616 | 5.7300e-003 | 0.0521 | 0.0438 | 3.1000e-004 | | 3.9600e-003 | 3.9600e-003 | | 3.9600e-003 | 3.9600e-003 | | 62.5431 | 62.5431 | 1.2000e-003 | 1.1500e-003 | 62.9237 |
| **Total** | | **0.1190** | **1.0204** | **0.4558** | **6.4900e-003** | | **0.0823** | **0.0823** | | **0.0823** | **0.0823** | | **1,298.6622** | **1,298.6622** | **0.0249** | **0.0238** | **1,306.5657** |

## 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 | 13.9766 | 0.1158 | 10.0235 | 5.3000e-004 | | 0.2157 | 0.2157 | | 0.2140 | 0.2140 | 0.0000 | 2,559.1336 | 2,559.1336 | 0.0666 | 0.0466 | 2,574.9737 |
| Unmitigated | 13.9766 | 0.1158 | 10.0235 | 5.3000e-004 | | 0.2157 | 0.2157 | | 0.2140 | 0.2140 | 0.0000 | 2,559.1336 | 2,559.1336 | 0.0666 | 0.0466 | 2,574.9737 |

## 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 | 1.3315 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.1018 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.2329 | 1.0000e-005 | 0.0127 | 0.0000 | | 0.1609 | 0.1609 | | 0.1593 | 0.1593 | 0.0000 | 2,541.1765 | 2,541.1765 | 0.0487 | 0.0466 | 2,556.6417 |
| Landscaping | 0.3104 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | | 17.9572 | 17.9572 | 0.0179 | | 18.3321 |
| **Total** | **13.9766** | **0.1158** | **10.0236** | **5.3000e-004** | | **0.2157** | **0.2157** | | **0.2140** | **0.2140** | **0.0000** | **2,559.1336** | **2,559.1336** | **0.0666** | **0.0466** | **2,574.9737** |

### 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 | 1.3315 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.1018 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.2329 | 1.0000e-005 | 0.0127 | 0.0000 | | 0.1609 | 0.1609 | | 0.1593 | 0.1593 | 0.0000 | 2,541.1765 | 2,541.1765 | 0.0487 | 0.0466 | 2,556.6417 |
| Landscaping | 0.3104 | 0.1158 | 10.0108 | 5.3000e-004 | | 0.0547 | 0.0547 | | 0.0547 | 0.0547 | | 17.9572 | 17.9572 | 0.0179 | | 18.3321 |
| **Total** | **13.9766** | **0.1158** | **10.0236** | **5.3000e-004** | | **0.2157** | **0.2157** | | **0.2140** | **0.2140** | **0.0000** | **2,559.1336** | **2,559.1336** | **0.0666** | **0.0466** | **2,574.9737** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

## 10.0 Vegetation