MHSR Apartments

Air Quality and Greenhouse Gas Impact Study

City of Murrieta, CA

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GLOSSARY OF TERMS

AQMP	Air Quality Management Plan
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
GHG	Greenhouse gas
HFCs	Hydrofluorocarbons
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
SRA	Source/Receptor Area
TAC	Toxic air contaminants
VOC	Volatile organic compounds
WRCC	Western Regional Climate Center

1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

This air quality and greenhouse gas (GHG) analysis was prepared to evaluate whether the estimated criteria pollutants and GHG emissions generated from the project would cause a significant impact to the air resources in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The assessment is consistent with the methodology and emission factors endorsed by South Coast Air Quality Management District (SCAQMD), California Air Resource Board (CARB), and the United States Environmental Protection Agency (US EPA).

1.2 Project Summary

1.2.1 Site Location

The project site is located at the southeast corner of Delhaven Street and Date Street in Murrieta, California, as shown in Exhibit A. The site is currently zoned as Neighborhood Commercial and classified as General Commercial in the City of Murrieta General Plan. The project includes Change of Zone to Multi-family Residential 3 and a General Plan Amendment to Multi-family Residential. The proposed use is multi-family residential. Land uses surrounding the site include single-family residential uses and commercial uses adjacent to the south, vacant land and commercial uses adjacent to the north, commercial uses and Highway 79 to the east, and multi-family residential uses and vacant land to the west.

1.2.2 Project Description

The project is a General Plan Amendment, Zone Change and Development Plan to change the existing Commercial General Plan land use, Neighborhood Commercial zoning to Multifamily Residential General Plan land use, Multi-Family 3 zoning and to develop multi-family housing totaling 234 units on a 8.37 acre site[1].

The project site is located at the intersection of Delhaven Avenue and Date Street the south east corner and is comprised of Assessor Parcel Numbers (APN) 913-210-005, 006, 007, 010-013, 033, 034, 035 and portions of 913-210-032. The site is subject to the Commercial General Plan Land Use Designation and is Zoned Neighborhood Commercial. A General Plan and Zone Change Amendment is proposed. The site is undeveloped. Access would be provided by two private drives proposed to be located at Date Street and at Rising Hill Drive. Currently Earthwork being proposed would have an excavation depth of four feet below finish grade or two feet below the deepest footing, whichever is greater.

[1] In order to be consistent with the Traffic Impact Analysis prepared for the proposed project by TJW Engineering, Inc. (Revised January 10, 2019), this Air Quality and Greenhouse Gas Impact Study modeled 238 Dwelling Units. This is a more conservative analysis than the 234 dwelling units proposed.

Construction activities within the Project area will consist of on-site grading, building, paving, and architectural coating. Table 1 summarizes the land use description for the Project Site.

Table 1: Land Use Summary

Land Use	Unit Amount	Size Metric
Other Non-Asphalt Surfaces (landscaping)	2.81	Acres
Other Non-Asphalt Surfaces (open space)	0.57	Acres
Other Asphalt Surfaces	2.65	Acres
Apartments Low Rise	238	Dwelling Units

1.2.3 Sensitive Receptors

Sensitive receptors are considered land uses or other types of population groups that are more sensitive to air pollution than others due to their exposure. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases. For CEQA purposes, a sensitive receptor would be a location where a sensitive individual could remain for 24-hours or longer, such as residencies, hospitals, and schools (etc).

The closest existing sensitive receptors (to the site area) are residential land uses located adjacent to the south and west of the project site.

1.3 Executive Summary of Findings and Mitigation Measures

The following is a summary of the analysis results:

Construction-Source Emissions
Project construction-source emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD.

Project construction-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). As discussed herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

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.

Operational-Source Emissions

The project operational-sourced emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. Project operational-source emissions would not result in or cause a significant localized air quality impact as discussed in the Operations-Related Local Air Quality Impacts section of this report. Additionally, project-related traffic will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO "hotspots). Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the project.

Project operational-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). The project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential operational-source odor impacts are therefore considered less-than significant.

With incorporation of mitigation measures 1 through 3, project-related GHG emissions meet the SCAQMD draft threshold and are also considered to be less than significant. The project also complies with the goals of the CARB Scoping Plan, AB-32, SB-32 and City of Murrieta Climate Action Plan (CAP).

Mitigation Measures

A. <u>Construction Measures</u>

Adherence to SCAQMD Rule 403 is required.

No construction mitigation required.

B. <u>Operational Measures to Reduce GHG Emissions</u>

Mitigation Measure 1. The project applicant shall require that: all faucets, toilets and showers installed in the proposed structures utilize low-flow fixtures that would reduce indoor water demand by 20% per CalGreen Standards, water-efficient landscaping practices are employed on-site.

Mitigation Measure 2. The project applicant shall require recycling programs that reduces waste to landfills by a minimum of 75 percent (per AB 341).

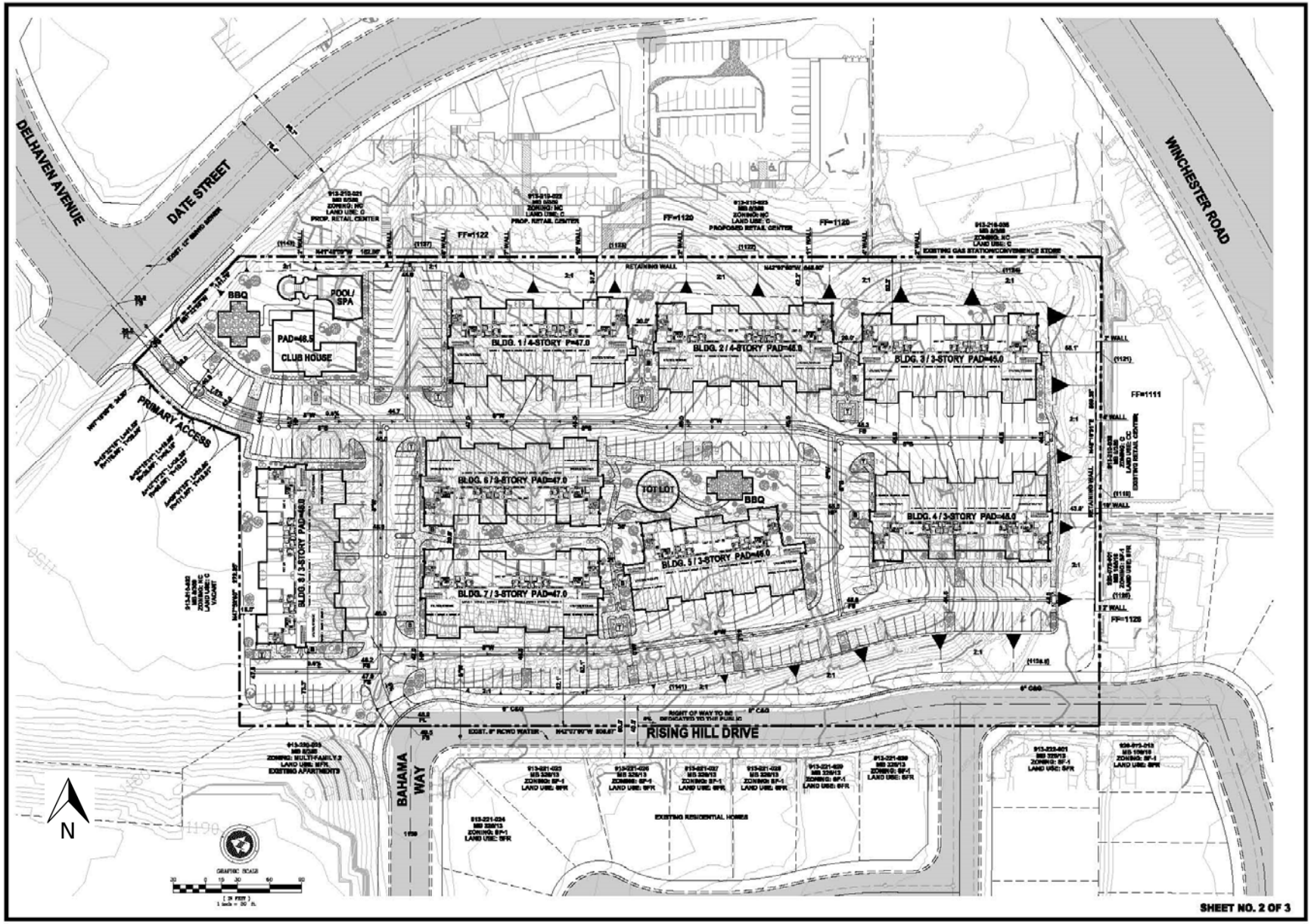
Mitigation Measure 3. The project applicant shall require that high-efficiency lighting (such as LED lighting that is 34 percent more efficient than fluorescent lighting) be installed on-site.

Exhibit A

Location Map

Exhibit B

Site Plan



2.0 Regulatory Framework and Background

2.1 Air Quality Regulatory Setting

Air pollutants are regulated at the national, state, and air basin level; each agency has a different level of regulatory responsibility. The United States Environmental Protection Agency (EPA) regulates at the national level. The California Air Resources Board (ARB) regulates at the state level. The South Coast Air Quality Management District (SCAQMD) regulates at the air basin level.

2.1.1 National and State

The EPA is responsible for global, international, and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Air Quality Standards, also known as federal standards. There are six common air pollutants, called criteria pollutants, which were identified from the provisions of the Clean Air Act of 1970.

- Ozone
- Nitrogen Dioxide
- Lead
- Particulate Matter (PM10 and PM2.5)
- Carbon Monoxide
- Particulate Matter
- Sulfur Dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to project the public health.

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The State Implementation Plan for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's State Implementation Plan incorporates individual federal attainment plans for regional air districts—air district prepares their federal attainment plan, which sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. See http://www.arb.ca.gov/research/aaqs/aaqs.htm for additional information on criteria pollutants and air quality standards.

The federal and state ambient air quality standards are summarized in Table 2 and can also be found at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

Table 2: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentrations[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O3)	1-Hour	0.09 ppm	Ultraviolet Photometry	- -	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm		0.070 ppm (147 µg/m³)		
Respirable Particulate Matter (PM10)[8]	24-Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µ/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		- -		
Fine Particulate Matter (PM2.5)[8]	24-Hour	- -	- -	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 µg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 µg/m³)	- -	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 µg/m³)		9 ppm (10 µg/m³)	- -	
	8-Hour (Lake Tahoe)	6 ppm (7 µg/m³)		- -	- -	
Nitrogen Dioxide (NO_2)[9]	1-Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	- -	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (357 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1-Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	- -	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3-Hour	- -		- -	0.5 ppm (1300 mg/m³)	
	24-Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[10]	- -	
	Annual Arithmetic Mean	- -		0.130ppm (for certain areas)[10]	- -	
Lead[11,12]	30 Day Average	1.5 µg/m³	Atomic Absorption	- -		
	Calendar Qrtr	- -		1.5 µg/m³ (for certain areas)[12]	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	- -		0.15 µg/m³		
Visibility Reducing Particles[13]	8-Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24-Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24-Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

Notes:

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 µg/m³ 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 December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

9. 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.

10. On June 2, 2010, a new 1-hour SO2 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 SO2 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.

11. 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.

12. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/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.

13. 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.

Several pollutants listed in Table 2 are not addressed in this analysis. Analysis of lead is not included in this report because the project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The project is not expected to generate or be exposed to vinyl chloride because proposed project uses do not utilize the chemical processes that create this pollutant and there are no such uses in the project vicinity. The proposed project is not expected to cause exposure to hydrogen sulfide because it would not generate hydrogen sulfide in any substantial quantity.

2.1.2 South Coast Air Quality Management District

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

Every three (3) years the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon.

On March 23, 2017 CARB approved the 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air.

The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. The primary goal of this Air Quality Management Plan is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged communities. Now that the plan has been approved by CARB, it has been forwarded to the U.S. Environmental Protection Agency for its review. If approved by EPA, the plan becomes federally enforceable

The 2012 AQMP built upon the approaches taken in the 2007 AQMP for the attainment of federal PM and ozone standards, and highlights the significant amount of reductions needed and the need to engage in interagency coordinated planning of mobile sources to meet all of the federal criteria pollutant standards. Compared with the 2007 AQMP, the 2012 AQMP utilized revised emissions inventory projections that use 2008 as the base year. On-road emissions are calculated using CARB EMFAC2011 emission factors and the transportation activity data provided by SCAG from their 2012 Regional Transportation Plan (2012 RTP). Off-road emissions were updated using CARB's 2011 In-Use Off-Road Fleet Inventory Model. Since the 2007 AQMP was finalized new area source categories such as liquid propane gas (LPG) transmission losses, storage tank and pipeline cleaning and degassing, and architectural colorants, were created and included in the emissions inventories. The 2012 AQMP also includes analysis of several additional sources of GHG emissions such as landfills and could also assist in reaching the GHG target goals in the AB32 Scoping Plan.

South Coast Air Quality Management District Rules

The AQMP for the basin establishes a program of rules and regulations administered by SCAQMD to obtain attainment of the state and federal standards. Some of the rules and regulations that apply to this Project include, but are not limited to, the following:

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

SCAQMD Rule 403 governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways,

cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable suppression techniques are indicated below and include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas in active for 10 days or more).
- Water active sites at least three times daily.
- Cover all trucks hauling dirt, san, soil, or other loose materials, or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) section 23114.
- Pave construction access roads at least 100 feet onto the site from the main road.
- Reduce traffic speeds on all unpaved roads to 15 mph or less.
- Suspension of all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.
- Bumper strips or similar best management practices shall be provided where vehicles enter and exit the construction site onto paved roads or wash off trucks and any equipment leaving the site each trip.
- Replanting disturbed areas as soon as practical.
- During all construction activities, construction contractors shall sweep on-site and off-iste streets if silt is carried to adjacent public thoroughfares, to reduce the amount of particulate matter on public streets.

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

Idling Diesel Vehicle Trucks – Idling for more than 5 minutes in any one location is prohibited within California borders.

Rule 2702. The SCAQMD adopted Rule 2702 on February 6, 2009, which establishes a voluntary air quality investment program from which SCAQMD can collect funds from parties that desire certified GHG emission reductions, pool those funds, and use them to purchase or fund GHG emission reduction projects within two years, unless extended by the Governing Board. Priority will be given to projects that result in co-benefit emission reductions of GHG emissions and criteria or toxic air pollutants within environmental justice areas. Further, this voluntary program may compete with the cap-and-trade program identified for implementation in CARB's Scoping Plan, or a Federal cap and trade program.

2.2 Greenhouse Gas Regulatory Setting

2.2.1 International

Many countries around the globe have made an effort to reduce GHGs since climate change is a global issue.

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

United Nations. The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

The 2014 UN Climate Change Conference in Lima Peru provided a unique opportunity to engage all countries to assess how developed countries are implementing actions to reduce emissions.

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

2.2.2 National

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

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's

National Highway Safety Administration announced a joint final rule establishing a national program that would reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States.

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

On October 25, 2010, the EPA and the U.S. Department of Transportation proposed the first national standards to reduce greenhouse gas emissions and improve fuel efficiency of heavy-duty trucks and buses. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20 percent reduction in carbon dioxide emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10 percent reduction for gasoline vehicles and 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the agencies are proposing engine and vehicle standards starting in the 2014 model year which would achieve up to a 10 percent reduction in fuel consumption and carbon dioxide emissions by 2018 model year.

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

Climate Adaption Plan. The EPA Plan identifies priority actions the Agency will take to incorporate considerations of climate change into its programs, policies, rules and operations to ensure they are effective under future climatic conditions. The following link provides more information on the EPA Plan: https://www.epa.gov/arc-x/planning-climate-change-adaptation

2.2.3 California

California Code of Regulations (CCR) Title 24, Part 6. CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by

fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008 and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. 2013 and 2016 standards have been approved and became effective July 1, 2014 and January 1, 2016, respectively.

California Code of Regulations (CCR) Title 24, Part 11. All buildings for which an application for a building permit is submitted on or after January 1, 2017 must follow the 2016 standards. All buildings for which an application for a building permit is submitted on or after January 1, 2014 must follow the 2013 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions. The following link provides more information on Title 24, Part 11:
https://www.energy.ca.gov/title24/2016standards/index.html

California Green Building Standards. On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The Code is a comprehensive and uniform regulatory code for all residential, commercial and school buildings. CCR Title 24, Part 11: California Green Building Standards (Title 24) became effective in 2001 in response to continued efforts to reduce GHG emissions associated with energy consumption. CCR Title 24, Part 11 now require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for commercial occupancies include specified parking for clean air vehicles, a 20 percent reduction of potable water use within buildings, a 50 percent construction waste diversion from landfills, use of building finish materials that emit low levels of volatile organic compounds, and commissioning for new, nonresidential buildings over 10,000 square feet.

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official. The following link provides more on CalGreen Building Standards:
http://www.bsc.ca.gov/Home/CALGreen.aspx

Executive Order S-3-05. California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following targets:

- By 2010, California shall reduce greenhouse gas emissions to 2000 levels;
- By 2020, California shall reduce greenhouse gas emissions to 1990 levels.
- By 2050, California shall reduce greenhouse gas emissions to 80 percent below 1990 levels.

The executive order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs.

Executive Order S-01-07. Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

SB 97. Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Resource Agency, to prepare, develop, and

transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance are provided and no specific mitigation measures are identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that “to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation.”
- OPR’s emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

AB 32. The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. “Greenhouse gases” as defined under AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. ARB is the state agency charged with monitoring and regulating sources of greenhouse gases. AB 32 states the following:

Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the

exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB Board approved the 1990 greenhouse gas emissions level of 427 million metric tons of carbon dioxide equivalent (MMTCO2e) on December 6, 2007 (California Air Resources Board 2007). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 MMTCO2e. Emissions in 2020 in a "business as usual" scenario are estimated to be 596 MMTCO2e.

Under AB 32, the ARB published its Final Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California. Discrete early action measures are currently underway or are enforceable by January 1, 2010. The ARB has 44 early action measures that apply to the transportation, commercial, forestry, agriculture, cement, oil and gas, fire suppression, fuels, education, energy efficiency, electricity, and waste sectors. Of these early action measures, nine are considered discrete early action measures, as they are regulatory and enforceable by January 1, 2010. The ARB estimates that the 44 recommendations are expected to result in reductions of at least 42 MMTCO2e by 2020, representing approximately 25 percent of the 2020 target.

The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 (California Air Resources Board 2008). The Scoping Plan identifies recommended measures for multiple greenhouse gas emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 greenhouse gas target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, Including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. "Capped" strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion

of these emissions within the cap-and trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. "Uncapped" strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional greenhouse gas emission reductions.[4]

SB 375. Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG), which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 13 percent below 2005 per capita GHG emissions levels by 2035. On April 4, 2012, SCAG adopted the 2012-2035 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS), which meets the CARB emission reduction requirements. The Housing Element Update is required by the State to be completed within 18 months after RTP/SCS adoption or by October 2013.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS or APS. However, new provisions of CEQA would incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS or APS and categorized as "transit priority projects."

Assembly Bill 939 and Senate Bill 1374. Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

Executive Order S-13-08. Executive Order S-13-08 indicates that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resource Agency 2009) was adopted, which is the "…

first statewide, multi-sector, region-specific, and information-based climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order B-30-15. Executive Order B-30-15, establishing a new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030, was signed by Governor Brown in April 2015.

Executive Order B-29-15. Executive Order B-29-15, mandates a statewide 25% reduction in potable water usage and was signed into law on April 1, 2015.

Executive Order B-37-16. Executive Order B-37-16, continuing the State's adopted water reduction, was signed into law on May 9, 2016. The water reduction builds off the mandatory 25% reduction called for in EO B-29-15.

2.2.4 South Coast Air Quality Management District

The Project is within the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). SCAQMD Regulation XXVII currently includes three rules:

- The purpose of Rule 2700 is to define terms and post global warming potentials.
- The purpose of Rule 2701, SoCal Climate Solutions Exchange, is to establish a voluntary program to encourage, quantify, and certify voluntary, high quality certified greenhouse gas emission reductions in the SCAQMD.
- Rule 2702, Greenhouse Gas Reduction Program, was adopted on February 6, 2009. The purpose of this rule is to create a Greenhouse Gas Reduction Program for greenhouse gas emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

SCAQMD Threshold Development

The SCAQMD has established recommended significance thresholds for greenhouse gases for local lead agency consideration ("SCAQMD draft local agency threshold"). SCAQMD has published a five-tiered draft GHG threshold which includes a 10,000 metric ton of CO_2e per year for stationary/industrial sources and 3,000 metric tons of CO_2e per year significance threshold for residential/commercial projects (South Coast Air Quality Management District 2010c). Tier 3 is anticipated to be the primary tier by which the SCAQMD will determine significance for projects. The Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90-precent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to CEQA analysis. The 90-percent capture rate GHG significance screening level in Tier 3 for stationary sources was derived using the SCAQMD's annual Emissions Reporting Program.

The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether or not the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.
- Tier 3 consists of screening values, which the lead agency can choose but must be consistent. A project's construction emissions are averaged over 30 years and are added to a project's operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:
  - All land use types: 3,000 MTCO2e per year
  - Based on land use types: residential is 3,500 MTCO2e per year; commercial is 1,400 MTCO2e per year; and mixed use is 3,000 MTCO2e per year
- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual by a certain percentage; this percentage is currently undefined
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures
  - Option 3: Year 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO2e/SP/year for projects and 6.6 MTCO2e/SP/year for plans;
  - Option 3, 2035 target: 3.0 MTCO2e/SP/year for projects and 4.1 MTCO2e/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

2.2.5 City of Murrieta

City of Murrieta General Plan

Local jurisdictions, such as the City of Murrieta, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the 2016 AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with the CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

The City of Murrieta's Air Quality Element in the General Plan, contains the following air quality-related goals and policies that are applicable to the proposed project:

Goal AQ-2 The relationship between land use and air quality is considered in policy decisions in order to protect public health and improve air quality.

Policies

AQ-2.1 Locate sensitive receptors (i.e., residences, schools, playgrounds, childcare centers, athletic facilities, churches, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes) away from significant pollution sources to the maximum extent feasible.

AQ-2.3 Consider air quality impacts from both existing and new development when making siting decisions.

AQ-2.4 Consult the California Air Resources Board's (CARB) Land Use and Air Quality Handbook and current environmental health research for the safe distances to sensitive land uses including schools, hospitals, elder and childcare facilities, or residences when new or expanded industrial land uses or other stationary sources of pollution are proposed, such as gas stations or auto body shops.

Goal AQ-3 Reduced emissions during construction activities.

Policies

AQ-3.1 Ensure that construction activities follow current South Coast Air Quality Management District (SCAQMD) rules, regulations, and thresholds.

AQ-3.2 Ensure all applicable best management practices are used in accordance with the South Coast Air Quality Management District (SCAQMD) to reduce emitting criteria pollutants during construction.

AQ-3.3 Require all construction equipment for public and private projects comply with California Air Resources Board's (CARB) vehicle standards. For projects that may exceed daily construction emissions established by the South Coast Air Quality Management District (SCAQMD), Best Available Control Measures will be incorporated to reduce construction emissions to below daily emission standards established by the SCAQMD.

AQ-3.4 Require project proponents to prepare and implement a Construction Management Plan, which will include Best Available Control Measures among others. Appropriate control measures will be determined on a project by project basis, and should be specific to the pollutant for which the daily threshold is exceeded. Such control measures may include but not be limited to:

- Minimizing simultaneous operation of multiple construction equipment units.
- Implementation of South Coast Air Quality Management District (SCAQMD) Rule 403, Fugitive Dust Control Measures.
- Watering the construction area to minimize fugitive dust.
- Require that off-road diesel powered vehicles used for construction shall be new low emission vehicles, or use retrofit emission control devices, such as diesel oxidation catalysts and diesel particulate filters verified by California Air Resources Board (CARB).
- Minimizing idling time by construction vehicles.

Goal AQ-6 Stationary source pollution (point source and area source) are minimized through existing and future regulations and new technology.

Policies

AQ-6.1 The City shall continue to minimize stationary source pollution through the following:

- Ensure that industrial and commercial land uses are meeting existing South Coast Air Quality Management District (SCAQMD) air quality thresholds by adhering to established rules and regulations.
- Encourage the use of new technology to neutralize harmful criteria pollutants from stationary sources.
- Reduce exposure of the City's sensitive receptors to poor air quality nodes through smart land use decisions.

Goal AQ-7 Particulate matter and fugitive dust emissions are reduced throughout the City.

Policies

AQ-7.1 Adopt incentives, regulations, or procedures to reduce particulate matter.

AQ-7.2 Collaborate with transportation agencies, utilities, and developers to minimize fugitive dust and emissions from construction and maintenance activities.

AQ-7.3 Cooperate with local, regional, State, and Federal jurisdictions and/or agencies to better control fugitive dust from stationary, mobile, and area sources.

AQ-7.4 Consider the suspension of all grading operations, not including dust control actions, at construction projects when the source represents a public nuisance or potential safety hazard due to reduced visibility on streets surrounding the property.

City of Murrieta Climate Action Plan

The City of Murrieta adopted a Climate Action Plan (CAP) as part of the City's General Plan 2035 in 2011. The City's CAP provides a framework for reducing GHG emissions and managing resources to best prepare for a changing climate. The CAP implements policies that have been identified in the Land Use; Economic Development; Circulation; Infrastructure; Healthy Community; Conservation; Recreation and Open Space, and Air Quality Elements of the General Plan. The CAP recommends GHG emission targets that are consistent with the reduction targets of the state and presents a number of strategies that will make it possible for the City to meet the recommended targets. The City's CAP also suggests best practices for implementation and makes recommendations for measuring progress. The purpose of the City's CAP is to guide the development, enhancement, and implementation of actions that would reduce the City's GHG emissions by 15 percent below baseline (year 2009) levels by 2020.

Therefore, to determine whether the project's GHG emissions are significant, this analysis initially uses the SCAQMD draft local agency tier 3 screening threshold of 3,000 MTCO2e per year for all land use types and then the tier 4 target service population threshold of 4.8 MTCO2e per service population per year for project.

The project will be subject to the latest requirements of the California Green Building and Title 24 Energy Efficiency Standards (currently 2016) which would reduce project-related greenhouse gas emissions.

3.0 Setting

3.1 Existing Physical Setting

The project site is located in the City of Murrieta, which is part of the South Coast Air Basin (SCAB) that includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The South Coast Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the South Coast Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter.

3.1.1 Local Climate and Meteorology

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the region form natural horizontal barriers to the dispersion of air contaminants. Air pollution created in the coastal areas and around the Los Angeles area is transported inland until it reaches the mountains where the combination of mountains and inversion layers generally prevent further dispersion. This poor ventilation results in a gradual degradation of air quality from the coastal areas to inland areas. Air stagnation may occur during the early evening and early morning periods of transition between day and nighttime flows. The region also experiences periods of hot, dry winds from the desert, known as Santa Ana winds. If the Santa Ana winds are strong, they can surpass the sea breeze, which blows from the ocean to the land, and carry the suspended dust and pollutants out to the ocean. If the winds are weak, they are opposed by the sea breeze and cause stagnation, resulting in high pollution events.

The annual average temperature varies little throughout much of the basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas where the project site is located. The majority of the annual rainfall in the basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thunderstorms in the coastal regions and slightly heavier showers in the eastern portion of the basin along the coastal side of the mountains. Year-to-year patterns in rainfall are unpredictable because of fluctuations in the weather.

Temperature inversions limit the vertical depth through which pollution can be mixed. Among the most common temperature inversions in the basin are radiation inversions, which form on clear winter nights when cold air off mountains sink to the valley floor while the air aloft over the valley remains warm. These inversions, in conjunction with calm winds, trap pollutants near the source. Other types of temperature inversions that affect the basin include marine, subsidence, and high-pressure inversions.

Summers are often periods of hazy visibility and occasionally unhealthful air. Strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high

enough to pass over the mountains and ultimately dilute the smog cloudtrap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin, there is not enough traffic in inland valleys to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin, there is not enough traffic to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the City of Sun City, closest monitoring station to the project site, are in Table 3. Table 3 shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table 3: Meteorological Summary

Month	Temperature (˚F)		Average Precipitation (inches)
	Average High	Average Low	
January	66.7	36.3	2.29
February	68.1	38.9	3.08
March	71.1	41.6	1.95
April	77.2	45.1	0.79
May	83.2	50.1	0.31
June	91.8	54.5	0.07
July	97.6	58.6	0.04
August	98.6	60.1	0.22
September	93.5	57.4	0.10
October	84.2	49.3	0.45
November	71.2	39.4	0.71
December	66.9	35.4	1.33
Annual Average	**81.1**	**47.4**	**11.3**

Notes:
[1] Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca8655

3.1.2 Local Air Quality

The SCAQMD has divided the South Coast Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in Murrieta however ambient air quality data was utilized from Winchester and Lake Elsinore (Areas 24 and 25) monitoring stations, which is located in Riverside County and covers the Perris Valley/Lake Elsinore area.

The nearest air monitoring station to the project site is the Winchester-33700 Borel Road Station (Winchester Station). The Winchester Station is located approximately 3.9 miles northeast of the project site, however this location does not provide all ambient weather data. Therefore, additional data was pulled from the SCAQMD historical data for the Elsinore Valley (Area 25) for both sulfur dioxide and carbon monoxide to provide the existing levels. Table 4 presents the monitored pollutant levels within the vicinity. However, it should be noted that due to the air monitoring station distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site.

Table 4: Local Area Air Quality Levels from the Winchester/Elsinore Monitoring Stations

Pollutant (Standard)[2]	Year		
	2014	**2015**	**2016**
Ozone:			
Maximum 1-Hour Concentration (ppm)	0.100	0.092	0.104
Days > CAAQS (0.09 ppm)	**1**	0	**4**
Maximum 8-Hour Concentration (ppm)	0.087	0.082	0.088
Days > NAAQS (0.07 ppm)	**20**	**19**	**47**
Days > CAAQS (0.070 ppm)	**23**	**20**	**49**
Carbon Monoxide:			
Maximum 1-Hour Concentration (ppm)	0.8	1.2	--[3]
Days > NAAQS (20 ppm)	0	0	0
Maximum 8-Hour Concentration (ppm)	0.60	0.60	--[3]
Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:			
Maximum 1-Hour Concentration (ppm)	0.047	0.051	0.049
Days > NAAQS (0.25 ppm)	0	0	0
Sulfur Dioxide:			
Maximum 24-Hour Concentration (ppm)	--[3]	--[3]	--[3]
Days > CAAQS (0.04 ppm)	0	0	0
Inhalable Particulates (PM10):			
Maximum 24-Hour Concentration (ug/m^3)	90.7	99.7	134.1
Days > NAAQS (150 ug/m^3)	0	0	0
Days > CAAQS (50 ug/m^3)	--[3]	--[3]	--[3]
Annual Average (ug/m^3)	20.1	22.4	23.6
Annual > NAAQS (50 ug/m^3)	No	No	No
Annual > CAAQS (20 ug/m^3)	**Yes**	**Yes**	**Yes**
Ultra-Fine Particulates (PM2.5):			
Maximum 24-Hour Concentration (ug/m^3)	24.5	26.9	21.6
Days > NAAQS (35 ug/m^3)	--[3]	--[3]	--[3]
Annual Average (ug/m^3)	--[3]	--[3]	10.0
Annual > NAAQS (15 ug/m3)	--[3]	--[3]	No
Annual > CAAQS (12 ug/m^3)	--[3]	--[3]	No

[1] Source: obtained from https://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year and /or https://www.arb.ca.gov/adam/topfour/topfour1.php
[2] CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million
[3] No data available.

The monitoring data presented in Table 4 shows that ozone and particulate matter (PM10) are the air pollutants of primary concern in the project area, which are detailed below.

Ozone
During the 2015 to 2017 monitoring period, the State 1-hour concentration standard for ozone has been exceeded for one day in 2015 and four days in 2017 at the Winchester Station. Both the Federal and the State 8-hour ozone standard (0.07 ppm) has been exceeded between 19 and 49 days each year over the past three years at the Winchester Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of the SCAQMD contribute to the ozone levels experienced at the monitoring station, with the more significant areas being those directly upwind.

Carbon Monoxide
CO is another important pollutant that is due mainly to motor vehicles. The Elsinore Valley Area did not record an exceedance of the state or federal 1-hour or 8-hour CO standards for the last three years.

Nitrogen Dioxide
The Lake Elsinore Station did not record an exceedance of the State or Federal NO_2 standards for the last three years.

Sulfur Dioxide
The Elsinore Valley Area did not record an exceedance of the State SO_2 standards for the last three years.

Particulate Matter
During the 2015 to 2017 monitoring period, there was insufficient data for the State 24-hour concentration standard for PM10 at the Lake Elsinore Station. Over the same time period the Federal 24-hour and annual standards for PM10 have not been exceeded at the Lake Elsinore Station.

There was insufficient data for the Federal 24-hour standard for PM2.5 during the 2015 to 2017 monitoring period at the Winchester Station.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

3.1.3 Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard. Table 5 lists the attainment status for the criteria pollutants in the basin.

Table 5: South Coast Air Basin Attainment Status

Pollutant	Averaging Time	National Standards[1]	Attainment Date[2]	California Standards[3]
1979 1-Hour Ozone[4]	1-Hour (0.12 ppm)	Nonattainment (Extreme)	11/15/2010 (Not attained[4])	Extreme Nonattainment
1997 8-Hour Ozone[5]	8-Hour (0.08 ppm)	Nonattainment (Extreme)	6/15/2024	Nonattainment
2008 8-Hour Ozone	8-Hour (0.075 ppm)	Nonattainment (Extreme)	12/31/2032	
2015 8-Hour Ozone	8-Hour (0.070 ppm)	Designations Pending	~2037	
CO	1-Hour (35 ppm) 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007 (Attained)	Maintenance
NO_2[6]	1-Hour (100 ppb) Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (Attained)	Attainment
SO_2[7]	1-Hour (75 ppb)	Designations Pending	Pending	Attainment
	24-Hour (0.14 ppm) Annual (0.03 ppm)	Unclassifiable/ Attainment	3/19/1979 (Attained)	
PM10	24-Hour (150 µg/m^3)	Nonattainment (Serious)[8]	12/31/2006 (Redesignation request submitted)[8]	Nonattainment
PM2.5	24-Hour (35 µg/m^3)	Nonattainment	12/31/2006 (Redesignation request submitted)[8]	Unclassified
Lead	3-Months Rolling (0.15 µg/m^3)	Nonattainment (Partial)[9]	12/31/2015	Nonattainment (Partial)[9]

Notes:
[1] Obtained from Draft 2012 AQMP, SCAQMD, 2012. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassified/Attainment or Unclassifiable.
[2] A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration.
[3] Obtained from http://www.arb.ca.gov/desig/adm/adm.htm.
[4] 1-hour O_3 standard (0.13 ppm) was revoked, effective June 15, 2005; however, the Basin has not attained this standard based on 2008-2010 data has some continuing obligations under the former standard.
[5] 1997 8-hour O_3 standard (0.08 ppm) was reduced (0.075 ppm), effective May 27, 2008; the 1997 O3 standard and most related implementation rules remain in place until the 1997 standard is revoked by U.S. EPA.
[6] New NO_2 1-hour standard, effective August 2, 2010; attainment designations June, 2013; annual NO_2 standard retained.
[7] The 1971 annual and 24-hour SO_2 standards were revoked, effective August 23, 2010; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO_2 1-hour standard. Area designations expected in 2012, with SSAB designated Unclassifiable/Attainment.
[8] Annual PM10 standard was revoked, effective December 18, 2006; redesignation request to Attainment of the 24-hour PM10 standard is pending with U.S. EPA
[9] Partial Nonattainment designation - Los Angeles County portion of Basin only.

3.2 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface,

which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and nitrous oxide (NO_2) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. Table 6 provides a description of each of the greenhouse gases and their global warming potential.

Additional information is available: https://www.arb.ca.gov/cc/inventory/data/data.htm

<Table 6 on next page>

Table 6: Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources

Nitrous oxide	Nitrous oxide (N_20),also known as laughing gas is a colorless gas. It has a lifetime of 114 years. Its global warming potential is 298.	Microbial processes in soil and water, fuel combustion, and industrial processes. In addition to agricultural sources, some industrial processes (nylon production, nitric acid production) also emit N_20.
Methane	Methane (CH_4) is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 25.	A natural source of CH_4 is from the decay of organic matter. Methane is extracted from geological deposits (natural gas fields). Other sources are from the decay of organic material in landfills, fermentation of manure, and cattle farming.
Carbon dioxide	Carbon dioxide (CO_2) is an odorless, colorless, natural greenhouse gas. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Chlorofluorocarbons	CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). They are gases formed synthetically by replacing all hydrogen atoms in methane or methane with chlorine and/or fluorine atoms. Global warming potentials range from 3,800 to 8,100.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone, therefore their production was stopped as required by the Montreal Protocol.
Hydrofluorocarbons	Hydrofluorocarbons (HFCs) are a group of greenhouse gases containing carbon, chlorine, and at least one hydrogen atom. Global warming potentials range from 140 to 11,700.	Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants.
Perfluorocarbons	Perfluorocarbons (PFCs) have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above the Earth's surface. They have a lifetime 10,000 to 50,000 years. They have a global warming potential range of 6,200 to 9,500.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential, 23,900.	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Notes:
1. Sources: Intergovernmental Panel on Climate Change 2014a and Intergovernmental Panel on Climate Change 2014b. https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

4.0 Modeling Parameters and Assumptions

4.1 Construction

Typical emission rates from construction activities were obtained from CalEEMod Version 2016.3.2 CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2014 computer program to calculate the emission rates specific for the southwestern portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck operations. EMFAC2014 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Using CalEEMod, the peak daily air pollutant emissions were calculated and presented below. These emissions represent the highest level of emissions for each of the construction phases in terms of air pollutant emissions.

The analysis assesses the emissions associated with the construction of the proposed project as indicated in Table 1. Per the project-specific traffic impact analysis (TJW Engineering, Inc.) the proposed project is to be operational in 2020; therefore, construction is estimated to start no sooner than July 2019 and end by mid-December 2019. The phases of the construction activities which have been analyzed below are: 1) grading, 2) building, 3) paving, and 4) architectural coating. For details on construction modeling and construction equipment for each phase, please see Appendix A.

The project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of the Project area (approximately 8.37 gross acres (7.8 net acres)) and the fact that the project won't export more than 5,000 cubic yards of material a day a Fugitive Dust Control Plan or Large Operation Notification would not be required.

SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures are used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rule 403 would require the use of water trucks during all phases where earth moving operations would occur. Compliance with Rule 403 is required.

4.2 Operations

Operational or long-term emissions occur over the life of the Project. Both mobile and area sources generate operational emissions. Area source emissions arise from consumer product usage, heaters that consume natural gas, gasoline-powered landscape equipment, and architectural coatings (painting). Mobile source emissions from motor vehicles are the largest single long-term source of air pollutants from the operation of the Project. Small amounts of emissions would also occur from area sources such as the consumption of natural gas for heating, hearths, from landscaping emissions, and consumer product usage. The operational emissions were estimated using the latest version of CalEEMod.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project are based upon the trip generation rates give in the project-specific traffic impact analysis (TJW Engineering, Inc.) which uses the ITE 10th Trip Generation Manual. The traffic study shows a trip generation rate of 7.32 trips per dwelling unit.

The program then applies the emission factors for each trip which is provided by the EMFAC2014 model to determine the vehicular traffic pollutant emissions. The CalEEMod default trip lengths were used in this analysis. Please see CalEEMod output comments sections in Appendix A and B for details.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. As specifics were not known about the landscaping equipment fleet, CalEEMod defaults were used to estimate emissions from landscaping equipment.

Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied after January 1, 2014 will be limited to an average of 50 grams per liter or less and the CalEEMod model default was utilized as the new model takes this rule into account.

Energy Usage

2016.3.2 CalEEMod defaults were utilized.

4.3 Localized Construction Analysis

The SCAQMD has published a “Fact Sheet for Applying CalEEMod to Localized Significance Thresholds” (South Coast Air Quality Management District 2011b). CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain in its project design features or its mitigation measures the following parameters:

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

2. The maximum number of acres disturbed on the peak day.
3. Any emission control devices added onto off-road equipment.
4. Specific dust suppression techniques used on the day of construction activity with maximum emissions.

The construction equipment showing the equipment associated with the maximum area of disturbance is shown in Table 7.

Table 7: Construction Equipment Assumptions[1]

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Grading	Excavators	1	0.5	0.5
	Graders	1	0.5	0.5
	Rubber Tired Dozers	1	0.5	0.5
	Tractors/Loaders/Backhoes	3	0.5	1.5
Total Per Phase				3.0

Notes:
[1.] Source: South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2

As shown in Table 7, the maximum number of acres disturbed in a day would be 3 acres.

The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology, prepared by SCAQMD, revised July 2008. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. The emission thresholds were based on the Temecula Valley source receptor area (SRA 26) and a disturbance of 2 acres per day (to be conservative) at a distance of 25 meters (82 feet). According to LST methodology, any receptor located closer than 25 meters should be based on the 25 meter threshold. The closest receptors are adjacent to the south and west of the site.

4.4 Localized Operational Analysis

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The proposed project is a residential project and does not include such uses. Therefore, due to the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

5.0 Thresholds of Significance

5.1 Air Quality Thresholds of Significance

5.1.1 CEQA Guidelines for Air Quality

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the project would:

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

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

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d) Expose sensitive receptors to substantial pollutant concentrations; or

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

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, SCAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. There are daily emission thresholds for construction and operation of a proposed project in the basin.

5.1.2 Regional Significance Thresholds for Construction Emissions

The following CEQA significance thresholds for construction emissions are established for the Basin:

- 75 pounds per day (lbs/day) of VOC
- 100 lbs/day of NO_x
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of SO_2

Projects in the basin with construction-related emissions that exceed any of the emission thresholds are considered to be significant under SCAQMD guidelines.

5.1.3 Regional Significance Thresholds for Operational Emissions

The daily operational emissions significance thresholds for the basin are as follows:

- 55 pounds per day (lbs/day) of VOC
- 55 lbs/day of NO_x
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of SO_2

Local Microscale Concentration Standards The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm

5.1.4 Thresholds for Localized Significance

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significant Threshold Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significant Threshold Methodology found that the primary emissions of concern are NO2, CO, PM10, and PM2.5.

The emission thresholds were calculated based on the Temecula Valley source receptor area (SRA 26) and a disturbance of 2 acres per day (to be conservative) at a distance of 25 meters (82 feet), for construction.

5.2 Greenhouse Gas Thresholds of Significance

5.2.1 CEQA Guidelines for Greenhouse Gas

CEQA Guidelines define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in the environment.” To determine if a project would have a significant impact on greenhouse gases, the type, level, and impact of emissions generated by the project must be evaluated.

The following greenhouse gas significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97. A significant impact would occur if the project would:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

However, despite this, currently neither the CEQA statutes, OPR guidelines, nor the draft proposed changes to the CEQA Guidelines prescribe thresholds of significance or a particular methodology for performing an impact analysis; as with most environmental topics, significance criteria are left to the judgment and discretion of the Lead Agency. As previously discussed (Section 2.2.4 of this report), SCAQMD has drafted interim thresholds. The screening threshold of 3,000 MTCO2e per year for all land uses was used in this analysis.

6.0 Air Quality Emissions Impact

6.1 Construction Air Quality Emissions Impact

The latest version of CalEEMod was used to estimate the onsite and offsite construction emissions. The emissions incorporate Rule 402 and 403. Rule 402 and 403 (fugitive dust) are not considered mitigation measures as the project by default is required to incorporate these rules during construction.

6.1.1 Regional Construction Emissions

The construction emissions for the project would not exceed the SCAQMD's daily emission thresholds at the regional level as demonstrated in Table 8, and therefore would be considered less than significant.

Table 8: Regional Significance - Construction Emissions (pounds/day)

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Grading						
On-Site[2]	2.58	28.35	16.29	0.03	3.95	2.60
Off-Site[3]	0.08	0.05	0.67	0.00	0.17	0.05
Total	**2.66**	**28.40**	**16.96**	**0.03**	**4.12**	**2.64**
Building Construction						
On-Site[2]	2.36	21.08	17.16	0.03	1.29	1.21
Off-Site[3]	1.78	8.71	13.98	0.05	3.67	1.04
Total	**4.14**	**29.79**	**31.14**	**0.08**	**4.96**	**2.25**
Paving						
On-Site[2]	1.61	14.07	14.65	0.02	0.75	0.69
Off-Site[3]	0.08	0.05	0.60	0.00	0.17	0.05
Total	**1.69**	**14.11**	**15.26**	**0.02**	**0.92**	**0.74**
Architectural Coating						
On-Site[2]	58.10	1.68	1.83	0.00	0.11	0.11
Off-Site[3]	0.29	0.17	2.26	0.01	0.63	0.17
Total	**58.39**	**1.86**	**4.09**	**0.01**	**0.74**	**0.28**
Total of overlapping phases[4]	**64.22**	**45.76**	**50.49**	**0.11**	**6.62**	**3.27**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

Notes:
[1] Source: CalEEMod Version 2016.3.2
[2] On-site emissions from equipment operated on-site that is not operated on public roads.
[3] Off-site emissions from equipment operated on public roads.
[4] Construction, architectural coatings and paving phases may overlap.

6.1.2 Localized Construction Emissions

The data provided in Table 9 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

Table 9: Localized Significance – Construction

Phase	On-Site Pollutant Emissions (pounds/day)[1]			
	NOx	CO	PM10	PM2.5
Grading	28.35	16.29	3.95	2.60
Building Construction	21.08	17.16	1.29	1.21
Paving	14.07	14.65	0.75	0.69
Architectural Coating	1.68	1.83	0.11	0.11
Total of overlapping phases	36.83	33.65	2.15	2.02
SCAQMD Threshold for 25 meters (82 feet) or less[2]	**234**	**1,100**	**7**	**4**
Exceeds Threshold?	No	No	No	No

Notes:
[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for two acres, to be conservative, in Temecula Valley Source Receptor Area (SRA 26). Project will disturb a maximum of 3 acres per day (see Table 7).
[2] The nearest sensitive receptors are located adjacent to the south of the project site, however according to LST methodology any receptor located closer than 25 meters should be based on the 25 meter threshold.

6.1.3 Odors

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are of short-term in nature and the odor emissions are expected cease upon the drying or hardening of the odor producing materials. Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not reach an objectionable level at the nearest sensitive receptors. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project.

The SCAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine whether the project would result in excessive nuisance odors, as defined under the California Code of Regulations and Section 41700 of the California Health and Safety Code, and thus would constitute a public nuisance related to air quality.

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402 no significant impact related to odors would occur during the on-going operations of the proposed project.

6.1.4 Construction-Related Toxic Air Contaminant Impact

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. The Office of Environmental Health Hazard Assessment (OEHHA) has issued the Air Toxic Hot Spots Program Risk Assessment Guidelines and Guidance Manual for the Preparation of Health Risk Assessments, February 2015 to provide a description of the algorithms, recommended exposure variates, cancer and noncancer health values, and the air modeling protocols needed to perform a health risk assessment (HRA) under the Air Toxics Hot Spots Information and Assessment Act of 1987. All substances that are evaluated for cancer risk and/or noncancer acute, 8-hour, and chronic health impacts. In addition,

identify any multipathway substances that present a cancer risk or chronic noncancer hazard via noninhalation routes of exposure.

Given the relatively limited number of heavy-duty construction equipment and construction schedule, the proposed project would not result in a long-term substantial source of toxic air containment emissions and corresponding individual cancer risk. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

6.2 Operational Air Quality Emissions Impact

6.2.1 Regional Operational Emissions

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of CalEEMod model. The operating emissions were based on year 2020, which is the anticipated opening year for the project per the project-specific traffic impact analysis (TJW Engineering, Inc.). The summer and winter emissions created by the proposed project's long-term operations were calculated and the highest emissions from either summer or winter are summarized in Table 10.

Table 10: Regional Significance - Unmitigated Operational Emissions (lbs/day)

Activity	Pollutant Emissions (pounds/day)[1]					
	VOC	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	6.25	3.78	21.21	0.02	0.40	0.40
Energy Usage[3]	0.11	0.94	0.40	0.01	0.08	0.08
Mobile Sources[4]	3.82	27.45	46.10	0.18	12.86	3.55
Total Emissions	**10.18**	**32.17**	**67.71**	**0.21**	**13.33**	**4.02**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Source: CalEEMod Version 2016.3.2
[2] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[3] Energy usage consists of emissions from on-site natural gas usage.
[4] Mobile sources consist of emissions from vehicles and road dust.

Table 10 provides the project's unmitigated operational emissions. Table 10 shows that the project does not exceed the SCAQMD daily emission threshold and regional operational emissions are considered to be less than significant.

6.2.2 Localized Operational Emissions

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

As stated previously, according to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The proposed project is a residential project and does not include such uses. Therefore, due to the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

6.3 CO Hot Spot Emissions

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards which were presented in above in Section 5.0.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above in Section 5.0, a sensitivity analysis is typically conducted to determine the potential for CO "hot spots" at a number of intersections in the general project vicinity. Because of reduced speeds and vehicle queuing, "hot spots" potentially can occur at high traffic volume intersections with a Level of Service E or worse.

Micro-scale air quality emissions have traditionally been analyzed in environmental documents where the air basin was a non-attainment area for CO. However, the SCAQMD has demonstrated in the CO attainment redesignation request to EPA that there are no "hot spots" anywhere in the air basin, even at intersections with much higher volumes, much worse congestion, and much higher background CO levels than anywhere in Riverside County. If the worst-case intersections in the air basin have no "hot spot" potential, any local impacts will be below thresholds.

The traffic study showed that the highest peak hour intersection volume is 2,180 trips per day for the existing plus ambient plus project plus cumulative project PM scenario. The 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. The volume of traffic at project buildout with cumulative projects would be well below 100,000 vehicles and below the necessary volume to even get close to causing a violation of the CO standard. Therefore no CO "hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

6.4 Cumulative Regional Air Quality Impacts

Cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered, would cover an even larger area. Accordingly, the cumulative analysis for the project's air quality must be generic by nature.

The project area is out of attainment for both ozone and PM10 particulate matter. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air cell will be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. The project does not exceed any of the thresholds of significance and therefore is considered less than significant.

6.5 Air Quality Compliance

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP in 2016 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

A. Criterion 1 - Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air Analysis, neither short-term construction impacts, nor long-term operations will result in significant impacts based on the SCAQMD regional and local thresholds of significance.

Therefore, the proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

B. Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2016-2040 Regional Transportation/Sustainable Communities Strategy, prepared by SCAG, 2016, includes chapters on: the challenges in a changing region, creating a plan for our future, and the road to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this project, the City of Murrieta Land Use Plan defines the assumptions that are represented in the AQMP.

The proposed project is currently zoned as Neighborhood Commercial and classified as General Commercial in the City of Murrieta General Plan. The project includes a Change of Zone to Multi-family Residential 3 and a General Plan Amendment to Multi-family Residential. With the general plan amendment, the proposed development would be consistent with the General Plan land use designation. Therefore, with the general plan amendment, the proposed project would not result in an inconsistency with the land use designation in the City's General Plan. Therefore, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

7.0 Greenhouse Gas Impact Analysis

7.1 Construction Greenhouse Gas Emissions Impact

The greenhouse gas emissions from project construction equipment and worker vehicles are shown in Table 12. The emissions are from all phases of construction. The total construction emissions amortized over a period of 30 years are estimated at 36.04 metric tons of CO_2e per year. Annual CalEEMod output calculations are provided in Appendix B.

Table 12: Construction Greenhouse Gas Emissions

Activity	Emissions ($MTCO_2e$)[1]		
	Onsite	Offsite	Total
Grading	36.3	1.9	38.2
Building Construction[2]	353.7	649.9	1,003.6
Paving	27.3	1.9	29.1
Coating	3.5	7.0	10.4
Total	420.7	660.6	1,081.3
Averaged over 30 years[3]	14	22	36.04

Notes:
1. $MTCO_2e$=metric tons of carbon dioxide equivalents (includes carbon dioxide, methane and nitrous oxide).
2. Building construction is estimated to last less than a year.
3. The emissions are averaged over 30 years because the average is added to the operational emissions, pursuant to SCAQMD.
* CalEEMod output (Appendix B)

7.2 Operational Greenhouse Gas Emissions Impact

Operational emissions occur over the life of the project. The unmitigated operational emissions for the project are 3,685.05 metric tons of CO_2e per year resulting in 5.41 MTCO2e/SP/year as shown in Table 12. The service population was estimated to be 681 future residents (based on the estimated CalEEMod population for the proposed project). Therefore, the project's GHG emissions exceed both the SCAQMD draft threshold of 3,000 metric tons CO2e per year for all land uses and the SCAQMD 2020 Target Service Population threshold of 4.8 MTCO2e/SP/year, mitigation is required.

<Table 13 next page>

Table 12: Opening Year Unmitigated Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)[1]					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[2]	0.00	55.45	55.45	0.00	0.00	55.85
Energy Usage[3]	0.00	566.37	566.37	0.02	0.01	568.86
Mobile Sources[4]	0.00	2,845.12	2,845.12	0.15	0.00	2,848.84
Solid Waste[5]	22.22	0.00	22.22	1.31	0.00	55.06
Water[6]	4.92	98.94	103.86	0.51	0.01	120.40
Construction[7]	0.00	22.75	22.75	0.00	0.00	36.04
Total Emissions	27.14	3,588.62	3,615.76	2.00	0.02	**3,685.05**
SCAQMD Draft Screening Threshold						**3,000**
Exceeds Threshold?						**Yes**
SCAQMD 2020 Target Service Population Threshold 4.8 MTCO2e/SP/Year for projects						**5.41**
Exceeds Threshold?						**Yes**

Notes:
[1] Source: CalEEMod Version 2016.3.2
[2] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
[3] Energy usage consist of GHG emissions from electricity and natural gas usage.
[4] Mobile sources consist of GHG emissions from vehicles.
[5] Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[6] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[7] Construction GHG emissions based on a 30 year amortization rate.

The data provided in Table 13 shows that the proposed project's mitigated emissions would be reduced to 2,978.99 $MTCO_2e$ per year resulting in 4.37 MTCO2e/SP/year. As shown in Table 13, with incorporation of Mitigation Measures 1 through 3, which require the project to use high-efficiency lighting as well as comply Cal Green Standards and AB 341, and incorporation of the CAPCOA-based land use and site enhancement reduction measures: LUT-1 Increased Density and LUT-5 Increase Transit Accessibility (please see CalEEMod annual output for details), the proposed project's emissions would no longer exceed the SCAQMD draft threshold of 3,000 metric tons CO2e per year for all land uses or the tier 4 SCAQMD 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year. Therefore, with incorporation of mitigation, the proposed project's GHG emissions are considered to be less than significant.

<Table 13, next page>

Table 13: Opening Year Mitigated Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)[1]					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[2]	0.00	55.45	55.45	0.00	0.00	55.85
Energy Usage[3]	0.00	545.47	545.47	0.02	0.01	547.89
Mobile Sources[4]	0.00	2,218.89	2,218.89	0.13	0.00	2,222.17
Solid Waste[5]	5.56	0.00	5.56	0.33	0.00	13.76
Water[6]	3.94	86.07	90.01	0.41	0.01	103.27
Construction[7]	0.00	22.75	22.75	0.00	0.00	36.04
Total Emissions	9.49	2,928.64	2,938.13	0.89	0.02	**2,978.99**
SCAQMD Draft Screening Threshold						**3,000**
Exceeds Threshold?						**No**
SCAQMD 2020 Target Service Population Threshold 4.8 MTCO2e/SP/Year for projects						**4.37**
Exceeds Threshold?						**No**

Notes:
[1] Source: CalEEMod Version 2016.3.2
[2] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.
[3] Energy usage consist of GHG emissions from electricity and natural gas usage.
[4] Mobile sources consist of GHG emissions from vehicles.
[5] Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[6] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[7] Construction GHG emissions based on a 30 year amortization rate.

7.3 Greenhouse Gas Plan Consistency

The proposed project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. As stated previously, the City of Murrieta has a Climate Action Plan; therefore, the project and its GHG emissions have been compared to the goals of the City of Murrieta CAP. The City's CAP includes the emission target to reduce the City's GHG emissions by 15 percent below baseline (year 2009) levels by 2020.

As stated previously, the SCAQMD's tier 3 thresholds used Executive Order S-3-05 goal as the basis for deriving the screening level. The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels
- 2020: Reduce greenhouse gas emissions to 1990 levels
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which was phased in starting in 2012.

Therefore as the project's mitigated emissions meet the threshold for compliance with Executive Order S-3-05, the project's emissions also comply with the goals of AB 32 and the City of Murrieta CAP. Additionally, as the project meets the current interim emissions targets/thresholds established by

SCAQMD, the project would also be on track to meet the reduction target of 40 percent below 1990 levels by 2030 mandated by SB-32. Furthermore, all of the post 2020 reductions in GHG emissions are addressed via regulatory requirements at the State level and the project will be required to comply with these regulations as they come into effect.

At a mitigated level of 2,978.99 MTCO2e per year, the project's GHG emissions do not exceed the SCAQMD draft threshold and is in compliance with the reduction goals of the City of Murrieta CAP, AB-32 and SB-32. Furthermore, with incorporation of mitigation, the project will comply with applicable Green Building Standards and City of Murrieta's policies regarding sustainability (as dictated by the City's General Plan and Climate Action Plan). With incorporation of mitigation, impacts are considered to be less than significant, further analysis is not warranted.

8.0 References

The following references were used in the preparing this analysis.

California Air Pollution Control Officers Association
2009 Health Risk Assessments for Proposed Land Use Projects

California Air Resources Board
2008 Resolution 08-43

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 ARB Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk – Frequently Asked Questions

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2013 Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities

2014 First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB32, the California Global Warming Solutions Act of 2006. May.

2018 Historical Air Quality, Top 4 Summary

City of Murrieta
2011 Murrieta General Plan 2035. July 19.

2011 Climate Action Plan. July 19.

Governor's Office of Planning and Research
2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2009 CEQA Guideline Sections to be Added or Amended

Office of Environmental Health Hazard Assessment
2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

South Coast Air Quality Management District

1993 CEQA Air Quality Handbook

2005 Rule 403 Fugitive Dust
2007 2007 Air Quality Management Plan

2008 Final Localized Significance Threshold Methodology, Revised

2011 Appendix A Calculation Details for CalEEMod

2012 Final 2012 Air Quality Management Plan

2016 Final 2016 Air Quality Management Plan

TJW Engineering, Inc.
2018 MHSR Apartments Traffic Impact Analysis, City of Murrieta, CA. July 13 (Revised January 10, 2019).

Appendix A:

CalEEMod Daily Emission Output

03981803 Murrieta Apartments

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.65	Acre	2.65	115,521.12	0
Other Non-Asphalt Surfaces	2.81	Acre	2.81	122,316.48	0
Other Non-Asphalt Surfaces	0.57	Acre	0.57	24,829.20	0
Apartments Low Rise	238.00	Dwelling Unit	2.34	238,000.00	681

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

03981803 Murrieta Apartments - Riverside-South Coast County, Summer

Project Characteristics -

Land Use - 8.37 gross acres (7.8 net acres) - 238 DUs (bldg footprint ~30% of net ac = 2.34 ac), parking/driveways ~34% of net ac= 2.652 ac, & landscaping ~36% of net ac = 2.808 ac, & remainder open space (~0.57).

Construction Phase - Construction anticipated to start no earlier than July 2019. Per TIA, project to be operational in 2020.

Grading - Site anticipated to be balanced. Site is vacant, no demo needed.

Vehicle Trips - Per TIA, 7.32 trips/DU/day.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Construction Off-road Equipment Mitigation - Off-road Equipment Mitigation - SCAQMD Rule 403 - Fugitive Dust.

Mobile Land Use Mitigation - Site is ~0.06 miles S of RTA Rte 23 stop Murrieta Hot Springs Opp. Eagle Glen Apt. 238 DU/8.37 gross acres = 28.43 DU/acre.

Energy Mitigation - Site to include high efficiency lighting that is at least 34% more efficient than standard.

Water Mitigation - Per CalGreen Stanards, 20% indoor water reduction. Water-efficient irrigation systems.

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	230.00	302.00
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	20.00	27.00
tblFireplaces	NumberGas	202.30	214.20
tblFireplaces	NumberWood	11.90	0.00
tblLandUse	LotAcreage	14.88	2.34
tblVehicleTrips	ST_TR	7.16	7.32
tblVehicleTrips	SU_TR	6.07	7.32
tblVehicleTrips	WD_TR	6.59	7.32
tblWoodstoves	NumberCatalytic	11.90	0.00
tblWoodstoves	NumberNoncatalytic	11.90	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.1404	29.7723	31.1424	0.0770	6.7200	1.3984	8.1184	3.4120	1.2869	4.6985	0.0000	7,685.0509	7,685.0509	0.9340	0.0000	7,706.8513
2020	60.0792	27.0314	29.4992	0.0759	3.5876	1.1759	4.7635	0.9613	1.1060	2.0673	0.0000	7,532.2179	7,532.2179	0.8430	0.0000	7,553.2915
Maximum	**60.0792**	**29.7723**	**31.1424**	**0.0770**	**6.7200**	**1.3984**	**8.1184**	**3.4120**	**1.2869**	**4.6985**	**0.0000**	**7,685.0509**	**7,685.0509**	**0.9340**	**0.0000**	**7,706.8513**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.1404	29.7723	31.1424	0.0770	3.5876	1.3984	4.9557	1.3578	1.2869	2.6443	0.0000	7,685.0509	7,685.0509	0.9340	0.0000	7,706.8513
2020	60.0792	27.0314	29.4992	0.0759	3.5876	1.1759	4.7635	0.9613	1.1060	2.0673	0.0000	7,532.2179	7,532.2179	0.8430	0.0000	7,553.2915
Maximum	**60.0792**	**29.7723**	**31.1424**	**0.0770**	**3.5876**	**1.3984**	**4.9557**	**1.3578**	**1.2869**	**2.6443**	**0.0000**	**7,685.0509**	**7,685.0509**	**0.9340**	**0.0000**	**7,706.8513**

03981803 Murrieta Apartments - Riverside-South Coast County, Summer

	ROG	NOx	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**	**30.39**	**0.00**	**24.55**	**46.97**	**0.00**	**30.36**	**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	6.2492	3.7811	21.2132	0.0237		0.3956	0.3956		0.3956	0.3956	0.0000	4,571.3568	4,571.3568	0.1214	0.0832	4,599.1739
Energy	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560
Mobile	3.8186	27.3395	46.1002	0.1792	12.6976	0.1597	12.8573	3.3978	0.1505	3.5483		18,256.9483	18,256.9483	0.9028		18,279.5181
Total	**10.1773**	**32.0564**	**67.7116**	**0.2089**	**12.6976**	**0.6310**	**13.3285**	**3.3978**	**0.6218**	**4.0196**	**0.0000**	**24,023.0612**	**24,023.0612**	**1.0471**	**0.1051**	**24,080.5480**

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	6.2492	3.7811	21.2132	0.0237		0.3956	0.3956		0.3956	0.3956	0.0000	4,571.3568	4,571.3568	0.1214	0.0832	4,599.1739
Energy	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560
Mobile	3.4999	24.1080	36.4666	0.1396	9.5405	0.1231	9.6637	2.5530	0.1161	2.6690		14,234.9574	14,234.9574	0.7872		14,254.6366
Total	**9.8586**	**28.8249**	**58.0780**	**0.1693**	**9.5405**	**0.5944**	**10.1350**	**2.5530**	**0.5873**	**3.1403**	**0.0000**	**20,001.0703**	**20,001.0703**	**0.9315**	**0.1051**	**20,055.6665**

	ROG	NOx	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	**3.13**	**10.08**	**14.23**	**18.96**	**24.86**	**5.79**	**23.96**	**24.86**	**5.55**	**21.87**	**0.00**	**16.74**	**16.74**	**11.04**	**0.00**	**16.71**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2019	8/6/2019	5	27	
2	Building Construction	Building Construction	8/7/2019	10/1/2020	5	302	
3	Paving	Paving	10/2/2020	11/9/2020	5	27	
4	Architectural Coating	Architectural Coating	11/9/2020	12/15/2020	5	27	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 13.5

Acres of Paving: 6.03

Residential Indoor: 481,950; Residential Outdoor: 160,650; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 15,760 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	282.00	68.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	56.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856		2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**6.5523**	**1.3974**	**7.9497**	**3.3675**	**1.2856**	**4.6531**		**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0826	0.0507	0.6664	1.7100e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		170.6284	170.6284	4.7800e-003		170.7478
Total	**0.0826**	**0.0507**	**0.6664**	**1.7100e-003**	**0.1677**	**1.0300e-003**	**0.1687**	**0.0445**	**9.5000e-004**	**0.0454**		**170.6284**	**170.6284**	**4.7800e-003**		**170.7478**

3.2 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856	0.0000	2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**2.5554**	**1.3974**	**3.9528**	**1.3133**	**1.2856**	**2.5989**	**0.0000**	**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0826	0.0507	0.6664	1.7100e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		170.6284	170.6284	4.7800e-003		170.7478
Total	**0.0826**	**0.0507**	**0.6664**	**1.7100e-003**	**0.1677**	**1.0300e-003**	**0.1687**	**0.0445**	**9.5000e-004**	**0.0454**		**170.6284**	**170.6284**	**4.7800e-003**		**170.7478**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

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

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	0.2265	7.7407	1.4506	0.0179	0.4355	0.0588	0.4943	0.1254	0.0563	0.1816		1,885.6578	1,885.6578	0.1509		1,889.4297
Worker	1.5527	0.9529	12.5280	0.0322	3.1521	0.0195	3.1716	0.8360	0.0179	0.8539		3,207.8129	3,207.8129	0.0898		3,210.0581
Total	**1.7792**	**8.6935**	**13.9786**	**0.0501**	**3.5876**	**0.0783**	**3.6658**	**0.9613**	**0.0742**	**1.0355**		**5,093.4707**	**5,093.4707**	**0.2407**		**5,099.4878**

3.3 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	0.2265	7.7407	1.4506	0.0179	0.4355	0.0588	0.4943	0.1254	0.0563	0.1816		1,885.6578	1,885.6578	0.1509		1,889.4297
Worker	1.5527	0.9529	12.5280	0.0322	3.1521	0.0195	3.1716	0.8360	0.0179	0.8539		3,207.8129	3,207.8129	0.0898		3,210.0581
Total	**1.7792**	**8.6935**	**13.9786**	**0.0501**	**3.5876**	**0.0783**	**3.6658**	**0.9613**	**0.0742**	**1.0355**		**5,093.4707**	**5,093.4707**	**0.2407**		**5,099.4878**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1895	6.9966	1.2800	0.0178	0.4355	0.0398	0.4752	0.1254	0.0381	0.1634		1,872.6583	1,872.6583	0.1405		1,876.1697
Worker	1.4350	0.8487	11.3707	0.0312	3.1521	0.0191	3.1712	0.8360	0.0176	0.8535		3,106.4966	3,106.4966	0.0796		3,108.4873
Total	**1.6246**	**7.8453**	**12.6507**	**0.0490**	**3.5876**	**0.0589**	**3.6464**	**0.9613**	**0.0557**	**1.0170**		**4,979.1549**	**4,979.1549**	**0.2201**		**4,984.6570**

3.3 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1895	6.9966	1.2800	0.0178	0.4355	0.0398	0.4752	0.1254	0.0381	0.1634		1,872.6583	1,872.6583	0.1405		1,876.1697
Worker	1.4350	0.8487	11.3707	0.0312	3.1521	0.0191	3.1712	0.8360	0.0176	0.8535		3,106.4966	3,106.4966	0.0796		3,108.4873
Total	**1.6246**	**7.8453**	**12.6507**	**0.0490**	**3.5876**	**0.0589**	**3.6464**	**0.9613**	**0.0557**	**1.0170**		**4,979.1549**	**4,979.1549**	**0.2201**		**4,984.6570**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.2572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6137**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0451	0.6048	1.6600e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		165.2392	165.2392	4.2400e-003		165.3451
Total	**0.0763**	**0.0451**	**0.6048**	**1.6600e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**165.2392**	**165.2392**	**4.2400e-003**		**165.3451**

3.4 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.2572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6137**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0451	0.6048	1.6600e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		165.2392	165.2392	4.2400e-003		165.3451
Total	**0.0763**	**0.0451**	**0.6048**	**1.6600e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**165.2392**	**165.2392**	**4.2400e-003**		**165.3451**

3.5 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	57.8620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**58.1042**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.2850	0.1685	2.2580	6.1900e-003	0.6260	3.7900e-003	0.6297	0.1660	3.4900e-003	0.1695		616.8929	616.8929	0.0158		617.2883
Total	**0.2850**	**0.1685**	**2.2580**	**6.1900e-003**	**0.6260**	**3.7900e-003**	**0.6297**	**0.1660**	**3.4900e-003**	**0.1695**		**616.8929**	**616.8929**	**0.0158**		**617.2883**

3.5 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	57.8620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**58.1042**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.2850	0.1685	2.2580	6.1900e-003	0.6260	3.7900e-003	0.6297	0.1660	3.4900e-003	0.1695		616.8929	616.8929	0.0158		617.2883
Total	**0.2850**	**0.1685**	**2.2580**	**6.1900e-003**	**0.6260**	**3.7900e-003**	**0.6297**	**0.1660**	**3.4900e-003**	**0.1695**		**616.8929**	**616.8929**	**0.0158**		**617.2883**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.4999	24.1080	36.4666	0.1396	9.5405	0.1231	9.6637	2.5530	0.1161	2.6690		14,234.9574	14,234.9574	0.7872		14,254.6366
Unmitigated	3.8186	27.3395	46.1002	0.1792	12.6976	0.1597	12.8573	3.3978	0.1505	3.5483		18,256.9483	18,256.9483	0.9028		18,279.5181

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,742.16	1,742.16	1742.16	5,953,225	4,473,057
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,742.16	1,742.16	1,742.16	5,953,225	4,473,057

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Other Asphalt Surfaces	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Other Non-Asphalt Surfaces	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560
NaturalGas Unmitigated	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	10155.4	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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		**0.1095**	**0.9359**	**0.3983**	**5.9700e-003**		**0.0757**	**0.0757**		**0.0757**	**0.0757**		**1,194.7562**	**1,194.7562**	**0.0229**	**0.0219**	**1,201.8560**

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					
Apartments Low Rise	10.1554	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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		**0.1095**	**0.9359**	**0.3983**	**5.9700e-003**		**0.0757**	**0.0757**		**0.0757**	**0.0757**		**1,194.7562**	**1,194.7562**	**0.0229**	**0.0219**	**1,201.8560**

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	6.2492	3.7811	21.2132	0.0237		0.3956	0.3956		0.3956	0.3956	0.0000	4,571.3568	4,571.3568	0.1214	0.0832	4,599.1739
Unmitigated	6.2492	3.7811	21.2132	0.0237		0.3956	0.3956		0.3956	0.3956	0.0000	4,571.3568	4,571.3568	0.1214	0.0832	4,599.1739

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	0.4280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.8054					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4158	3.5532	1.5120	0.0227		0.2873	0.2873		0.2873	0.2873	0.0000	4,536.0000	4,536.0000	0.0869	0.0832	4,562.9552
Landscaping	0.6000	0.2279	19.7012	1.0400e-003		0.1083	0.1083		0.1083	0.1083		35.3568	35.3568	0.0345		36.2187
Total	**6.2492**	**3.7811**	**21.2132**	**0.0237**		**0.3956**	**0.3956**		**0.3956**	**0.3956**	**0.0000**	**4,571.3568**	**4,571.3568**	**0.1214**	**0.0832**	**4,599.1739**

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	0.4280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.8054					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4158	3.5532	1.5120	0.0227		0.2873	0.2873		0.2873	0.2873	0.0000	4,536.0000	4,536.0000	0.0869	0.0832	4,562.9552
Landscaping	0.6000	0.2279	19.7012	1.0400e-003		0.1083	0.1083		0.1083	0.1083		35.3568	35.3568	0.0345		36.2187
Total	**6.2492**	**3.7811**	**21.2132**	**0.0237**		**0.3956**	**0.3956**		**0.3956**	**0.3956**	**0.0000**	**4,571.3568**	**4,571.3568**	**0.1214**	**0.0832**	**4,599.1739**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

03981803 Murrieta Apartments

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.65	Acre	2.65	115,521.12	0
Other Non-Asphalt Surfaces	2.81	Acre	2.81	122,316.48	0
Other Non-Asphalt Surfaces	0.57	Acre	0.57	24,829.20	0
Apartments Low Rise	238.00	Dwelling Unit	2.34	238,000.00	681

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 8.37 gross acres (7.8 net acres) - 238 DUs (bldg footprint ~30% of net ac = 2.34 ac), parking/driveways ~34% of net ac= 2.652 ac, & landscaping ~36% of net ac = 2.808 ac, & remainder open space (~0.57).

Construction Phase - Construction anticipated to start no earlier than July 2019. Per TIA, project to be operational in 2020.

Grading - Site anticipated to be balanced. Site is vacant, no demo needed.

Vehicle Trips - Per TIA, 7.32 trips/DU/day.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Construction Off-road Equipment Mitigation - Off-road Equipment Mitigation - SCAQMD Rule 403 - Fugitive Dust.

Mobile Land Use Mitigation - Site is ~0.06 miles S of RTA Rte 23 stop Murrieta Hot Springs Opp. Eagle Glen Apt. 238 DU/8.37 gross acres = 28.43 DU/acre.

Energy Mitigation - Site to include high efficiency lighting that is at least 34% more efficient than standard.

Water Mitigation - Per CalGreen Stanards, 20% indoor water reduction. Water-efficient irrigation systems.

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	230.00	302.00
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	20.00	27.00
tblFireplaces	NumberGas	202.30	214.20
tblFireplaces	NumberWood	11.90	0.00
tblLandUse	LotAcreage	14.88	2.34
tblVehicleTrips	ST_TR	7.16	7.32
tblVehicleTrips	SU_TR	6.07	7.32
tblVehicleTrips	WD_TR	6.59	7.32
tblWoodstoves	NumberCatalytic	11.90	0.00
tblWoodstoves	NumberNoncatalytic	11.90	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.1160	29.7883	29.0039	0.0730	6.7200	1.3984	8.1184	3.4120	1.2876	4.6985	0.0000	7,284.6213	7,284.6213	0.9333	0.0000	7,306.5471
2020	60.0717	27.0240	27.5453	0.0720	3.5876	1.1764	4.7639	0.9613	1.1064	2.0678	0.0000	7,142.1788	7,142.1788	0.8484	0.0000	7,163.3882
Maximum	**60.0717**	**29.7883**	**29.0039**	**0.0730**	**6.7200**	**1.3984**	**8.1184**	**3.4120**	**1.2876**	**4.6985**	**0.0000**	**7,284.6213**	**7,284.6213**	**0.9333**	**0.0000**	**7,306.5471**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.1160	29.7883	29.0039	0.0730	3.5876	1.3984	4.9564	1.3578	1.2876	2.6443	0.0000	7,284.6213	7,284.6213	0.9333	0.0000	7,306.5471
2020	60.0717	27.0240	27.5453	0.0720	3.5876	1.1764	4.7639	0.9613	1.1064	2.0678	0.0000	7,142.1788	7,142.1788	0.8484	0.0000	7,163.3882
Maximum	**60.0717**	**29.7883**	**29.0039**	**0.0730**	**3.5876**	**1.3984**	**4.9564**	**1.3578**	**1.2876**	**2.6443**	**0.0000**	**7,284.6213**	**7,284.6213**	**0.9333**	**0.0000**	**7,306.5471**

03981803 Murrieta Apartments - Riverside-South Coast County, Winter

	ROG	NOx	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**	**30.39**	**0.00**	**24.55**	**46.97**	**0.00**	**30.36**	**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	6.2492	3.7811	21.2132	0.0237		0.3956	0.3956		0.3956	0.3956	0.0000	4,571.3568	4,571.3568	0.1214	0.0832	4,599.1739
Energy	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560
Mobile	3.2501	27.4515	39.8776	0.1652	12.6976	0.1611	12.8586	3.3978	0.1519	3.5496		16,852.7048	16,852.7048	0.9269		16,875.8774
Total	**9.6088**	**32.1685**	**61.4890**	**0.1949**	**12.6976**	**0.6323**	**13.3299**	**3.3978**	**0.6231**	**4.0209**	**0.0000**	**22,618.8178**	**22,618.8178**	**1.0712**	**0.1051**	**22,676.9073**

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	6.2492	3.7811	21.2132	0.0237		0.3956	0.3956		0.3956	0.3956	0.0000	4,571.3568	4,571.3568	0.1214	0.0832	4,599.1739
Energy	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560
Mobile	2.9528	24.0597	32.1690	0.1285	9.5405	0.1245	9.6650	2.5530	0.1174	2.6703		13,120.0918	13,120.0918	0.8201		13,140.5940
Total	**9.3115**	**28.7766**	**53.7804**	**0.1582**	**9.5405**	**0.5958**	**10.1363**	**2.5530**	**0.5887**	**3.1416**	**0.0000**	**18,886.2047**	**18,886.2047**	**0.9644**	**0.1051**	**18,941.6239**

	ROG	NOx	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	**3.09**	**10.54**	**12.54**	**18.82**	**24.86**	**5.78**	**23.96**	**24.86**	**5.53**	**21.87**	**0.00**	**16.50**	**16.50**	**9.97**	**0.00**	**16.47**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2019	8/6/2019	5	27	
2	Building Construction	Building Construction	8/7/2019	10/1/2020	5	302	
3	Paving	Paving	10/2/2020	11/9/2020	5	27	
4	Architectural Coating	Architectural Coating	11/9/2020	12/15/2020	5	27	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 13.5

Acres of Paving: 6.03

Residential Indoor: 481,950; Residential Outdoor: 160,650; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 15,760 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	282.00	68.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	56.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856		2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**6.5523**	**1.3974**	**7.9497**	**3.3675**	**1.2856**	**4.6531**		**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0807	0.0525	0.5401	1.5400e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		153.0776	153.0776	4.1500e-003		153.1814
Total	**0.0807**	**0.0525**	**0.5401**	**1.5400e-003**	**0.1677**	**1.0300e-003**	**0.1687**	**0.0445**	**9.5000e-004**	**0.0454**		**153.0776**	**153.0776**	**4.1500e-003**		**153.1814**

3.2 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856	0.0000	2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**2.5554**	**1.3974**	**3.9528**	**1.3133**	**1.2856**	**2.5989**	**0.0000**	**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0807	0.0525	0.5401	1.5400e-003	0.1677	1.0300e-003	0.1687	0.0445	9.5000e-004	0.0454		153.0776	153.0776	4.1500e-003		153.1814
Total	**0.0807**	**0.0525**	**0.5401**	**1.5400e-003**	**0.1677**	**1.0300e-003**	**0.1687**	**0.0445**	**9.5000e-004**	**0.0454**		**153.0776**	**153.0776**	**4.1500e-003**		**153.1814**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

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

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	0.2378	7.7231	1.6866	0.0172	0.4355	0.0595	0.4950	0.1254	0.0570	0.1823		1,815.1827	1,815.1827	0.1676		1,819.3731
Worker	1.5171	0.9864	10.1536	0.0289	3.1521	0.0195	3.1716	0.8360	0.0179	0.8539		2,877.8584	2,877.8584	0.0781		2,879.8106
Total	**1.7549**	**8.7095**	**11.8401**	**0.0461**	**3.5876**	**0.0790**	**3.6665**	**0.9613**	**0.0749**	**1.0362**		**4,693.0411**	**4,693.0411**	**0.2457**		**4,699.1836**

3.3 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	0.2378	7.7231	1.6866	0.0172	0.4355	0.0595	0.4950	0.1254	0.0570	0.1823		1,815.1827	1,815.1827	0.1676		1,819.3731
Worker	1.5171	0.9864	10.1536	0.0289	3.1521	0.0195	3.1716	0.8360	0.0179	0.8539		2,877.8584	2,877.8584	0.0781		2,879.8106
Total	**1.7549**	**8.7095**	**11.8401**	**0.0461**	**3.5876**	**0.0790**	**3.6665**	**0.9613**	**0.0749**	**1.0362**		**4,693.0411**	**4,693.0411**	**0.2457**		**4,699.1836**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1999	6.9600	1.4987	0.0171	0.4355	0.0403	0.4757	0.1254	0.0385	0.1639		1,802.2908	1,802.2908	0.1563		1,806.1983
Worker	1.4054	0.8780	9.1981	0.0280	3.1521	0.0191	3.1712	0.8360	0.0176	0.8535		2,786.8249	2,786.8249	0.0692		2,788.5554
Total	**1.6053**	**7.8380**	**10.6968**	**0.0451**	**3.5876**	**0.0594**	**3.6469**	**0.9613**	**0.0561**	**1.0174**		**4,589.1157**	**4,589.1157**	**0.2255**		**4,594.7537**

3.3 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1999	6.9600	1.4987	0.0171	0.4355	0.0403	0.4757	0.1254	0.0385	0.1639		1,802.2908	1,802.2908	0.1563		1,806.1983
Worker	1.4054	0.8780	9.1981	0.0280	3.1521	0.0191	3.1712	0.8360	0.0176	0.8535		2,786.8249	2,786.8249	0.0692		2,788.5554
Total	**1.6053**	**7.8380**	**10.6968**	**0.0451**	**3.5876**	**0.0594**	**3.6469**	**0.9613**	**0.0561**	**1.0174**		**4,589.1157**	**4,589.1157**	**0.2255**		**4,594.7537**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.2572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6137**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

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	0.0748	0.0467	0.4893	1.4900e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		148.2354	148.2354	3.6800e-003		148.3274
Total	**0.0748**	**0.0467**	**0.4893**	**1.4900e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**148.2354**	**148.2354**	**3.6800e-003**		**148.3274**

3.4 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.2572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6137**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

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	0.0748	0.0467	0.4893	1.4900e-003	0.1677	1.0200e-003	0.1687	0.0445	9.3000e-004	0.0454		148.2354	148.2354	3.6800e-003		148.3274
Total	**0.0748**	**0.0467**	**0.4893**	**1.4900e-003**	**0.1677**	**1.0200e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**148.2354**	**148.2354**	**3.6800e-003**		**148.3274**

3.5 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	57.8620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**58.1042**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.2791	0.1744	1.8266	5.5500e-003	0.6260	3.7900e-003	0.6297	0.1660	3.4900e-003	0.1695		553.4121	553.4121	0.0138		553.7557
Total	**0.2791**	**0.1744**	**1.8266**	**5.5500e-003**	**0.6260**	**3.7900e-003**	**0.6297**	**0.1660**	**3.4900e-003**	**0.1695**		**553.4121**	**553.4121**	**0.0138**		**553.7557**

3.5 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	57.8620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**58.1042**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.2791	0.1744	1.8266	5.5500e-003	0.6260	3.7900e-003	0.6297	0.1660	3.4900e-003	0.1695		553.4121	553.4121	0.0138		553.7557
Total	**0.2791**	**0.1744**	**1.8266**	**5.5500e-003**	**0.6260**	**3.7900e-003**	**0.6297**	**0.1660**	**3.4900e-003**	**0.1695**		**553.4121**	**553.4121**	**0.0138**		**553.7557**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2.9528	24.0597	32.1690	0.1285	9.5405	0.1245	9.6650	2.5530	0.1174	2.6703		13,120.0918	13,120.0918	0.8201		13,140.5940
Unmitigated	3.2501	27.4515	39.8776	0.1652	12.6976	0.1611	12.8586	3.3978	0.1519	3.5496		16,852.7048	16,852.7048	0.9269		16,875.8774

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,742.16	1,742.16	1742.16	5,953,225	4,473,057
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,742.16	1,742.16	1,742.16	5,953,225	4,473,057

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Other Asphalt Surfaces	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Other Non-Asphalt Surfaces	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560
NaturalGas Unmitigated	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	10155.4	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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		**0.1095**	**0.9359**	**0.3983**	**5.9700e-003**		**0.0757**	**0.0757**		**0.0757**	**0.0757**		**1,194.7562**	**1,194.7562**	**0.0229**	**0.0219**	**1,201.8560**

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					
Apartments Low Rise	10.1554	0.1095	0.9359	0.3983	5.9700e-003		0.0757	0.0757		0.0757	0.0757		1,194.7562	1,194.7562	0.0229	0.0219	1,201.8560
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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		**0.1095**	**0.9359**	**0.3983**	**5.9700e-003**		**0.0757**	**0.0757**		**0.0757**	**0.0757**		**1,194.7562**	**1,194.7562**	**0.0229**	**0.0219**	**1,201.8560**

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	6.2492	3.7811	21.2132	0.0237		0.3956	0.3956		0.3956	0.3956	0.0000	4,571.3568	4,571.3568	0.1214	0.0832	4,599.1739
Unmitigated	6.2492	3.7811	21.2132	0.0237		0.3956	0.3956		0.3956	0.3956	0.0000	4,571.3568	4,571.3568	0.1214	0.0832	4,599.1739

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	0.4280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.8054					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4158	3.5532	1.5120	0.0227		0.2873	0.2873		0.2873	0.2873	0.0000	4,536.0000	4,536.0000	0.0869	0.0832	4,562.9552
Landscaping	0.6000	0.2279	19.7012	1.0400e-003		0.1083	0.1083		0.1083	0.1083		35.3568	35.3568	0.0345		36.2187
Total	**6.2492**	**3.7811**	**21.2132**	**0.0237**		**0.3956**	**0.3956**		**0.3956**	**0.3956**	**0.0000**	**4,571.3568**	**4,571.3568**	**0.1214**	**0.0832**	**4,599.1739**

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	0.4280					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.8054					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4158	3.5532	1.5120	0.0227		0.2873	0.2873		0.2873	0.2873	0.0000	4,536.0000	4,536.0000	0.0869	0.0832	4,562.9552
Landscaping	0.6000	0.2279	19.7012	1.0400e-003		0.1083	0.1083		0.1083	0.1083		35.3568	35.3568	0.0345		36.2187
Total	**6.2492**	**3.7811**	**21.2132**	**0.0237**		**0.3956**	**0.3956**		**0.3956**	**0.3956**	**0.0000**	**4,571.3568**	**4,571.3568**	**0.1214**	**0.0832**	**4,599.1739**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B:

CalEEMod Annual Emission Output

03981803 Murrieta Apartments

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.65	Acre	2.65	115,521.12	0
Other Non-Asphalt Surfaces	2.81	Acre	2.81	122,316.48	0
Other Non-Asphalt Surfaces	0.57	Acre	0.57	24,829.20	0
Apartments Low Rise	238.00	Dwelling Unit	2.34	238,000.00	681

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 8.37 gross acres (7.8 net acres) - 238 DUs (bldg footprint ~30% of net ac = 2.34 ac), parking/driveways ~34% of net ac= 2.652 ac, & landscaping ~36% of net ac = 2.808 ac, & remainder open space (~0.57).

Construction Phase - Construction anticipated to start no earlier than July 2019. Per TIA, project to be operational in 2020.

Grading - Site anticipated to be balanced. Site is vacant, no demo needed.

Vehicle Trips - Per TIA, 7.32 trips/DU/day.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Construction Off-road Equipment Mitigation - Off-road Equipment Mitigation - SCAQMD Rule 403 - Fugitive Dust.

Mobile Land Use Mitigation - Site is ~0.06 miles S of RTA Rte 23 stop Murrieta Hot Springs Opp. Eagle Glen Apt. 238 DU/8.37 gross acres = 28.43 DU/acre.

Energy Mitigation - Site to include high efficiency lighting that is at least 34% more efficient than standard.

Water Mitigation - Per CalGreen Stanards, 20% indoor water reduction. Water-efficient irrigation systems.

Waste Mitigation - AB 341 requires each jurisdiction in CA to divert at least 75% of their waste away from landfills by 2020.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	230.00	302.00
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	20.00	27.00
tblFireplaces	NumberGas	202.30	214.20
tblFireplaces	NumberWood	11.90	0.00
tblLandUse	LotAcreage	14.88	2.34
tblVehicleTrips	ST_TR	7.16	7.32
tblVehicleTrips	SU_TR	6.07	7.32
tblVehicleTrips	WD_TR	6.59	7.32
tblWoodstoves	NumberCatalytic	11.90	0.00
tblWoodstoves	NumberNoncatalytic	11.90	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2454	1.9556	1.7725	4.3200e-003	0.2760	0.0907	0.3667	0.0958	0.0850	0.1807	0.0000	390.3081	390.3081	0.0529	0.0000	391.6301
2020	1.1661	2.8916	3.0065	7.6400e-003	0.3582	0.1276	0.4857	0.0961	0.1199	0.2159	0.0000	687.5659	687.5659	0.0845	0.0000	689.6771
Maximum	**1.1661**	**2.8916**	**3.0065**	**7.6400e-003**	**0.3582**	**0.1276**	**0.4857**	**0.0961**	**0.1199**	**0.2159**	**0.0000**	**687.5659**	**687.5659**	**0.0845**	**0.0000**	**689.6771**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2454	1.9556	1.7725	4.3200e-003	0.2220	0.0907	0.3127	0.0680	0.0849	0.1530	0.0000	390.3079	390.3079	0.0529	0.0000	391.6299
2020	1.1661	2.8916	3.0065	7.6400e-003	0.3582	0.1276	0.4857	0.0961	0.1199	0.2159	0.0000	687.5656	687.5656	0.0845	0.0000	689.6768
Maximum	**1.1661**	**2.8916**	**3.0065**	**7.6400e-003**	**0.3582**	**0.1276**	**0.4857**	**0.0961**	**0.1199**	**0.2159**	**0.0000**	**687.5656**	**687.5656**	**0.0845**	**0.0000**	**689.6768**

	ROG	NOx	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**	**8.51**	**0.00**	**6.33**	**14.45**	**0.00**	**6.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2019**	**9-30-2019**	1.0766	1.0766
2	**10-1-2019**	**12-31-2019**	1.1140	1.1140
3	**1-1-2020**	**3-31-2020**	0.9993	0.9993
4	**4-1-2020**	**6-30-2020**	1.0002	1.0002
5	**7-1-2020**	**9-30-2020**	1.0112	1.0112
		Highest	1.1140	1.1140

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0353	0.0729	2.4816	4.1000e-004		0.0171	0.0171		0.0171	0.0171	0.0000	55.4468	55.4468	4.9000e-003	9.4000e-004	55.8502
Energy	0.0200	0.1708	0.0727	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	566.3680	566.3680	0.0190	6.7700e-003	568.8620
Mobile	0.5922	5.0826	7.4816	0.0308	2.2732	0.0291	2.3024	0.6091	0.0275	0.6366	0.0000	2,845.1173	2,845.1173	0.1489	0.0000	2,848.8409
Waste						0.0000	0.0000		0.0000	0.0000	22.2235	0.0000	22.2235	1.3134	0.0000	55.0577
Water						0.0000	0.0000		0.0000	0.0000	4.9196	98.9392	103.8588	0.5094	0.0128	120.4003
Total	**1.6475**	**5.3263**	**10.0359**	**0.0323**	**2.2732**	**0.0601**	**2.3333**	**0.6091**	**0.0584**	**0.6675**	**27.1430**	**3,565.8713**	**3,593.0143**	**1.9956**	**0.0205**	**3,649.0110**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0353	0.0729	2.4816	4.1000e-004		0.0171	0.0171		0.0171	0.0171	0.0000	55.4468	55.4468	4.9000e-003	9.4000e-004	55.8502
Energy	0.0200	0.1708	0.0727	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	545.4746	545.4746	0.0181	6.6000e-003	547.8939
Mobile	0.5371	4.4576	6.0008	0.0240	1.7080	0.0225	1.7305	0.4577	0.0212	0.4789	0.0000	2,218.8946	2,218.8946	0.1310	0.0000	2,222.1698
Waste						0.0000	0.0000		0.0000	0.0000	5.5559	0.0000	5.5559	0.3283	0.0000	13.7644
Water						0.0000	0.0000		0.0000	0.0000	3.9356	86.0725	90.0082	0.4078	0.0103	103.2661
Total	**1.5924**	**4.7013**	**8.5550**	**0.0255**	**1.7080**	**0.0534**	**1.7615**	**0.4577**	**0.0521**	**0.5098**	**9.4915**	**2,905.8886**	**2,915.3801**	**0.8902**	**0.0178**	**2,942.9443**

	ROG	NOx	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	**3.34**	**11.73**	**14.76**	**21.05**	**24.86**	**11.05**	**24.51**	**24.86**	**10.73**	**23.63**	**65.03**	**18.51**	**18.86**	**55.39**	**13.03**	**19.35**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2019	8/6/2019	5	27	
2	Building Construction	Building Construction	8/7/2019	10/1/2020	5	302	
3	Paving	Paving	10/2/2020	11/9/2020	5	27	
4	Architectural Coating	Architectural Coating	11/9/2020	12/15/2020	5	27	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 13.5

Acres of Paving: 6.03

Residential Indoor: 481,950; Residential Outdoor: 160,650; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 15,760 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	282.00	68.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	56.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0885	0.0000	0.0885	0.0455	0.0000	0.0455	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0348	0.3827	0.2200	4.0000e-004		0.0189	0.0189		0.0174	0.0174	0.0000	35.9671	35.9671	0.0114	0.0000	36.2515
Total	**0.0348**	**0.3827**	**0.2200**	**4.0000e-004**	**0.0885**	**0.0189**	**0.1073**	**0.0455**	**0.0174**	**0.0628**	**0.0000**	**35.9671**	**35.9671**	**0.0114**	**0.0000**	**36.2515**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	7.3000e-004	7.6800e-003	2.0000e-005	2.2300e-003	1.0000e-005	2.2400e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.9230	1.9230	5.0000e-005	0.0000	1.9243
Total	**1.0100e-003**	**7.3000e-004**	**7.6800e-003**	**2.0000e-005**	**2.2300e-003**	**1.0000e-005**	**2.2400e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.9230**	**1.9230**	**5.0000e-005**	**0.0000**	**1.9243**

3.2 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0345	0.0000	0.0345	0.0177	0.0000	0.0177	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0348	0.3827	0.2200	4.0000e-004		0.0189	0.0189		0.0174	0.0174	0.0000	35.9670	35.9670	0.0114	0.0000	36.2515
Total	**0.0348**	**0.3827**	**0.2200**	**4.0000e-004**	**0.0345**	**0.0189**	**0.0534**	**0.0177**	**0.0174**	**0.0351**	**0.0000**	**35.9670**	**35.9670**	**0.0114**	**0.0000**	**36.2515**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	7.3000e-004	7.6800e-003	2.0000e-005	2.2300e-003	1.0000e-005	2.2400e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.9230	1.9230	5.0000e-005	0.0000	1.9243
Total	**1.0100e-003**	**7.3000e-004**	**7.6800e-003**	**2.0000e-005**	**2.2300e-003**	**1.0000e-005**	**2.2400e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.9230**	**1.9230**	**5.0000e-005**	**0.0000**	**1.9243**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1240	1.1066	0.9011	1.4100e-003		0.0677	0.0677		0.0637	0.0637	0.0000	123.4297	123.4297	0.0301	0.0000	124.1814
Total	**0.1240**	**1.1066**	**0.9011**	**1.4100e-003**		**0.0677**	**0.0677**		**0.0637**	**0.0637**	**0.0000**	**123.4297**	**123.4297**	**0.0301**	**0.0000**	**124.1814**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0121	0.4120	0.0820	9.2000e-004	0.0226	3.1000e-003	0.0257	6.5100e-003	2.9700e-003	9.4700e-003	0.0000	88.3989	88.3989	7.5300e-003	0.0000	88.5872
Worker	0.0735	0.0536	0.5618	1.5600e-003	0.1627	1.0200e-003	0.1638	0.0432	9.4000e-004	0.0442	0.0000	140.5895	140.5895	3.8500e-003	0.0000	140.6856
Total	**0.0856**	**0.4656**	**0.6438**	**2.4800e-003**	**0.1853**	**4.1200e-003**	**0.1894**	**0.0497**	**3.9100e-003**	**0.0536**	**0.0000**	**228.9884**	**228.9884**	**0.0114**	**0.0000**	**229.2728**

3.3 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1240	1.1066	0.9011	1.4100e-003		0.0677	0.0677		0.0637	0.0637	0.0000	123.4296	123.4296	0.0301	0.0000	124.1813
Total	**0.1240**	**1.1066**	**0.9011**	**1.4100e-003**		**0.0677**	**0.0677**		**0.0637**	**0.0637**	**0.0000**	**123.4296**	**123.4296**	**0.0301**	**0.0000**	**124.1813**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0121	0.4120	0.0820	9.2000e-004	0.0226	3.1000e-003	0.0257	6.5100e-003	2.9700e-003	9.4700e-003	0.0000	88.3989	88.3989	7.5300e-003	0.0000	88.5872
Worker	0.0735	0.0536	0.5618	1.5600e-003	0.1627	1.0200e-003	0.1638	0.0432	9.4000e-004	0.0442	0.0000	140.5895	140.5895	3.8500e-003	0.0000	140.6856
Total	**0.0856**	**0.4656**	**0.6438**	**2.4800e-003**	**0.1853**	**4.1200e-003**	**0.1894**	**0.0497**	**3.9100e-003**	**0.0536**	**0.0000**	**228.9884**	**228.9884**	**0.0114**	**0.0000**	**229.2728**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2088	1.8898	1.6596	2.6500e-003		0.1100	0.1100		0.1035	0.1035	0.0000	228.1358	228.1358	0.0557	0.0000	229.5273
Total	**0.2088**	**1.8898**	**1.6596**	**2.6500e-003**		**0.1100**	**0.1100**		**0.1035**	**0.1035**	**0.0000**	**228.1358**	**228.1358**	**0.0557**	**0.0000**	**229.5273**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0190	0.6967	0.1363	1.7200e-003	0.0423	3.9400e-003	0.0462	0.0122	3.7700e-003	0.0160	0.0000	164.6956	164.6956	0.0132	0.0000	165.0247
Worker	0.1277	0.0895	0.9551	2.8300e-003	0.3053	1.8800e-003	0.3072	0.0811	1.7300e-003	0.0828	0.0000	255.4352	255.4352	6.4000e-003	0.0000	255.5951
Total	**0.1467**	**0.7861**	**1.0914**	**4.5500e-003**	**0.3476**	**5.8200e-003**	**0.3534**	**0.0933**	**5.5000e-003**	**0.0988**	**0.0000**	**420.1308**	**420.1308**	**0.0196**	**0.0000**	**420.6198**

3.3 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2088	1.8898	1.6596	2.6500e-003		0.1100	0.1100		0.1035	0.1035	0.0000	228.1356	228.1356	0.0557	0.0000	229.5270
Total	**0.2088**	**1.8898**	**1.6596**	**2.6500e-003**		**0.1100**	**0.1100**		**0.1035**	**0.1035**	**0.0000**	**228.1356**	**228.1356**	**0.0557**	**0.0000**	**229.5270**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0190	0.6967	0.1363	1.7200e-003	0.0423	3.9400e-003	0.0462	0.0122	3.7700e-003	0.0160	0.0000	164.6956	164.6956	0.0132	0.0000	165.0247
Worker	0.1277	0.0895	0.9551	2.8300e-003	0.3053	1.8800e-003	0.3072	0.0811	1.7300e-003	0.0828	0.0000	255.4352	255.4352	6.4000e-003	0.0000	255.5951
Total	**0.1467**	**0.7861**	**1.0914**	**4.5500e-003**	**0.3476**	**5.8200e-003**	**0.3534**	**0.0933**	**5.5000e-003**	**0.0988**	**0.0000**	**420.1308**	**420.1308**	**0.0196**	**0.0000**	**420.6198**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0183	0.1899	0.1978	3.1000e-004		0.0102	0.0102		9.3500e-003	9.3500e-003	0.0000	27.0381	27.0381	8.7400e-003	0.0000	27.2567
Paving	3.4700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0218**	**0.1899**	**0.1978**	**3.1000e-004**		**0.0102**	**0.0102**		**9.3500e-003**	**9.3500e-003**	**0.0000**	**27.0381**	**27.0381**	**8.7400e-003**	**0.0000**	**27.2567**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	6.5000e-004	6.9600e-003	2.0000e-005	2.2300e-003	1.0000e-005	2.2400e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8622	1.8622	5.0000e-005	0.0000	1.8633
Total	**9.3000e-004**	**6.5000e-004**	**6.9600e-003**	**2.0000e-005**	**2.2300e-003**	**1.0000e-005**	**2.2400e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8622**	**1.8622**	**5.0000e-005**	**0.0000**	**1.8633**

3.4 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0183	0.1899	0.1978	3.1000e-004		0.0102	0.0102		9.3500e-003	9.3500e-003	0.0000	27.0381	27.0381	8.7400e-003	0.0000	27.2567
Paving	3.4700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0218**	**0.1899**	**0.1978**	**3.1000e-004**		**0.0102**	**0.0102**		**9.3500e-003**	**9.3500e-003**	**0.0000**	**27.0381**	**27.0381**	**8.7400e-003**	**0.0000**	**27.2567**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	6.5000e-004	6.9600e-003	2.0000e-005	2.2300e-003	1.0000e-005	2.2400e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8622	1.8622	5.0000e-005	0.0000	1.8633
Total	**9.3000e-004**	**6.5000e-004**	**6.9600e-003**	**2.0000e-005**	**2.2300e-003**	**1.0000e-005**	**2.2400e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8622**	**1.8622**	**5.0000e-005**	**0.0000**	**1.8633**

3.5 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7811					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2700e-003	0.0227	0.0247	4.0000e-005		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	3.4469	3.4469	2.7000e-004	0.0000	3.4536
Total	**0.7844**	**0.0227**	**0.0247**	**4.0000e-005**		**1.5000e-003**	**1.5000e-003**		**1.5000e-003**	**1.5000e-003**	**0.0000**	**3.4469**	**3.4469**	**2.7000e-004**	**0.0000**	**3.4536**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4700e-003	2.4300e-003	0.0260	8.0000e-005	8.3100e-003	5.0000e-005	8.3600e-003	2.2100e-003	5.0000e-005	2.2500e-003	0.0000	6.9521	6.9521	1.7000e-004	0.0000	6.9565
Total	**3.4700e-003**	**2.4300e-003**	**0.0260**	**8.0000e-005**	**8.3100e-003**	**5.0000e-005**	**8.3600e-003**	**2.2100e-003**	**5.0000e-005**	**2.2500e-003**	**0.0000**	**6.9521**	**6.9521**	**1.7000e-004**	**0.0000**	**6.9565**

3.5 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7811					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2700e-003	0.0227	0.0247	4.0000e-005		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	3.4469	3.4469	2.7000e-004	0.0000	3.4536
Total	**0.7844**	**0.0227**	**0.0247**	**4.0000e-005**		**1.5000e-003**	**1.5000e-003**		**1.5000e-003**	**1.5000e-003**	**0.0000**	**3.4469**	**3.4469**	**2.7000e-004**	**0.0000**	**3.4536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4700e-003	2.4300e-003	0.0260	8.0000e-005	8.3100e-003	5.0000e-005	8.3600e-003	2.2100e-003	5.0000e-005	2.2500e-003	0.0000	6.9521	6.9521	1.7000e-004	0.0000	6.9565
Total	**3.4700e-003**	**2.4300e-003**	**0.0260**	**8.0000e-005**	**8.3100e-003**	**5.0000e-005**	**8.3600e-003**	**2.2100e-003**	**5.0000e-005**	**2.2500e-003**	**0.0000**	**6.9521**	**6.9521**	**1.7000e-004**	**0.0000**	**6.9565**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5371	4.4576	6.0008	0.0240	1.7080	0.0225	1.7305	0.4577	0.0212	0.4789	0.0000	2,218.8946	2,218.8946	0.1310	0.0000	2,222.1698
Unmitigated	0.5922	5.0826	7.4816	0.0308	2.2732	0.0291	2.3024	0.6091	0.0275	0.6366	0.0000	2,845.1173	2,845.1173	0.1489	0.0000	2,848.8409

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,742.16	1,742.16	1742.16	5,953,225	4,473,057
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,742.16	1,742.16	1,742.16	5,953,225	4,473,057

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Other Asphalt Surfaces	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120
Other Non-Asphalt Surfaces	0.538064	0.038449	0.184390	0.122109	0.017402	0.005339	0.017250	0.067711	0.001365	0.001213	0.004629	0.000959	0.001120

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	347.6694	347.6694	0.0144	2.9700e-003	348.9132
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	368.5628	368.5628	0.0152	3.1500e-003	369.8813
NaturalGas Mitigated	0.0200	0.1708	0.0727	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	197.8053	197.8053	3.7900e-003	3.6300e-003	198.9807
NaturalGas Unmitigated	0.0200	0.1708	0.0727	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	197.8053	197.8053	3.7900e-003	3.6300e-003	198.9807

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.70673e+006	0.0200	0.1708	0.0727	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	197.8053	197.8053	3.7900e-003	3.6300e-003	198.9807
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0200**	**0.1708**	**0.0727**	**1.0900e-003**		**0.0138**	**0.0138**		**0.0138**	**0.0138**	**0.0000**	**197.8053**	**197.8053**	**3.7900e-003**	**3.6300e-003**	**198.9807**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.70673e+006	0.0200	0.1708	0.0727	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	197.8053	197.8053	3.7900e-003	3.6300e-003	198.9807
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0200**	**0.1708**	**0.0727**	**1.0900e-003**		**0.0138**	**0.0138**		**0.0138**	**0.0138**	**0.0000**	**197.8053**	**197.8053**	**3.7900e-003**	**3.6300e-003**	**198.9807**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.15674e+006	368.5628	0.0152	3.1500e-003	369.8813
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**368.5628**	**0.0152**	**3.1500e-003**	**369.8813**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.09117e+006	347.6694	0.0144	2.9700e-003	348.9132
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**347.6694**	**0.0144**	**2.9700e-003**	**348.9132**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0353	0.0729	2.4816	4.1000e-004		0.0171	0.0171		0.0171	0.0171	0.0000	55.4468	55.4468	4.9000e-003	9.4000e-004	55.8502
Unmitigated	1.0353	0.0729	2.4816	4.1000e-004		0.0171	0.0171		0.0171	0.0171	0.0000	55.4468	55.4468	4.9000e-003	9.4000e-004	55.8502

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0781					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8770					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.2000e-003	0.0444	0.0189	2.8000e-004		3.5900e-003	3.5900e-003		3.5900e-003	3.5900e-003	0.0000	51.4374	51.4374	9.9000e-004	9.4000e-004	51.7430
Landscaping	0.0750	0.0285	2.4627	1.3000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	4.0094	4.0094	3.9100e-003	0.0000	4.1071
Total	**1.0353**	**0.0729**	**2.4816**	**4.1000e-004**		**0.0171**	**0.0171**		**0.0171**	**0.0171**	**0.0000**	**55.4468**	**55.4468**	**4.9000e-003**	**9.4000e-004**	**55.8502**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0781					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8770					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.2000e-003	0.0444	0.0189	2.8000e-004		3.5900e-003	3.5900e-003		3.5900e-003	3.5900e-003	0.0000	51.4374	51.4374	9.9000e-004	9.4000e-004	51.7430
Landscaping	0.0750	0.0285	2.4627	1.3000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	4.0094	4.0094	3.9100e-003	0.0000	4.1071
Total	**1.0353**	**0.0729**	**2.4816**	**4.1000e-004**		**0.0171**	**0.0171**		**0.0171**	**0.0171**	**0.0000**	**55.4468**	**55.4468**	**4.9000e-003**	**9.4000e-004**	**55.8502**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	90.0082	0.4078	0.0103	103.2661
Unmitigated	103.8588	0.5094	0.0128	120.4003

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	15.5067 / 9.77594	103.8588	0.5094	0.0128	120.4003
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**103.8588**	**0.5094**	**0.0128**	**120.4003**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	12.4053 / 9.77594	90.0082	0.4078	0.0103	103.2661
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**90.0082**	**0.4078**	**0.0103**	**103.2661**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.5559	0.3283	0.0000	13.7644
Unmitigated	22.2235	1.3134	0.0000	55.0577

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	109.48	22.2235	1.3134	0.0000	55.0577
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**22.2235**	**1.3134**	**0.0000**	**55.0577**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	27.37	5.5559	0.3283	0.0000	13.7644
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**5.5559**	**0.3283**	**0.0000**	**13.7644**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation