APPENDIX B

AIR QUALITY AND GREENHOUSE GAS STUDY

Sycamore Canyon Boulevard Project

Air Quality and Greenhouse Gas Study

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1 Project Description

1.1 Introduction

This report details the analysis of potential air quality and greenhouse gas (GHG) impacts of a proposed commercial development project (project) located off the southbound exit for 30B, Central Avenue, Interstate 215 and SR 60, in the City of Riverside, Riverside County, California. The report has been prepared by Rincon Consultants, Inc. under contract to KA Enterprises for use by the City of Riverside in support of environmental documentation being prepared for the project pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the project's air quality and GHG emissions and associated impacts. The analysis considers both temporary impacts that would result from project construction and potential long-term impacts associated with operation of the project.

1.2 Project Summary

The project site is comprised of three parcels totaling2.19 acres. The site is approximately 790 feet long, 170 feet wide, tapered to a wedge to the north, and a 210-foot base to the south at the corner of Central Avenue and Sycamore Canyon Boulevard. The project site is vacant, and consists of bare dirt and sparse vegetation. The site is bordered to the west by Sycamore Canyon Boulevard, to the east by the Central Avenue off-ramp of I-215/SR-60, and to the south by Central Avenue. Residential development is located approximately 640 feet south and 2,200 feet west of the project site, and hillsides with low density single-family residential development are located to the east of I-215/SR-60. The regional location of the site and existing site conditions are shown in Figure 1 and Figure 2, respectively.

The project entails the construction of a 3,200 square-foot convenience store, one fast food restaurant with a drive-thru (3,800 square feet), a carwash (1,518 square feet), a gas station with six two-sided gas pumps (12 multi-product dispensers) , and 52 vehicle surface parking spaces for all proposed commercial uses. The carwash component includes two additional self-vacuum parking spaces. The project would also include the installation of a Healy clean air separator to hold excess gasoline vapors from the storage tanks. Product throughput for the proposed gas station is estimated at 2.4 million gallons per year (2,150,000 gallons of gasoline, and 250,000 gallons of diesel).

Project features include low-flow plumbing and energy efficient fixtures for all proposed structures per CalGreen (Title 24) standards, and the installation of white roofing to reduce heat absorption. The project also includes the installation of five bioretention ponds along the perimeter of the project site. Primary vehicular access to the project site would be provided by two driveways located along Sycamore Canyon Boulevard. Figure 3 shows the proposed site plan for the project.

Construction would take approximately seven months based on information provided by the project applicant and emissions modeling defaults (described in Section 2.2.1 of this report).

Figure 1 Regional Location

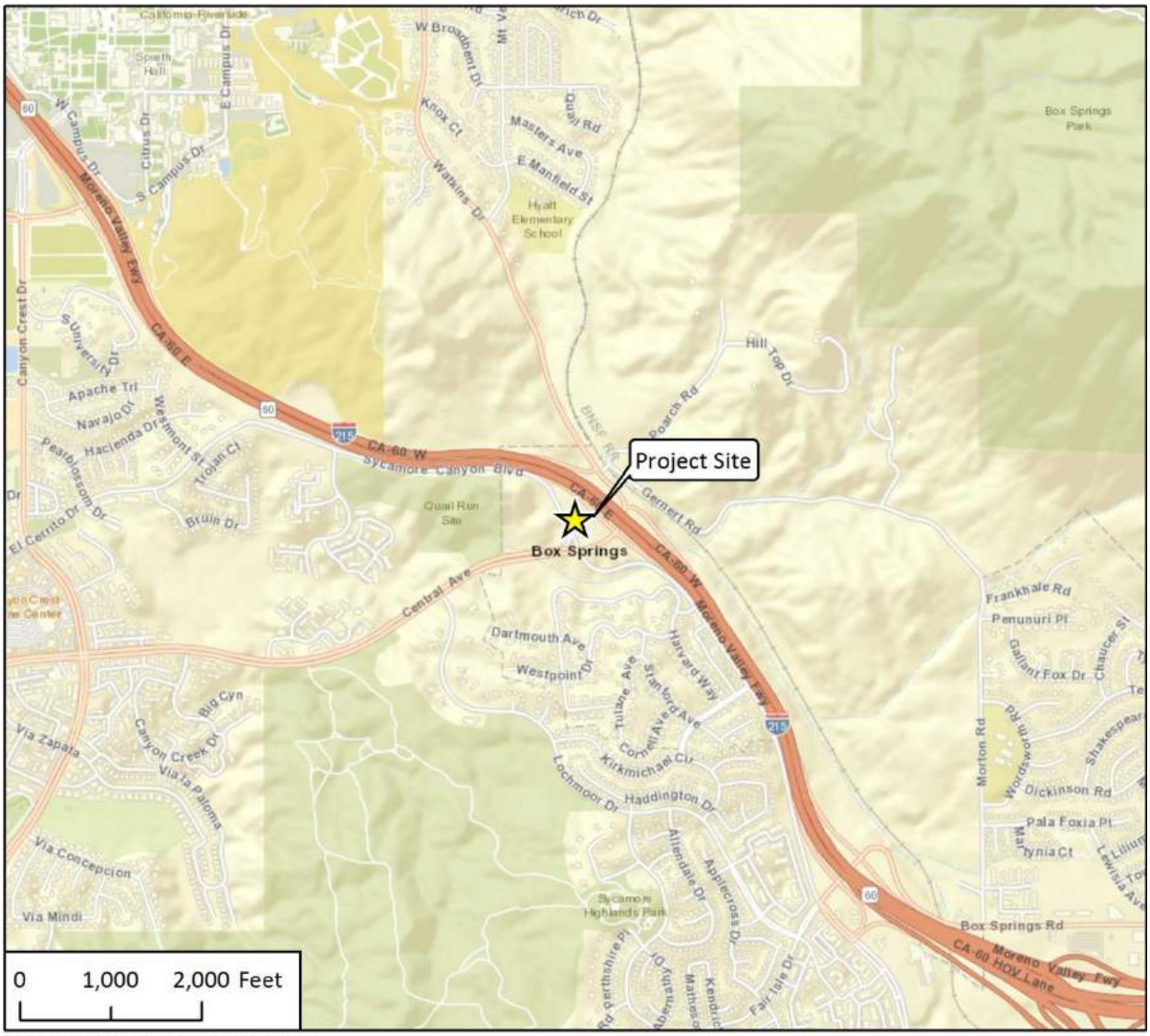

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Figure 2 Project Location

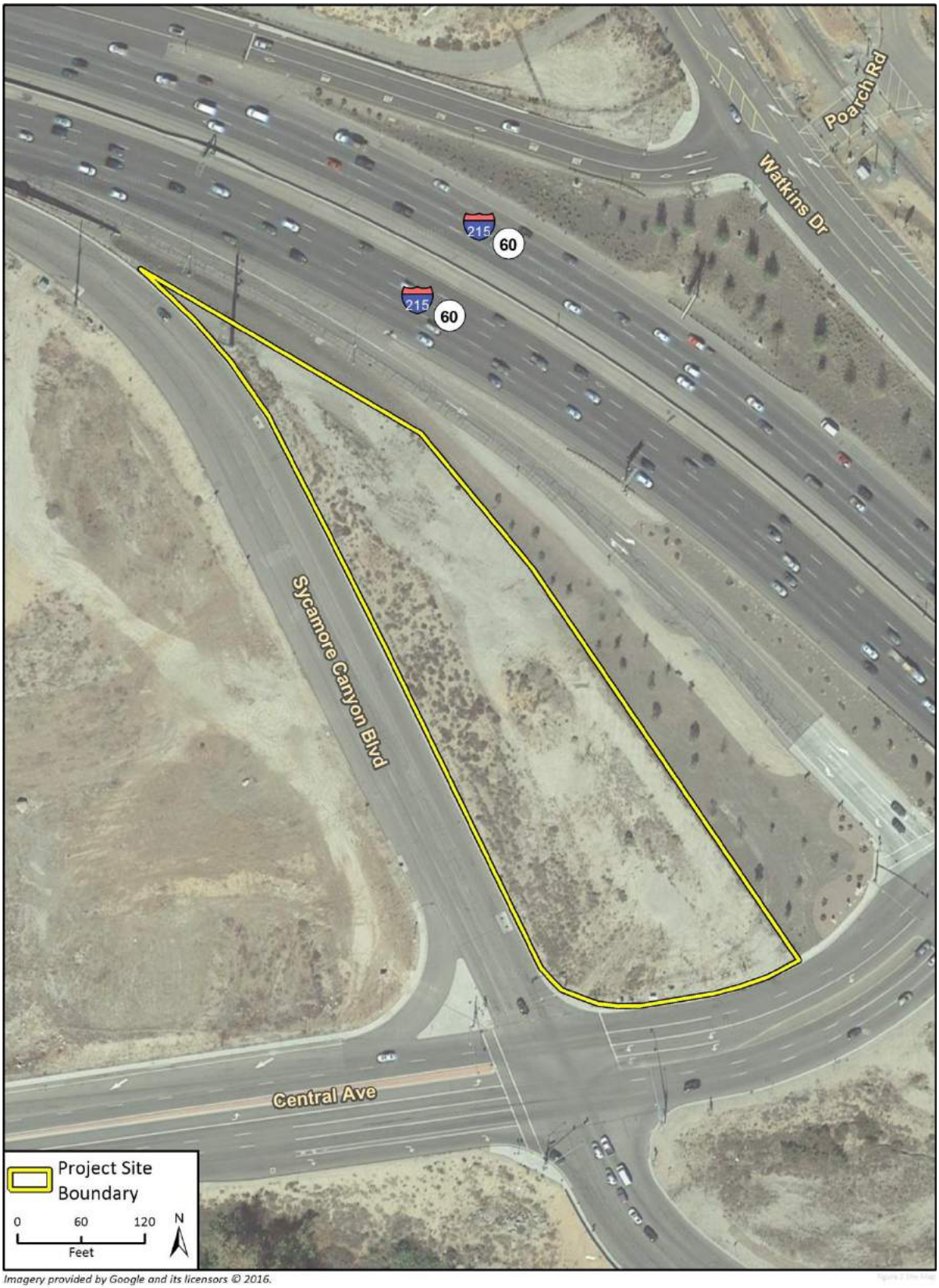
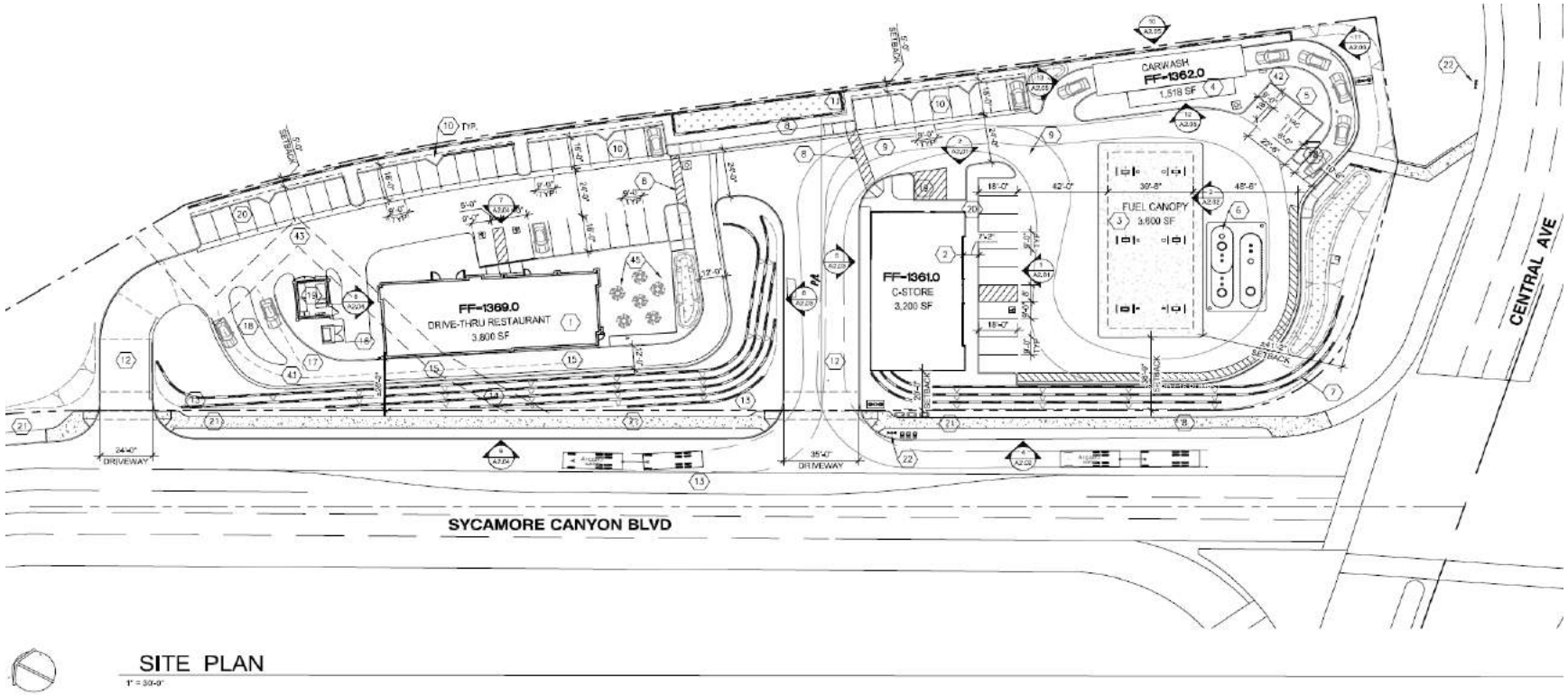


Figure 3 Proposed Site Plan



2 Air Quality

2.1 Background

2.1.1 Local Climate and Meteorology

The project site is within the South Coast Air Basin (SCAB), which is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, and includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The regional climate within the SCAB is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the SCAB is primarily influenced by meteorology and a wide range of emissions sources, such as dense population centers, substantial vehicular traffic, and industry.

Air pollutant emissions within the SCAB are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include residential and commercial water heaters, painting operations, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

2.1.2 Air Quality Regulations

Federal and State Standards for Criteria Pollutants

The federal and state governments have established ambient air quality standards for the protection of public health. The United State Environmental Protection Agency (U.S. EPA) is the federal agency designated to administer air quality regulation, while the Air Resources Board (ARB) is the state equivalent in the California EPA (CalEPA). County-level Air Pollution Control Districts (APCD) provide local management of air quality. The ARB has established air quality standards and is responsible for the control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. The ARB has 14 air basins, including SCAB.

Pursuant to the federal Clean Air Act (CAA) of 1970, the U.S. EPA has set primary national ambient air quality standards (NAAQS) for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with a diameter of up to ten microns (PM_{10}) and up to 2.5 microns ($PM_{2.5}$), and lead (Pb). Primary standards are those levels of air quality deemed necessary, with an adequate margin of safety, to protect public health. In addition, California has established health-based ambient air quality standards for these and other pollutants, some of which are more stringent than the federal standards. Figure 4 lists the current federal and state standards for regulated pollutants.

Figure 4 ARB Ambient Air Quality Standards

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

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

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

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

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

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

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

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

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

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

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

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

12 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.

13 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.

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

15 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.

The USEPA uses data collected at permanent monitoring stations to classify regions as "attainment" or "nonattainment," depending on whether the region meets the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the USEPA.

The USEPA established new national air quality standards for ground-level ozone and fine particulate matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the CAA, as applied in setting the new public health standards for ozone and particulate matter, was unconstitutional and an improper delegation of legislative authority to the USEPA. On February 27, 2001, the U.S. Supreme Court upheld the way the government sets air quality standards under the CAA. The Court unanimously rejected industry arguments that the USEPA must consider financial costs as well as health benefits in writing standards. The justices also rejected arguments that the USEPA took too much lawmaking power from Congress when it set tougher standards for ozone and soot in 1997. Nevertheless, the court dismissed the USEPA's policy for implementing new ozone rules, saying that the agency ignored a section of the law that restricts its authority to enforce such rules.

In April 2003, the White House Office of Management and Budget (OMB) cleared the USEPA to implement the eight-hour ground-level O_3standard. The USEPA issued the proposed rule implementing the eight-hour O_3standard in April 2003. The USEPA completed final eight-hour nonattainment status on April 15, 2004. The USEPA revoked the 1-hour O_3 standard on June 15, 2005, and lowered the eight-hour O_3 standard from 0.08 parts per million (ppm) to 0.075 ppm on April 1, 2008. The USEPA issued the final $PM_{2.5}$ implementation rule in fall 2004. The USEPA lowered the 24-hour $PM_{2.5}$ standard from 65 to 35 micrograms per cubic meter ($\mu g/m^3$) and revoked the annual PM_{10} standard on December 17, 2006. The USEPA issued final designations for the 2006 24-hour $PM_{2.5}$ standard on December 12, 2008.

Characteristics of ozone, CO, NO_2, and suspended particulates are described below.

Ozone

Ozone (O_3) is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_X) and reactive organic gases (ROG[1]). NO_X is formed during the combustion of fuels, while reactive organic gases are formed during combustion and evaporation of organic solvents. Because O_3 requires sunlight to form, it mostly occurs in substantial concentrations between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to O_3 include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide

CO is a local pollutant that is found in high concentrations only near fuel combustion equipment and other sources of CO. The primary source of CO, a colorless, odorless, poisonous gas, is automobile

[1] Organic compound precursors of ozone are routinely described by a number of variations of three terms: hydrocarbons (HC), organic gases (OG), and organic compounds (OC). These terms are often modified by adjectives such as total, reactive, or volatile, and result in a rather confusing array of acronyms: HC, THC (total hydrocarbons), RHC (reactive hydrocarbons), TOG (total organic gases), ROG (reactive organic gases), TOC (total organic compounds), ROC (reactive organic compounds), and VOC (volatile organic compounds). While most of these differ in some significant way from a chemical perspective, from an air quality perspective two groups are important: non-photochemically reactive in the lower atmosphere, or photochemically reactive in the lower atmosphere (HC, RHC, ROG, ROC, and VOC). SCAQMD uses the term VOC to denote organic precursors.

traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes. CO's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulty in people with chronic diseases, reduced lung capacity, and impaired mental abilities.

Nitrogen Dioxide

NO_2 is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. Nitrogen dioxide is an acute irritant. A relationship between NO_2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. NO_2 absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of ozone/smog and acid rain.

Suspended Particulates

Atmospheric particulate matter is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. The particulates that are of particular concern are PM_{10} (which measures no more than 10 microns in diameter) and $PM_{2.5}$, (a fine particulate measuring no more than 2.5 microns in diameter). The characteristics, sources, and potential health effects associated with the small particulates (PM_{10} and $PM_{2.5}$) and $PM_{2.5}$ can be different. Major man-made sources of PM_{10} are agricultural operations, industrial processes, combustion of fossil fuels, construction, demolition operations, and entrainment of road dust into the atmosphere. Natural sources include windblown dust, wildfire smoke, and sea spray salt. The finer $PM_{2.5}$ particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. $PM_{2.5}$ is more likely to penetrate deeply into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

State

In 1967, the California Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board) to establish the CARB. The CARB coordinates and oversees both State and federal air pollution control programs in California. It also oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the USEPA and local air districts. The CARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution.

The CARB identified particulate emissions from diesel-fueled engines (diesel particulate matter, or DPM) as toxic air contaminants (TACs) in August 1998. Following the identification process, CARB was required by law to determine whether there is a need for further control. In September 2000, the CARB adopted the Diesel Risk Reduction Plan (Diesel RRP), which recommends many control measures to reduce the risks associated with DPM and to achieve the goal of 85 percent DPM reduction by 2020.

California Green Building Code

California Green Buildings Standards Code (Cal Green Code) (California Code of Regulations [CCR], Title 24, Part 11) was adopted by the California Building Standards Commission in 2016 and became effective in January 20174. Cal Green Code is comprised of Mandatory Residential and Nonresidential Measures and more stringent Voluntary Measures (TIERs I and II). The Code applies to all new constructed residential, nonresidential, commercial, mixed-use, and State-owned facilities, as well as schools and hospitals. For nonresidential additions and alterations, the Code applies to additions of 1,000 sf or greater, and/or building alterations with a permit valuation of $200,000 or greater. The City of Beverly Hills has adopted the provisions of Cal Green Code by reference in Section 9-1-1101 of the BHMC.

Mandatory Measures are required to be implemented on all new construction projects, as well as qualifying alterations and additions, and consist of a wide array of green measures concerning project site design, water use reduction, improvement of indoor air quality, and conservation of materials and resources. The Voluntary Measures of the Cal Green Building Code for nonresidential buildings, though optional, refer to Title 24, Part 6 compliance with respect to energy efficiency. They encourage 10 percent energy use reduction of outdoor lighting use, and up to a 15 percent reduction in indoor energy use below the baseline required under the California Energy Commission (CEC). These are more stringent than the nonresidential mandatory measures, which only refer to continued adoption of Title 24, Part 6 requirements, and may be used by jurisdictions to enhance their commitment towards green and sustainable design and achievement of Assembly Bill (AB) 32 and Senate Bill (SB) 32 greenhouse gas reduction goals. Other more stringent green measures are also included and encouraged regarding use of on-site renewable energy, escalator and elevator use, and energy efficient steel framing.

Local

Regional Air Quality Management Plan

The SCAQMD and the Southern California Association of Governments (SCAG) are responsible for formulating and implementing the AQMP for the Basin. The SCAB is designated a nonattainment area for the federal and state one-hour and eight-hour ozone standards, the state PM_{10} standard, the federal 24-hour $PM_{2.5}$ standard, and the state and federal annual $PM_{2.5}$ standard (SCAQMD 2016). The SCAB is designated unclassifiable or in attainment for all other federal and state standards. Every three years, the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. The SCAQMD adopted the Final 2012 AQMP on December 7, 2012 and forwarded it to the CARB for review in February 2013. The 2012 AQMP includes the new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches.

The SCAQMD staff has adopted the 2016 AQMP, which is a comprehensive and integrated Plan primarily focused on addressing the ozone standards. The Plan is a regional and multi-agency effort (SCAQMD, CARB, SCAG, and USEPA). State and federal planning requirements include developing control strategies, attainment demonstrations, reasonable further progress, and maintenance plans. The 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including the latest applicable growth assumptions, Regional Transportation Plan/Sustainable Communities Strategy, and updated emission inventory methodologies for various source categories.

The project would be required to comply with SCAQMD Rules 403 and 1113. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. SCAQMD Rule 1113 requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce volatile organic compound emissions from use of coatings. Compliance with Rules 403 and 1113 was included in the CalEEMod emissions inventory.

City of Riverside General Plan 2025

The City of Riverside General Plan 2025 contains an Air Quality Element. The following policies pertaining to air quality are applicable to the proposed project:

> AQ-1.16 – Design safe and efficient vehicular access to commercial land uses from arterial streets to ensure efficient vehicular ingress and egress.
>
> AQ-3.3 – Support SCAQMD's efforts to require stationary air pollution sources, such as gasoline stations, restaurants with charbroilers and deep fat fryers, to comply with or exceed applicable SCAQMD rules and control measures.
>
> AQ-3.4 – Require projects to mitigate, to the extent feasible, anticipated emissions which exceed AQMP Guidelines.
>
> AQ-3.6 – Support "green" building codes that require air conditioning/filtration installation, upgrades or improvements for all buildings, but particular for those associated with sensitive receptors.
>
> AQ-3.7 – Require use of pollution control measures for stationary and area sources through the use of best available control activities, fuel/material substitution, cleaner fuel alternatives, product reformulation, change in work practices and of control measures identified in the latest AQMP.
>
> AQ-4.5 – Require the suspension of all grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour.

2.1.3 Current Air Quality

The SCAQMD operates a network of air quality monitoring stations throughout the SCAB. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and determine whether ambient air quality meets the California and federal standards. The monitoring station located closest to the project site is the Riverside-Rubidoux station, located at 5888 Mission Boulevard in the Rubidoux Community Services District approximately 7.5 miles northwest of the project site. Table 1 indicates the number of days that each standard has been exceeded at the Riverside-Rubidoux station.

Table 1 Ambient Air Quality at the Monitoring Station

Pollutant	2014	2015	2016
8 Hour Ozone (ppm), 8-Hr Average	0.104	0.105	0.104
Number of days of Federal exceedances (>0.070)	66	55	69
Ozone (ppm), Worst Hour	0.141	0.132	0.142

Pollutant	2014	2015	2016
Number of days of State exceedances (>0.09 ppm)	29	31	33
Number of days of Federal exceedances (>0.112 ppm)	1	1	1
Nitrogen Dioxide (ppm) - Worst Hour (Federal Measurements)	59.9	57.4	73.1
Number of days of State exceedances (>.18 ppm)	0	0	0
Number of days of Federal exceedances (0.10 ppm)	0	0	0
Particulate Matter 10 microns, μg/m^3, Worst 24 Hours	100.0	69.0	84.0
Number of days above Federal standard (>150 μg/m^3)	0	0	0
Particulate Matter <2.5 microns, μg/m^3, Worst 24 Hours	48.9	54.7	51.5
Number of days above Federal standard (>35 μg/m^3)	5	9	5

Source: ARB, 2014, 2015, and 2016 Annual Air Quality Data Summaries available at http://www.arb.ca.gov/adam/topfour/topfour1.php.

2.1.4 Air Quality Management Plan

Under state law, the SCAQMD is required to prepare a plan for air quality improvement for pollutants for which the District is in non-compliance. The SCAQMD updates the plan every three years. Each version of the SCAQMD's Air Quality Management Plan (AQMP) updates the previous plan and has a 20-year horizon. The 2016 AQMP was recently adopted on March 3, 2017. The 2016 AQMP incorporates new scientific data and notable regulatory actions that have occurred since adoption of the 2012 AQMP, including the approval of the new federal 8-hour ozone standard of 0.070 ppm that was finalized in 2015.

The 2016 AQMP addresses several state and federal planning requirements and incorporates new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and updated meteorological air quality models. This AQMP builds upon the approaches taken in the 2012 AQMP for the attainment of federal PM and O_3 standards and highlights the significant amount of reductions to be achieved. It emphasizes the need for interagency planning to identify additional strategies to achieve reductions within the timeframes allowed under the federal Clean Air Act, especially in the area of mobile sources. The 2016 AQMP also includes a discussion of emerging issues and opportunities, such as fugitive toxic particulate emissions, zero-emission mobile source control strategies, and the interacting dynamics among climate, energy, and air pollution. The AQMP also includes attainment demonstrations of the new federal 8-hour ozone standard of 0.070 ppm and vehicle miles travelled (VMT) emissions offsets, as per recent U.S. EPA requirements (SCAQMD 2017a).

2.1.5 Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with a margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14, the elderly over 65, persons engaged in strenuous work or exercise, and people with

cardiovascular and chronic respiratory diseases. The majority of sensitive receptor locations are therefore schools, hospitals, and residences.

Sensitive receptors that could potentially be affected by air quality impacts associated with project construction or operation include single- and multi-family residences located approximately 640 feet south and 2,200 feet west of the project site, and hillsides with sparse single-family residential development to the east of I-215/SR-60. The nearest school, Hyatt Elementary School (466 Mt. Vernon Avenue, Riverside, CA 92507) is located approximately 0.5 miles north of the project site. In addition, Seneca Elementary school (11615 Wordsworth Road, Moreno Valley, CA 92557), is located one mile southeast of the project site.

2.2 Impact Analysis

2.2.1 Significance Thresholds and Methodology

Significance Thresholds

Pursuant to Appendix G of the CEQA Guidelines, impacts related to air quality would be significant 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 in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)
d. Expose sensitive receptors to substantial pollutant concentrations
e. Create objectionable odors affecting a substantial number of people

Regional Thresholds

The SCAQMD has adopted numerical thresholds to analyze the significance of a project's construction and operational emissions. These thresholds are applicable to projects where the SCAQMD is the lead agency, but are also recommended for land use projects within the SCAB. These thresholds are designed such that a project consistent with the thresholds would not have an individually or cumulatively significant impact to the SCAB's air quality. Thus, a project that does not exceed these SCAQMD thresholds would have a less than significant impact in regard to items b and c above. These significance thresholds for temporary construction and long-term operational emissions in the SCAB are shown in Table 2.

Table 2 SCAQMD Significance Thresholds

Construction Thresholds	Operational Thresholds
75 pounds per day of ROG	55 pounds per day of ROG
100 pounds per day of NO_X	55 pounds per day of NO_X
550 pounds per day of CO	550 pounds per day of CO
150 pounds per day of PM_{10}	150 pounds per day of SO_X
55 pounds per day of $PM_{2.5}$	150 pounds per day of PM_{10}
	55 pounds per day of $PM_{2.5}$

Source: SCAQMD 2015

Localized Significance Thresholds

In addition to the above thresholds, the SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board's Environmental Justice Enhancement Initiative (1-4), which was prepared to update the *CEQA Air Quality Handbook*. LSTs were devised in response to concern regarding exposure of individuals to criteria pollutants in local communities and have been developed for NO_X, CO, PM_{10} and $PM_{2.5}$. LSTs represent the maximum emissions from a project that will not cause or contribute to an air quality exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in source receptor areas (SRAs) throughout the SCAB, the distance to the nearest sensitive receptor, and the area of the project site that would be under construction at any one time. LSTs have been developed for emissions within construction areas up to five acres in size. However, LSTs only apply to emissions within a fixed stationary location and are not applicable to mobile sources, such as cars on a roadway (SCAQMD 2008). As such, LSTs are typically applied only to construction emissions since the majority of operational emissions are associated with project-generated vehicle trips.

The project site is located in Source Receptor Area 23 (SRA-23), Metropolitan Riverside County (SCAQMD 2008). The project site is approximately 2.19 acres in size and grading would occur across the entire site. LSTs for construction of a two-acre site in SRA-23 are shown in Table 3. The nearest sensitive receptors to the project site are single- and multi-family residences approximately 640 feet to the south and 2,200 feet to the west of the project site. SCAQMD's publication *Final Localized Significant Thresholds (LST) Methodology* (2008) provides construction and operation thresholds for nearest receptors up located up to 1,640 feet (500 meters). The nearest school, Hyatt Elementary School is located approximately 0.5 miles north of the project site.

Air Quality Management Plan Consistency

A project may be inconsistent with the AQMP if it would generate population, housing, or employment growth exceeding forecasts used in the development of the AQMP. The 2016 AQMP relied on local city general plans' and the Southern California Association of Government's (SCAG) 2016 Regional Transportation Plans' (RTP) forecasts of regional population, housing, and employment growth in the 2016 AQMP.

Table 3 SCAQMD LSTs for Construction (SRA-23)

Pollutant	LSTs (lbs/day) for a 2-acre site in SRA-23 for a receptor 640 feet away
Gradual conversion of NO_X to NO_2	379
CO	5,136
PM_{10}	75
$PM_{2.5}$	23

Source: SCAQMD 2009

Methodology

This air quality analysis conforms to the methodologies recommended in the SCAQMD's *CEQA Air Quality Handbook* (1993) and supplementary guidance provided on SCAQMD's website. The project's construction and operational emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod uses project-specific information, including the project's land uses, square footages for different uses (e.g., residential, parking), and location, as well as, model defaults that can be tailored for a specific project to estimate a project's construction and operational emissions.

Construction emissions modeled for the 2.19-acre project site include temporary air pollutant emissions generated during the five following phases: grading, site preparation, construction of the proposed buildings, paving, and architectural coating. Construction emissions results include fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction vehicles and equipment such as backhoes and bulldozers, emissions generated by vehicle trips associated with construction, such as hauling trips and worker travel to and from the project site, and ROGs from architectural coatings.

There are three isolated areas on the project site where blasting may be necessary, though unlikely. These areas include both driveways and locations for the underground gas tanks. CalEEMod defaults have not been adjusted to include blasting activities since the need for blasting has not been definitively confirmed at this time. However, fugitive dust control measures per SCAQMD Rule 403, as discussed below in *Consistency with Applicable Regulatory Requirements*, would apply to controlling and reducing potential dust impacts from blasting activities, should blasting take place.

Operational emissions include mobile source emissions, energy emissions, and area source emissions. Mobile source emissions are generated by motor vehicle trips associated with operation of the project. Emissions attributed to energy use include electricity and natural gas consumption for the kitchen, refrigeration system, and heating and cooling systems. Area source emissions are generated by landscape maintenance equipment, use of consumer products, and painting. Stationary source emissions from fuel storage and dispensing were also calculated based on guidance for underground storage tanks provided by SCAQMD (SCAQMD 2017b). The emissions factor for ROGs/VOCs contained in that guidance were established by the ARB and include emissions from loading, storing, dispensing, and spills or leaks from all components of transfer and dispensing facilities. To determine whether a regional air quality impact would occur, the increase in total emissions is compared to the SCAQMD recommended regional thresholds for operational emissions.

Project emissions were modeled based on a 2.19-acre site with a 3,200 square-foot convenience store, a fast food restaurant with a drive-thru (3,800 square feet), a carwash (1,518 square feet), a gas station with six two-sided gas pumps (12 multi-product dispensers), a total of 52 vehicle parking spaces for all proposed commercial uses, and a product throughput of 2.4 million gallons per year (2,150,000 gallons of gasoline, and 250,000 gallons of diesel). The project is anticipated to be operational in 2020 based on information provided by the project applicant.

Consistency with Applicable Regulatory Requirements

The project would be required to comply with SCAQMD Rules 403 and 1113. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. SCAQMD Rule 1113 requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce volatile organic compound emissions from use of coatings. Compliance with Rules 403 and 1113 was included in the CalEEMod emissions inventory, as discussed below.

The grading phase involves the greatest amount of heavy equipment and the greatest generation of fugitive dust. For the purposes of construction emissions modeling, it was assumed that the project would comply with the SCAQMD Rule 403, which is required to be implemented at all construction sites located within the SCAB. Therefore, the following conditions, which would be required to reduce fugitive dust in compliance with SCAQMD Rule 403, were included in CalEEMod for the site preparation and grading phases of construction.

1. **Minimization of Disturbance**. Construction contractors should minimize the area disturbed by clearing, grading, earth moving, or excavation operations to prevent excessive amounts of dust.
2. **Soil Treatment**. Construction contractors should treat all graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved onsite roadways to minimize fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary, and at least twice daily, preferably in the late morning and after work is done for the day.
3. **Soil Stabilization**. Construction contractors should monitor all graded and/or excavated inactive areas of the construction site at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction, and environmentally safe dust control materials, shall be applied to portions of the construction site that are inactive for over four days. In addition, a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide, shall be utilized to remove bulk material from tires and vehicle undercarriages before vehicles exit the site. If no further grading or excavation operations are planned for the area, the area shall be seeded and watered until landscape growth is evident, or periodically treated with environmentally safe dust suppressants, to prevent excessive fugitive dust.
4. **No Grading During High Winds**. Construction contractors should stop all clearing, grading, earth moving, and excavation operations during periods of high winds (20 miles per hour or greater, as measured continuously over a one-hour period).
5. **Street Sweeping.** Construction contractors should sweep all onsite driveways and adjacent streets and roads at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.

The architectural coating phase involves the greatest release of ROG. The emissions modeling for the project includes the use of low-VOC paint (50 grams per liter [g/L] for non-flat coatings) as required by SCAQMD Rule 1113.

2.2.2 Project Impacts

Temporary Construction Impacts

Table 4 summarizes maximum daily emissions of pollutants throughout the construction period of the project as estimated in CalEEMod. Emissions of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ would not exceed SCAQMD regional thresholds or LSTs during project construction, assuming adherence to the conditions listed above required by SCAQMD Rules 403 and 1113. Therefore, based on the SCAQMD regional thresholds, which are designed to achieve and maintain attainment of federal and State ambient air quality standards, the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Table 4 Estimated Construction Emissions Maximum Daily (lbs/day)

	Maximum Emissions[1]				
Construction Year	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
2019 Maximum[2]	7.4	48.2	30.5	5.2	2.8
SCAQMD Regional Thresholds	75	100	550	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**
Maximum On-site Emissions	2.6	18.9	15.3	1.1	1.0
Localized Significance Thresholds (LSTs) (Onsite only)	N/A	379	5,136	75	23
Threshold Exceeded?	**N/A**	**No**	**No**	**No**	**No**

Notes: All calculations were made using CalEEMod. See Appendix A for model results. Site Preparation, Grading, Paving, Building Construction, and Architectural Coating totals include worker trips, soil export hauling trips, construction vehicle emissions and fugitive dust. Totals may not add up due to rounding. Emission data is pulled from "mitigated" results that include compliance with regulations and project design features that will be included in the project.

[1] Grading phases incorporate anticipated emissions reductions from the conditions listed above, which are required by SCAQMD Rule 403 to reduce fugitive dust. The architectural coating phases incorporate anticipated emissions reductions from the conditions listed above, which are required by Rule 1113.

[2] All emissions results in this table are from the Winter emissions results, with the exception CO emissions and Maximum On-site Emissions, which are from the Summer emissions results.

2.2.3 Long-Term Regional Impacts

Operational Air Pollutant Emissions

Table 5 summarizes estimated emissions associated with operation of the project. The majority of project-related operational emissions would be due to stationary emissions and vehicle trips to and from the site. As shown below, project-generated emissions would not exceed SCAQMD regional thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

The majority of operational emissions generated would be due to stationary source emissions from fuel storage and dispensing, and mobile emissions from vehicle trips to and from the project site. Project trip generation included in the CalEEMod analysis was based on the traffic study completed for the project, which concluded the project would generate a total of 3,248 daily trips after accounting for pass-by trip reductions (Darnell & Associates, Inc. 2017). The project includes the installation of a vapor control device, a Healy clean air separator to hold excess gasoline vapors from the storage tanks. As shown in Table 5, emissions generated during operation of project would not exceed SCAQMD screening level thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$. Therefore, the project's regional air quality impacts would be less than significant.

Table 5 Project Operational Emissions (lbs/day)

	Estimated Emissions[1]					
Emissions Source	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Area	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Stationary[2]	9.5	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	<0.1	0.3	0.3	<0.1	<0.1	<0.1
Mobile	4.4	16.9	31.9	0.1	5.8	1.6
Project Total	**14.0**	**17.2**	**32.2**	**0.1**	**5.8**	**1.6**
SCAQMD Thresholds	55	55	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

See Appendix A for CalEEMod output. Note: Numbers may not add up due to rounding.

[1] All emissions results in this table are from the Winter emissions results, with the exception of ROG mobile emissions, which is from the Summer emissions results.

[2] Calculated for underground storage tanks for gasoline and diesel products, based on SCAQMD's Annual Emissions Reporting Program (SCAQMD 2017b). Emissions of other air pollutants from stationary project emissions are considered negligible.

AQMP Consistency

A project may be inconsistent with the AQMP if it would generate population, housing, or employment growth exceeding the forecasts used in the development of the AQMP. The 2016 AQMP relies on local city general plans' and the Southern California Association of Government's (SCAG) Regional Transportation Plans' (RTP) forecasts of regional population, housing and employment growth in its own projections for managing Basin air quality.

The proposed project involves the construction of a gas station and convenience store with a carwash and one drive-thru fast food restaurant. The project would not provide residential units that would cause a direct increase in the City's population. While the project may provide new employment opportunities in the City of Riverside that could contribute to population growth, this contribution would be negligible. According to an employee density study prepared for SCAG in 2001, non-commercial strip retail centers with contiguous interconnected off-street parking (which is the most applicable land use type for the proposed gas station, convenience store, and carwash) employ on average 12.91 employees per acre. Restaurants have an average density of one employee per 388 square feet. Thus, the proposed project may employ a total of approximately 37

persons[2] (SCAG 2001). According to data provided by the California Department of Finance (DOF), the estimated number employed in the County of Riverside in 2015 was 742,000. In its 2016 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS), SCAG projects that Riverside's number of employees will increase to 1,175,000 by 2040; an increase of 433,000 persons relative to 2015 (SCAG 2015). Based on these estimates, project employment would constitute less than 0.01 percent[3] of projected employment growth. Thus, the level of employment growth associated with the project was anticipated in SCAG's long-term population forecasts, on which the 2016 AQMP was based, and would not exceed official regional employment projections. The project would be consistent with the AQMP.

Carbon Monoxide Hotspot Analysis

A CO hotspot is a localized concentration of CO that is above the state one-hour or eight-hour CO ambient air standards. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal one-hour standard of 35.0 ppm or the state one-hour standard of 20.0 ppm, or the state and federal 8-hour average of 9.0 ppm (ARB 2016). The four highest daily maximum 8-hour carbon monoxide averages were measured at the nearest SCAQMD monitoring station (Riverside-Rubidoux, 5888 Mission Boulevard in the Rubidoux Community Services District) in 2012. The highest 8-hour average was 1.59 ppm, substantially lower than the 9.0 ppm standard. Furthermore, the entire SCAB is in conformance with State and federal CO standards and most air quality monitoring stations no longer report CO levels.

A detailed CO analysis was conducted during the preparation of SCAQMD's 2003 AQMP. The locations selected for microscale modeling in the 2003 AQMP included high average daily traffic (ADT) intersections in the Basin, those which would be expected to experience the highest CO concentrations. The highest CO concentration observed was at the intersection of Wilshire Boulevard and Veteran Avenue on the west side of Los Angeles near the I-405 Freeway. The concentration of CO at this intersection was 4.6 ppm, which is well below the one-hour (35 ppm) CO federal standard. The Wilshire Boulevard/Veteran Avenue intersection has an ADT of approximately 100,000 vehicles per day.

Intersections near the project site accommodate less than 100,000 vehicles per day based on peak hour traffic volumes collected for the project traffic study (Darnell & Associates, Inc. 2017). The project would generate a total of 3,248 trips per day, which would not result in an exceedance of 100,000 vehicle trips for intersections in the vicinity of the project site. According to the project traffic study, existing plus project LOS for studied intersections would remain the same as existing conditions and no studied intersections would be reduced in LOS.

In addition, as shown in Table 5, the project would generate maximum daily CO emissions of approximately 32 pounds, which is well below the SCAQMD threshold of 550 pounds. Based on the low background level of CO in the project area, ever-improving vehicle emissions standards for new cars in accordance with state and federal regulations, and the project's low level of operational CO

[2] Employees for proposed gas station, convenience store, and car wash uses: 12.91 employees/acre x 2.1 acres = 27 employees. Acres adjusted based on fast food restaurant: 2.19 total acres – 0.087 acres for fast food restaurant = 2.1 acres. Employees for proposed fast food restaurant: 3,800 square feet / 388 square feet per employee = 10 employees. Total estimated employees = 27 employees (gas station, convenience store, and car wash) + 10 employees (fast food) = 37 employees.

[3] Percentage of project employment growth: (37 total employees from project) / (433,000 projected 2040 employee increase for City of Riverside) = 0.0085%

emissions, the project would not result in the creation of new hotspots or contribute substantially to existing hotspots.

Odors

The 1993 SCAQMD *CEQA Air Quality Handbook* identifies land uses associated with odor complaints to be agriculture uses, wastewater treatment plants, chemical and food processing plants, composting, refineries, landfills, dairies, and fiberglass molding.

The project would involve the temporary use of diesel-powered construction equipment, which would generate exhaust that may be noticeable for short durations at adjacent properties. However, construction activities would be temporary, sensitive receptors are at least 640 feet from the site, and emissions would not exceed SCAQMD thresholds.

The proposed operation of a convenience store, fast food restaurant, gas station, and carwash are not typically associated with objectionable odors, although odors from fast food preparation and gasoline product could be noticeable in the immediate vicinity of the site. The project site vicinity has sparse development and is adjacent to the I-215 off-ramp and approximately 220 feet from I-215. The nearest potential sensitive receptors are 640 feet or more from the site, and it is unlikely that the odors from the project would be distinguishable from existing sources given the vehicle emissions associated with adjacent roadways in the vicinity of the project site. Furthermore, the project would include the installation of a Healy clean air separator to hold excess gasoline vapors from the underground storage tanks, which would reduce odor impacts. Therefore, the project would not generate objectionable odors that would affect a substantial number of people.

Toxic Air Contaminants (TACs)

A toxic air contaminant (TAC) is defined by California law as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. TACs are primarily regulated through the Tanner Air Toxics Act (Assembly Bill (AB) 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). AB 1807 sets forth a formal procedure for ARB to utilize when designating substances as TACs. This procedure includes pre-designation research, public participation, and scientific peer review. Pursuant to AB 2588, existing facilities that emit air pollutants above specified levels are required to (1) prepare a TAC emissions inventory plan and report; (2) prepare a risk assessment if TAC emissions are significant; (3) notify the public of significant risk levels; and (4) if health impacts are above specified levels, prepare and implement risk reduction measures.

For purposes of CEQA, the preparation of health risk assessments (HRAs) to evaluate the human health-based consequences of TAC emissions for land use development projects may be warranted under two sets of circumstances:

- A proposed project itself generates TACs as a result of construction and/or operational activities that may adversely impact sensitive receptors (e.g., residents), and/or
- A proposed project is located in an area that may adversely expose sensitive receptors associated with its proposed land uses to significant concentrations of TACs from existing stationary and/or mobile sources of TACs (e.g., a fossil-fueled power plant, a high-volume freeway or roadway, a gas station, etc.).

High-volume TAC generators that are listed as potential health risk sources include the operation of commercial diesel engines and truck stops, landfills and incinerators, and chemical manufacturers (ARB 2005). The proposed project includes the construction and operation of a gas station, which is

identified in the ARB *Air Quality and Land Use Handbook* (2005) as a facility type that emits TACs, mainly benzene. Construction activities may also result in the generation of TACs. However, the construction period estimated for the project would be temporary and limited to approximately seven months.

In addition, while gasoline-dispensing facilities account for a small part of the total benzene emissions in the City, near source exposures for large facilities, with throughputs of 3.6 million gallons per year or greater of gasoline, can be significant. The proposed project is estimated to have a total product throughput of 2.4 million gallons per year of gasoline. Facilities with annual throughput of less than 3.6 million gallons of gasoline per year are considered typical facilities and therefore are less than significant.

The ARB recommends avoiding placing large gasoline dispensing facilities within 300 feet of sensitive land uses or typical gasoline dispensing facilities within 50 feet of sensitive land uses, since health risks are drastically reduced with increasing fenceline distance between the pollutant source and receptor (ARB 2005). The center of the proposed gas station area is approximately 640 feet from the property line of the nearest sensitive receptor, which is beyond both the ARB's recommended 300-foot distance for large facilities, and 50-foot distance for typical facilities, such as the project. Therefore, construction and operation of the proposed gas station would not expose residents in the vicinity to substantial pollutant concentrations. Furthermore, construction and operational emissions for the project (Table 4 and Table 5) are well below the SCAQMD's criteria pollutants screening level thresholds, which are designed to be protective of public health.

Mobile emissions during project operations would primarily be comprised of passenger and light-duty vehicles accessing the gas station, convenience store, fast food restaurant, and carwash. The project would not attract a large number of trips from large or heavy-duty vehicles that could generate mobile diesel emissions due to the passenger vehicle-serving nature of the proposed use. The applicant anticipates the project would generate three estimated truck trips to the site per week for delivery of convenience store and restaurant goods, and four estimated truck trips per week for the delivery of petroleum product for distribution purposes. Therefore, construction and operation of the proposed gas station and convenience store would not generate TACs that would adversely impact sensitive receptors in the vicinity of the project site.

2.3 Conclusion

Implementation of the proposed project would not result in any air quality exceedances of applicable short-term construction and long-term operational thresholds, and the project would be consistent with the AQMP. Projects that are consistent with the AQMP have been accounted for in regional, basin-wide emissions projections intended to achieve and maintain attainment with federal and State ambient air quality standards, and are typically assumed not to result in cumulatively considerable impacts to air quality. In addition, the project would not generate impacts related to localized CO hotspots, toxic air contaminants, or odors that would be significant. These impacts are localized to the project site and immediate vicinity, and are therefore not typically cumulative in nature. Therefore, no additional measures beyond those required by SCAQMD rules are needed to reduce project air quality impacts.

3 Greenhouse Gases

3.1 Background

This section analyzes greenhouse gas (GHG) emissions associated with the project and potential impacts related to climate change.

3.1.1 Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. Per the United Nations Intergovernmental Panel on Climate Change (IPCC 2014), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-20th century (IPCC 2014).

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHG because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills.

Man-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6 (California Environmental Protection Agency [CalEPA] 2006). Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO_2e), and is the amount of a GHG emitted multiplied by its GWP. CO_2 has a 100-year GWP of one. By contrast, CH_4 has a GWP of 25, meaning its global warming effect is 25 times greater than CO_2 on a molecule per molecule basis (IPCC 2007).

3.1.2 Greenhouse Gas Emissions Inventory

Worldwide anthropogenic emissions of GHG were approximately 46,000 million metric tons (MMT, or gigatonne) of CO_2e in 2010 (IPCC 2014). CO_2 emissions from fossil fuel combustion and industrial processes contributed about 65 percent of total emissions in 2010. Of anthropogenic GHGs, CO_2 was the most abundant accounting for 76 percent of total 2010 emissions. CH_4 emissions accounted for 16 percent of the 2010 total, while N_2O and fluorinated gases account for 6 and 2 percent respectively (IPCC 2014).

Total U.S. GHG emissions were 6,586.7 million metric tons (MMT or gigatonne) of CO_2e in 2015 (U.S. EPA 2017). Total U.S. emissions have increased by 3.5 percent since 1990; emissions decreased by 2.3 percent from 2014 to 2015 (U.S. EPA 2017). The decrease from 2014 to 2015 was due to was a result of multiple factors, including: (1) substitution from coal to natural gas consumption in the electric power sector; (2) warmer winter conditions in 2015 resulting in a decreased demand for heating fuel in the residential and commercial sectors; and (3) a slight decrease in electricity demand (U.S. EPA 2017). Since 1990, U.S. emissions have increased at an average annual rate of 0.2 percent. In 2015, the industrial and transportation end-use sectors accounted for 29 percent and 27 percent of CO_2 emissions (with electricity-related emissions distributed), respectively. Meanwhile, the residential and commercial end-use sectors accounted for 16 percent and 17 percent of CO_2 emissions, respectively (U.S. EPA 2017).

Based on the ARB California Greenhouse Gas Inventory for 2000-2015, California produced 440.4 MMT of CO_2e in 2015 (ARB 2017c). The major source of GHG in California is transportation, contributing 39 percent of the State's total GHG emissions. Industrial sources are the second largest source of the State's GHG emissions, contributing 23 percent of the state's GHG emissions (ARB 2017c). California emissions are due in part to its large size and large population compared to other states. However, the state's mild climate reduces California's per capita fuel use and GHG emissions as compared to other states. The ARB has projected statewide unregulated GHG emissions for the year 2020 will be 509 MMT CO_2e (ARB 2017c). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions.

3.1.3 Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air, land, and water temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Long-term trends have found that each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The global combined land and ocean temperature data show an increase of about 0.89°C (0.69°C–1.08°C) over the period 1901–2012 and about 0.72°C (0.49°C–0.89°C) over the period 1951–2012 when described by a linear trend. Several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations are in agreement that LSAT, as well as sea surface temperatures, has increased. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2014).

Potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years

(CalEPA 2010). Below is a summary of some of the potential effects that could be experienced in California as a result of climate change.

Air Quality

Higher temperatures, which are conducive to air pollution formation, could worsen air quality in many areas of California. Climate change may increase the concentration of ground-level O_3, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (California Energy Commission 2009).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many Southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR] 2008; California Climate Change Center [CCCC] 2009).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during the state's wet winters and releasing it slowly during the state's dry springs and summers. Based upon historical data and modeling DWR projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050, and 40 to 65 percent by 2100. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR 2008, 2013).

Hydrology and Sea Level Rise

As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. According to The Impacts of Sea-Level Rise on the California Coast, prepared by the CCCC, climate change has the potential to induce substantial sea level rise in the coming century (CCCC 2009). The rising sea level increases the likelihood and risk of flooding. The rate of increase of global mean sea levels over the 2001-2010 decade, as observed by satellites, ocean buoys and land gauges, was approximately 3.2 mm per year, which is double the observed 20th century trend of 1.6 mm per year (World Meteorological Organization [WMO] 2013).

As a result, sea levels averaged over the last decade were about 8 inches higher than those of 1880 (WMO, 2013). Sea levels are rising faster now than in the previous two millennia, and the rise is expected to accelerate, even with robust GHG emission control measures. The most recent IPCC report (2013) predicts a mean sea–level rise of 11-38 inches by 2100. This prediction is more than 50 percent higher than earlier projections of 7-23 inches, when comparing the same emissions scenarios and time periods. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion. In addition, increased CO_2 emissions can cause oceans to acidify due to the carbonic acid it forms. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has a $30 billion annual agricultural industry that produces half of the country's fruits and vegetables. Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (CCCC 2006).

Ecosystems and Wildlife

Climate change and the potential resulting changes in weather patterns could have ecological effects on the local and global levels. Increasing concentrations of GHGs are likely to accelerate the rate and severity of climate change impacts. Scientists project that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) during the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan 2006).

3.1.4 Regulatory Setting

The following regulations address both climate change and GHG emissions.

California Regulations

ARB is responsible for the coordination and oversight of State and local air pollution control programs in California. California has a numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

California Advanced Clean Cars Program

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires ARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, U.S. EPA granted the waiver of Clean Air Act preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year. Pavley I regulates model years from 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" regulates model years from 2017 to 2025. The Advanced Clean Cars program coordinates the goals of the Low Emissions Vehicles

(LEV), Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs, and would provide major reductions in GHG emissions. By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (ARB 2011).

Assembly Bill 32

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "California Global Warming Solutions Act of 2006," signed into law in 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020, and requires ARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires ARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, ARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO_2e. The Scoping Plan was approved by ARB on December 11, 2008, and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since approval of the Scoping Plan.

In May 2014, ARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defines ARB's climate change priorities for the next five years and sets the groundwork to reach post-2020 statewide goals. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use (ARB 2014).

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

Senate Bill 375

Senate Bill (SB) 375, signed in August 2008, enhances the State's ability to reach AB 32 goals by directing ARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles for 2020 and 2035. In addition, SB 375 directs each of the state's 18 major Metropolitan Planning Organizations (MPO) to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On September 23, 2010, ARB adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035.

Senate Bill 32

On September 8, 2016, the governor signed Senate Bill 32 (SB 32) into law, extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other

provisions of AB 32 remain unchanged). The ARB recently adopted a Statewide Scoping Plan that provides a framework for achieving the 2030 greenhouse gas reduction target (ARB 2017d).

For more information on the Senate and Assembly Bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov www.climatechange.ca.gov and www.arb.ca.gov/cc/cc.htm.

California Environmental Quality Act

Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the *State CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted *CEQA Guidelines* provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. To date, a variety of air districts have adopted quantitative significance thresholds for GHGs.

Regional Regulations

As discussed above, SB 375 requires MPOs to prepare an RTP/SCS that will achieve regional emission reductions through sustainable transportation and growth strategies. On September 23, 2010, the ARB adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. SCAG was assigned targets of an 8 percent reduction in GHGs from transportation sources by 2020 and a 13 percent reduction in GHGs from transportation sources by 2035. Most recently, SCAG adopted the 2016-2040 RTP/SCS on April 7, 2016. It includes a number of strategies and objectives to encourage transit-oriented and infill development and use of alternative transportation to minimize vehicle use.

Local Regulations

The Riverside City Council approved the Sustainable Riverside Policy Statement (SRPS) in 2005 and is committed to becoming a greener, more sustainable community. The SRPS emphasizes the implementation of cleaner, greener, and more sustainable programs. Riverside's 38 point Green Action Plan focuses on energy, greenhouse gas emissions, waste reduction, urban design, urban nature, transportation, and water.

The City of Riverside's 2025 General Plan includes policies that ensures that GHG emissions will be reduced in future City of Riverside development and operations. The relevant policies are listed below:

- Policy AQ-8.2: Support appropriate initiatives, legislation, and actions for reducing and responding to climate change.
- Policy AQ-8.3: Encourage community involvement and public-private partnerships to reduce and respond to global warming.
- Policy AQ-2.4: Monitor and strive to achieve performance goals and/or VMT reduction, which are consistent with SCAG's goals.

Additionally, the Western Riverside Council of Governments (WRCOG) completed a subregional climate action plan (CAP) that encompasses twelve cities in the subregion, including Riverside. The CAP sets forth a subregional emissions reduction target, emissions reduction measures, and action steps to reduce GHG emissions and demonstrate consistency with California's Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32). The CAP contains GHG reduction measures organized

into four primary sectors, as follows: energy, transportation and land use, solid waste, and water. If fully implemented, the CAP would exceed WRCOG's 2020 GHG emission reduction goal by 2.1 percent, achieving an overall 17.1 percent reduction in GHG emissions by 2020.

In January 2016, Riverside adopted the *Riverside Restorative Growthprint* (RRG), which combines two plans: the *Economic Prosperity Action Plan* (RRG-EPAP) and the *Climate Action Plan* (RRG-CAP). The RRG-CAP expands upon the subregional CAP and provides a path for the City to achieve reductions in GHG emissions through 2035, while the RRG-EPAP provides a framework for smart growth and low-carbon economic development. The City's baseline GHG emissions inventory (2007) is a benchmark for tracking the City's progress in achieving future reductions. The community-wide inventory identifies the quantity of GHG emissions produced by residents, businesses, and municipal government operations. The inventory reflects the emissions generated within the City that result from the operation of motor vehicles, use of electricity and natural gas, and disposal of solid waste. In 2007, the City's total community-wide emissions were estimated at 3,024,066 MT of CO_2e; while emissions resulting from municipal operations were responsible for approximately 122,525 MT of CO_2e. In 2010, the City conducted a second inventory that indicated the City's emissions had decreased by approximately 13.4 percent over the three year time period. That reduction is largely attributed to the City's actions to reduce the carbon intensity of its electricity portfolio, as supplied by municipally-owned Riverside Public Utilities (RPU). In addition, the City's energy efficiency and renewable energy incentive programs have helped reduce energy use by residential, commercial, and industrial customers; while solid waste diversion efforts have helped decrease emissions that result from landfill disposal.

Through the WRCOG subregional CAP process, the City has committed to a 2020 emissions target of 2,224,908 MT of CO_2e, which is 26.4 percent below the City's 2007 baseline and 15 percent below 2010 emissions. This represents a reduction of 779,304 MT CO_2e from the City's 2020 business-as-usual (BAU) forecast. The City is aiming for a 2035 emissions target of 1,542,274 MT of CO_2e, which is 49 percent below the 2007 baseline and represents a reduction of 2,120,931 MT of CO_2e from the 2035 BAU forecast. Through state and regional measures implemented at the subregional level, the City of Riverside anticipates significant reductions from the City's 2020 and 2035 BAU emissions forecasts (949,572 MT of CO_2e and 1,398,918 MT of CO_2e, respectively).

3.2 Impact Analysis

3.2.1 Significance Thresholds

Pursuant to Appendix G of the *State CEQA Guidelines*, impacts related to GHG emissions from the project would be significant if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the

effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1]).

According to *CEQA Guidelines*, projects can tier off of a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (AEP) in their white paper, *Beyond Newhall and 2020,* to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions (2016). Through the WRCOG subregional CAP process, the City of Riverside has committed to a 2020 emissions target which is 26.4 percent below the City's 2007 baseline and 15 percent below 2010 emissions, and a 2035 emissions target which is 49 percent below the 2007 baseline. However, project-specific GHG significance thresholds are not established under the WRCOG CAP and, thus, tiering off the plan is not currently feasible.

To evaluate whether a project may generate a quantity of GHG emissions that may have a significant impact on the environment, a number of operational bright-line significance thresholds have been developed by state agencies. Significance thresholds are numeric mass emissions thresholds which identify the level at which additional analysis of project GHG emissions is necessary. Projects that attain the significance target, with or without mitigation, would result in less than significant GHG emissions. Many significance thresholds have been developed to reflect a 90 percent capture rate tied to the 2020 reduction target established in AB 32. These targets have been identified by numerous lead agencies (including the WRCOG and the City of Riverside) as appropriate significance screening tools for projects with horizon years before 2020.[4]

Additionally, the AEP white paper, *Beyond Newhall and 2020*, recommends that for projects with a horizon of 2020 or earlier, a threshold based on meeting AB 32 targets should be used (AEP 2016). Thus, projects with horizon years of 2020 or earlier, and emissions below the SCAQMD threshold are not expected to require GHG mitigation for state mandates to be achieved. The project would be fully operational in 2020; therefore, its horizon year is 2020. Although not formally adopted, the SCAQMD has a recommended quantitative threshold of 10,000 MT of CO_2e per year for stationary/industrial project types (SCAQMD 2010). Although not yet adopted, the SCAQMD has recommended a quantitative threshold for projects of all land use types of 3,000 MT CO_2e /year. Note that no air district has the power to establish definitive thresholds that will completely relieve a lead agency of the obligation to determine significance on a case-by-case basis for a specific project. Therefore, the more conservative threshold of 3,000 MT of CO_2e per year is applied in the analysis of the proposed project.

Construction Emissions

The Association of Environmental Professionals (AEP) Climate Change Committee white paper stated that construction emissions can be evaluated in one of two methods (2007).

1. **Using best management practices (BMPs)**. Construction-related emissions would be less than significant if a project implements all feasible BMPs, including alternatively fueled vehicles, reduction of worker trips, and sourcing construction materials from local sources when possible (without substantial cost implications).
2. **Amortizing construction emissions over the operational lifetime**. Construction-related emissions are quantified and amortized over the lifetime of a project. The amortized construction emissions are added to the operational emissions to calculate the total annualized

[4] The horizon year should be defined by the year in which the project is fully operational.

emissions. If the annualized emissions are below quantitative thresholds, GHG emissions would be less than significant.

Option two is used as the threshold in analyzing this project, based on a 30-year amortization of construction emissions from CalEEMod results (Appendix A).

Operational Emissions

As stated above in Section 3.2.1, the AEP white paper, *Beyond Newhall and 2020*, recommends that for projects with a horizon of 2020 or earlier, a threshold based on meeting AB 32 targets should be used (AEP 2016). The SCAQMD has a recommended quantitative threshold of 10,000 MT of CO_2e per year for stationary/industrial project types (SCAQMD 2010). Although not yet adopted, the SCAQMD has recommended a quantitative threshold for projects of all land use types of 3,000 MT CO_2e /year. Note that no air district has the power to establish definitive thresholds that will completely relieve a lead agency of the obligation to determine significance on a case-by-case basis for a specific project. Therefore, the more conservative threshold of 3,000 MT of CO_2e per year is applied in the analysis of operational emissions generated by the proposed project.

3.2.2 Methodology

Calculations of CO_2, CH_4, and N_2O emissions are provided to identify the magnitude and nature of the project's potential GHG emissions and environmental effects. The analysis focuses on CO_2, CH_4, and N_2O because these make up 98.9 percent of all GHG emissions by volume (IPCC 2007) and are the GHG emissions that the project would emit in the largest quantities. Fluorinated gases, such as HFCs, PFCs, and SF_6, were also considered for the analysis. However, because the project is a gas station with convenience store, fast food with drive-thru, and carwash, the quantity of fluorinated gases would not be significant since fluorinated gases are primarily associated with industrial processes. Emissions of all GHGs are converted into their equivalent GWP in MT of CO_2e. Small amounts of other GHGs (such as chlorofluorocarbons [CFCs]) would also be emitted; however, these other GHG emissions would not substantially add to the total GHG emissions. Calculations are based on the methodologies discussed in the California Air Pollution Control Officers Association (CAPCOA) *CEQA and Climate Change* white paper (CAPCOA 2008) and included the use of the California Climate Action Registry (CCAR) General Reporting Protocol (CCAR 2009).

GHG emissions associated with the proposed project were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 (see Appendix A for calculations).

Construction Emissions

Although construction activity is addressed in this analysis, CAPCOA does not discuss whether any of the suggested threshold approaches adequately address impacts from temporary construction activity. As stated in the *CEQA and Climate Change* white paper, "more study is needed to make this assessment or to develop separate thresholds for construction activity" (CAPCOA 2008). Nevertheless, air districts such as the SCAQMD (2011) have recommended amortizing construction-related emissions over a 30-year period in conjunction with the proposed project's operational emissions.

Construction of the project would generate temporary GHG emissions primarily as a result of operation of construction equipment onsite, as well as from vehicles transporting construction workers to and from the project site and heavy trucks to import earth materials onsite. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling.

The project applicant provided the construction schedule, which states construction would commence in June 2019 and would be completed by December 2019 (approximately seven months total). Proposed construction phases and associated durations include the following:

- Site Preparation (two weeks)
- Grading (four weeks)
- Building Construction (20 weeks)
- Architectural Coating (six weeks)
- Paving (seven weeks)

As mentioned under *Methodology*, Emissions associated with the construction period were estimated using the CalEEMod v.2016.3.2 based on the projected maximum amount of equipment that would be used onsite at any given time during construction activities. Complete results from CalEEMod and assumptions can be viewed in Appendix A.

Operational Emissions

CalEEMod calculates operational emissions from the project, which include CO_2, N_2O, and CH_4. Energy-related emissions include emissions from electricity and natural gas use. The emissions factors for natural gas combustion are based on EPA's AP-42 (Compilation of Air Pollutant Emissions Factors) and CCAR. Electricity emissions are calculated by multiplying the energy use times the carbon intensity of the utility district per kilowatt hour (BREEZE Software 2016). The default electricity consumption values in CalEEMod include the CEC-sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies.

Emissions associated with area sources, including consumer products, landscape maintenance, and architectural coating were calculated in CalEEMod and utilize standard emission rates from ARB, U.S. EPA, and district supplied emission factor values (BREEZE Software 2016). Emissions from fuel storage and dispensing were not calculated in CalEEMod and assumed to be negligible based on the incorporation of the Healy clean air separator to hold excess gasoline vapors from the underground storage tanks.

Emissions from waste generation were also calculated in CalEEMod and are based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste (BREEZE Software 2016). Waste disposal rates by land use and overall composition of municipal solid waste in California was primarily based on data provided by the California Department of Resources Recycling and Recovery (CalRecycle).

Emissions from water and wastewater use calculated in CalEEMod were based on the default electricity intensity from the California Energy Commission's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for Southern California.

For mobile sources, CO_2 and CH_4 emissions from vehicle trips to and from the project site were quantified using CalEEMod. Because CalEEMod does not calculate N_2O emissions from mobile sources, N_2O emissions were quantified using the CCAR General Reporting Protocol (CCAR 2009) direct emissions factors for mobile combustion (see Appendix A for calculations). Trip rates in CalEEMod were adjusted based on trip generation numbers from the traffic study completed for the proposed project (Darnell & Associates, Inc. 2017). These trip rates were used to derive total annual project mileage in CalEEMod. Emission rates for N_2O emissions were based on vehicle mix output generated by CalEEMod and the emission factors found in the CCAR General Reporting Protocol.

3.2.3 Project Impacts

The following summarizes project emissions and compares calculated emissions to the SCAQMD's recommended GHG emissions threshold of 3,000 MT CO_2e/year.

Construction Emissions

Per information from the project applicant, it is assumed that construction activity would occur over a period of approximately seven months. As shown in Table 6, construction activity for the project would generate an estimated 245 MT CO_2e. When amortized over a 30-year period, construction of the project would generate about 8.2 MT CO_2e per year.

Table 6 Estimated Construction Emissions of Greenhouse Gases

	Annual Emissions MT CO_2e
Total	245
Amortized over 30 years	**8.2**

See Appendix A for CalEEMod results

Combined Construction, Operational, and Mobile Source Emissions

Table 7 combines the construction, operational, and mobile GHG emissions associated with development of the project. The annual emissions would total approximately 1,694 MT of CO_2e. These emissions do not exceed SCAQMD's significance threshold of 3,000 MT per year for 2020 horizon year projects. Since GHG emissions would not exceed the SCAQMD's threshold, the project would not generate a substantial increase in GHG emissions and would be consistent with AB 32 and SB 32.

Table 7 Combined Annual Emissions MT CO_2e/year

Emission Source	Project Emissions (MT CO_2e)
Construction	8.2
Operational	
Area	<0.1
Energy	223
Solid Waste	34
Water	19
Mobile	
CO_2 and CH_4	1,356
N_2O	54
Total	**1,694**
Threshold	*3,000*
Exceeds Threshold?	No

Source: Calculations were made in CalEEMod, see Appendix A for full model output. Values have been rounded.

Consistency with GHG Reduction Plans and Policies

As discussed under *Local Regulations*, Riverside adopted the *Riverside Restorative Growthprint* (RRG), which combines two plans: the *Economic Prosperity Action Plan* (RRG-EPAP) and the *Climate Action Plan* (RRG-CAP). The RRG-CAP expands upon the subregional CAP and provides a path for the City to achieve reductions in GHG emissions through 2035, while the RRG-EPAP provides a framework for smart growth and low-carbon economic development. The CAP outlines a programmatic approach to review the potential GHG-related impacts associated with new development. Additionally, the City of Riverside's General Plan includes policies to achieve GHG emission reduction, which are summarized under Local Regulations above. The project would be consistent with the General Plan policies; Cal Green Building Standards, which includes measures to reduce emissions; and the RRG-CAP. Table 8 illustrates the project's consistency with relevant goals and strategies embodied in the RRG-CAP.

Table 8 Consistency with Applicable RRG-CAP GHG Emission Reduction Policies

Goal/Measure	Project Consistency
Energy Measures	
E-1: Traffic and Street Lights Replace traffic and street lights with high-efficiency bulbs.	**Not Applicable.** This objective is aimed at government agencies, not private developers, based on the City's strategy to contract with local installers or partner with UC Riverside or local green technology firms to achieve this measure. Nonetheless, the project would comply with applicable Title 24 energy efficiency requirements for project-related energy uses and light fixtures.
Transportation Measures	
T-1: Bicycle Infrastructure Improvements Expand on-street and off-street bicycle infrastructure, including bicycle lanes and bicycle trails.	**Consistent.** Central Avenue, which forms the southern boundary of the project site, contains a Class 2 bike lane. Bike lanes on both sides of Central Avenue are consistent with the bicycle routes shown on the Circulation/Transportation element of the City's General Plan and connect with city wide routes. The project does not include the creation of barriers to existing or additional bike lanes that may be developed in the future.

Goal/Measure	Project Consistency
T-2: Bicycle Parking Provide additional options for bicycle parking.	**Consistent.** The project would comply with Riverside Municipal Code Chapter 10.64 regarding bicycle accommodations.
T-9: Limit Parking Requirements for New Development Reduce requirements for vehicle parking in new development projects.	**Not Applicable.** This objective is aimed at government agencies, not private developers, based on the City's strategy to review parking requirements and incorporate parking reduction techniques during future specific plan and Zoning Code updates. The project would provide 52 parking spaces on site and two additional self-vacuum parking spaces for the carwash operation. The project would comply with applicable City parking requirements, per Chapter 19.580.060 of the Riverside Municipal Code.
T-11: Voluntary Transportation Demand Management Encourage employers to create TDM programs for their employees	**Not Applicable.** Pursuant to Chapter 19.88 of the Riverside Municipal Code, businesses generating one hundred or more employees shall prepare and submit a trip reduction plan to reduce work-related vehicle trips by 6.5 percent from the number of trips related to the project as indicated in the most current edition of the Trip Generation Handbook published by the Institute of Traffic Engineers (ITE). The proposed project would generate approximately 37 total new jobs, and would not be required to create a TDM.
T-19: Alternative Fuel & Vehicle Technology and Infrastructure Promote the use of alternative fueled vehicles such as those powered by electric, natural gas, biodiesel, and fuel cells by Riverside residents and workers.	**Not Applicable.** This objective is aimed at government agencies, not private developers, based on the City's implementation strategy to provide alternative fueling stations in conjunction with other City facilities. The project would go above and beyond current City-wide requirements, if electric vehicle charging stations or alternative fuels were provided.
Water Measure	
W-1: Water Conservation and Efficiency Reduce per capita water use by 20 percent by 2020.	**Consistent.** The proposed structures would be required to be consistent with CalGreen standards. As such, the project would be equipped with low-flow plumbing fixtures that reduce water use, per Title 24.
Solid Waste Measures	
SW-1: Yard Waste Collection Provide green waste collection bins community-wide.	**Consistent.** This objective is aimed at government agencies, not private developers, based on the City's continued provision of green waste collection bins for residential yard waste. Nonetheless, the project would comply with applicable solid waste requirements and ensure that waste from landscape maintenance activities are properly collected and disposed of by the landscape contractor.
SW-2: Food Scrap and Compostable Paper Diversion Divert food and paper waste from landfills by implementing commercial and residential collection program.	**Consistent.** The project would be required to participate in applicable waste diversion programs, and this measure would specifically apply to the fast food restaurant and convenience store operation.

Source: City of Riverside 2016

3.3 Conclusion

The project would increase overall GHG emissions, but the increase would not exceed the recommended SCAQMD threshold, as shown in Table 7. In addition, as shown in Table 8, the project would not conflict with the GHG reduction strategies included in the RRG-CAP. The project would be consistent with applicable land use and zoning designations, would not conflict with any State regulations intended to reduce GHG emissions statewide, would be consistent with applicable plans and programs designed to reduce GHG emissions. Therefore, mitigation is not required.

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AQ/GHG Appendix A

CalEEMod Air Quality and Greenhouse Gas Model Worksheets and N_2O Calculations

Sycamore Canyon Project

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	52.00	Space	1.95	20,800.00	0
Fast Food Restaurant with Drive Thru	3.80	1000sqft	0.09	3,800.00	0
Automobile Care Center	1.52	1000sqft	0.03	1,518.00	0
Convenience Market (24 Hour)	3.20	1000sqft	0.07	3,200.00	0
Gasoline/Service Station	16.00	Pump	0.05	2,258.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2020
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per project site plan

Construction Phase - Per client info

Grading - Per site plans

Architectural Coating - Low VOC paint rul 1113

Vehicle Trips - Per project traffic study; 3248 daily trips all together

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3.00	10.00
tblConstructionPhase	NumDays	6.00	20.00
tblConstructionPhase	NumDays	220.00	100.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	10.00	35.00
tblConstructionPhase	PhaseEndDate	6/5/2019	6/14/2019
tblConstructionPhase	PhaseEndDate	6/13/2019	7/12/2019
tblConstructionPhase	PhaseEndDate	4/16/2020	11/29/2019
tblConstructionPhase	PhaseEndDate	4/30/2020	12/20/2019
tblConstructionPhase	PhaseEndDate	5/14/2020	12/27/2019
tblConstructionPhase	PhaseStartDate	6/6/2019	6/17/2019
tblConstructionPhase	PhaseStartDate	6/14/2019	7/15/2019
tblConstructionPhase	PhaseStartDate	4/17/2020	11/11/2019
tblConstructionPhase	PhaseStartDate	5/1/2020	11/11/2019
tblGrading	AcresOfGrading	10.00	3.00

tblGrading	AcresOfGrading	15.00	4.50
tblLandUse	LandUseSquareFeet	1,520.00	1,518.00
tblLandUse	LotAcreage	0.47	1.95
tblTripsAndVMT	HaulingTripNumber	0.00	1,686.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	863.10	0.00
tblVehicleTrips	ST_TR	722.03	372.11
tblVehicleTrips	ST_TR	168.56	114.63
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	758.45	0.00
tblVehicleTrips	SU_TR	542.72	372.11
tblVehicleTrips	SU_TR	168.56	114.63
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	737.99	0.00
tblVehicleTrips	WD_TR	496.12	372.11
tblVehicleTrips	WD_TR	168.56	114.63

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	0.2492	1.7940	1.2377	2.7400e-003	0.0920	0.0839	0.1759	0.0411	0.0796	0.1206	0.0000	244.2927	244.2927	0.0444	0.0000	245.4035
Maximum	**0.2492**	**1.7940**	**1.2377**	**2.7400e-003**	**0.0920**	**0.0839**	**0.1759**	**0.0411**	**0.0796**	**0.1206**	**0.0000**	**244.2927**	**244.2927**	**0.0444**	**0.0000**	**245.4035**

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	0.2492	1.7940	1.2377	2.7400e-003	0.0528	0.0839	0.1368	0.0206	0.0796	0.1002	0.0000	244.2926	244.2926	0.0444	0.0000	245.4033
Maximum	**0.2492**	**1.7940**	**1.2377**	**2.7400e-003**	**0.0528**	**0.0839**	**0.1368**	**0.0206**	**0.0796**	**0.1002**	**0.0000**	**244.2926**	**244.2926**	**0.0444**	**0.0000**	**245.4033**

	ROG	NOx	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**	**42.58**	**0.00**	**22.26**	**49.79**	**0.00**	**16.96**	**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	6-3-2019	9-2-2019	0.9666	0.9666
2	9-3-2019	9-30-2019	0.2217	0.2217
		Highest	0.9666	0.9666

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0457	1.0000e-005	9.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-003	1.9000e-003	1.0000e-005	0.0000	2.0300e-003
Energy	6.3000e-003	0.0573	0.0481	3.4000e-004		4.3500e-003	4.3500e-003		4.3500e-003	4.3500e-003	0.0000	222.5965	222.5965	4.7000e-003	1.8700e-003	223.2709
Mobile	0.7306	3.1226	5.7757	0.0146	1.0157	0.0158	1.0315	0.2722	0.0148	0.2870	0.0000	1,353.4964	1,353.4964	0.0925	0.0000	1,355.8092
Waste						0.0000	0.0000		0.0000	0.0000	13.7669	0.0000	13.7669	0.8136	0.0000	34.1068
Water						0.0000	0.0000		0.0000	0.0000	0.5539	16.5883	17.1422	0.0573	1.4200e-003	18.9963
Total	**0.7825**	**3.1799**	**5.8248**	**0.0150**	**1.0157**	**0.0201**	**1.0359**	**0.2722**	**0.0191**	**0.2913**	**14.3208**	**1,592.6830**	**1,607.0038**	**0.9681**	**3.2900e-003**	**1,632.1851**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0457	1.0000e-005	9.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-003	1.9000e-003	1.0000e-005	0.0000	2.0300e-003
Energy	6.3000e-003	0.0573	0.0481	3.4000e-004		4.3500e-003	4.3500e-003		4.3500e-003	4.3500e-003	0.0000	222.5965	222.5965	4.7000e-003	1.8700e-003	223.2709
Mobile	0.7306	3.1226	5.7757	0.0146	1.0157	0.0158	1.0315	0.2722	0.0148	0.2870	0.0000	1,353.4964	1,353.4964	0.0925	0.0000	1,355.8092
Waste						0.0000	0.0000		0.0000	0.0000	13.7669	0.0000	13.7669	0.8136	0.0000	34.1068
Water						0.0000	0.0000		0.0000	0.0000	0.4855	14.8986	15.3841	0.0502	1.2400e-003	17.0097
Total	**0.7825**	**3.1799**	**5.8248**	**0.0150**	**1.0157**	**0.0201**	**1.0359**	**0.2722**	**0.0191**	**0.2913**	**14.2523**	**1,590.9934**	**1,605.2457**	**0.9610**	**3.1100e-003**	**1,630.1985**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.48**	**0.11**	**0.11**	**0.73**	**5.47**	**0.12**

3.0 Construction Detail

Construction Phase

Sycamore Canyon Project - South Coast Air Basin, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/3/2019	6/14/2019	5	10	
2	Grading	Grading	6/17/2019	7/12/2019	5	20	
3	Building Construction	Building Construction	7/15/2019	11/29/2019	5	100	
4	Paving	Paving	11/11/2019	12/20/2019	5	30	
5	Architectural Coating	Architectural Coating	11/11/2019	12/27/2019	5	35	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.95

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 16,165; Non-Residential Outdoor: 5,388; Striped Parking Area: 1,248 (Architectural Coating – sqft)

OffRoad Equipment

Sycamore Canyon Project - South Coast Air Basin, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,686.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	13.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7800e-003	0.1077	0.0596	1.2000e-004		4.2700e-003	4.2700e-003		3.9300e-003	3.9300e-003	0.0000	11.0066	11.0066	3.4800e-003	0.0000	11.0937
Total	**8.7800e-003**	**0.1077**	**0.0596**	**1.2000e-004**	**2.3900e-003**	**4.2700e-003**	**6.6600e-003**	**2.6000e-004**	**3.9300e-003**	**4.1900e-003**	**0.0000**	**11.0066**	**11.0066**	**3.4800e-003**	**0.0000**	**11.0937**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.6700e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4081	0.4081	1.0000e-005	0.0000	0.4084
Total	**1.9000e-004**	**1.5000e-004**	**1.6700e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.4081**	**0.4081**	**1.0000e-005**	**0.0000**	**0.4084**

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					9.3000e-004	0.0000	9.3000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7800e-003	0.1077	0.0596	1.2000e-004		4.2700e-003	4.2700e-003		3.9300e-003	3.9300e-003	0.0000	11.0066	11.0066	3.4800e-003	0.0000	11.0937
Total	**8.7800e-003**	**0.1077**	**0.0596**	**1.2000e-004**	**9.3000e-004**	**4.2700e-003**	**5.2000e-003**	**1.0000e-004**	**3.9300e-003**	**4.0300e-003**	**0.0000**	**11.0066**	**11.0066**	**3.4800e-003**	**0.0000**	**11.0937**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.6700e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4081	0.4081	1.0000e-005	0.0000	0.4084
Total	**1.9000e-004**	**1.5000e-004**	**1.6700e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.4081**	**0.4081**	**1.0000e-005**	**0.0000**	**0.4084**

3.3 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					0.0618	0.0000	0.0618	0.0333	0.0000	0.0333	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0203	0.2274	0.1015	2.1000e-004		0.0107	0.0107		9.8700e-003	9.8700e-003	0.0000	18.5179	18.5179	5.8600e-003	0.0000	18.6644
Total	**0.0203**	**0.2274**	**0.1015**	**2.1000e-004**	**0.0618**	**0.0107**	**0.0725**	**0.0333**	**9.8700e-003**	**0.0431**	**0.0000**	**18.5179**	**18.5179**	**5.8600e-003**	**0.0000**	**18.6644**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.3400e-003	0.2593	0.0518	6.6000e-004	0.0145	9.5000e-004	0.0154	3.9800e-003	9.0000e-004	4.8800e-003	0.0000	64.6136	64.6136	4.7500e-003	0.0000	64.7324
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.8000e-004	4.1800e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0203	1.0203	3.0000e-005	0.0000	1.0211
Total	**7.8200e-003**	**0.2597**	**0.0560**	**6.7000e-004**	**0.0156**	**9.6000e-004**	**0.0165**	**4.2700e-003**	**9.1000e-004**	**5.1800e-003**	**0.0000**	**65.6339**	**65.6339**	**4.7800e-003**	**0.0000**	**65.7534**

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					0.0241	0.0000	0.0241	0.0130	0.0000	0.0130	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0203	0.2274	0.1015	2.1000e-004		0.0107	0.0107		9.8700e-003	9.8700e-003	0.0000	18.5179	18.5179	5.8600e-003	0.0000	18.6644
Total	**0.0203**	**0.2274**	**0.1015**	**2.1000e-004**	**0.0241**	**0.0107**	**0.0348**	**0.0130**	**9.8700e-003**	**0.0229**	**0.0000**	**18.5179**	**18.5179**	**5.8600e-003**	**0.0000**	**18.6644**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.3400e-003	0.2593	0.0518	6.6000e-004	0.0145	9.5000e-004	0.0154	3.9800e-003	9.0000e-004	4.8800e-003	0.0000	64.6136	64.6136	4.7500e-003	0.0000	64.7324
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.8000e-004	4.1800e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0203	1.0203	3.0000e-005	0.0000	1.0211
Total	**7.8200e-003**	**0.2597**	**0.0560**	**6.7000e-004**	**0.0156**	**9.6000e-004**	**0.0165**	**4.2700e-003**	**9.1000e-004**	**5.1800e-003**	**0.0000**	**65.6339**	**65.6339**	**4.7800e-003**	**0.0000**	**65.7534**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1279	0.9455	0.7627	1.2500e-003		0.0545	0.0545		0.0523	0.0523	0.0000	104.8772	104.8772	0.0218	0.0000	105.4226
Total	**0.1279**	**0.9455**	**0.7627**	**1.2500e-003**		**0.0545**	**0.0545**		**0.0523**	**0.0523**	**0.0000**	**104.8772**	**104.8772**	**0.0218**	**0.0000**	**105.4226**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.9000e-004	0.0293	7.4600e-003	6.0000e-005	1.5800e-003	1.9000e-004	1.7700e-003	4.5000e-004	1.8000e-004	6.4000e-004	0.0000	6.1556	6.1556	4.3000e-004	0.0000	6.1664
Worker	3.1300e-003	2.5000e-003	0.0271	7.0000e-005	7.1300e-003	6.0000e-005	7.1900e-003	1.8900e-003	5.0000e-005	1.9500e-003	0.0000	6.6316	6.6316	2.1000e-004	0.0000	6.6368
Total	**4.1200e-003**	**0.0318**	**0.0346**	**1.3000e-004**	**8.7100e-003**	**2.5000e-004**	**8.9600e-003**	**2.3400e-003**	**2.3000e-004**	**2.5900e-003**	**0.0000**	**12.7872**	**12.7872**	**6.4000e-004**	**0.0000**	**12.8032**

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	0.1279	0.9455	0.7627	1.2500e-003		0.0545	0.0545		0.0523	0.0523	0.0000	104.8770	104.8770	0.0218	0.0000	105.4225
Total	**0.1279**	**0.9455**	**0.7627**	**1.2500e-003**		**0.0545**	**0.0545**		**0.0523**	**0.0523**	**0.0000**	**104.8770**	**104.8770**	**0.0218**	**0.0000**	**105.4225**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.9000e-004	0.0293	7.4600e-003	6.0000e-005	1.5800e-003	1.9000e-004	1.7700e-003	4.5000e-004	1.8000e-004	6.4000e-004	0.0000	6.1556	6.1556	4.3000e-004	0.0000	6.1664
Worker	3.1300e-003	2.5000e-003	0.0271	7.0000e-005	7.1300e-003	6.0000e-005	7.1900e-003	1.8900e-003	5.0000e-005	1.9500e-003	0.0000	6.6316	6.6316	2.1000e-004	0.0000	6.6368
Total	**4.1200e-003**	**0.0318**	**0.0346**	**1.3000e-004**	**8.7100e-003**	**2.5000e-004**	**8.9600e-003**	**2.3400e-003**	**2.3000e-004**	**2.5900e-003**	**0.0000**	**12.7872**	**12.7872**	**6.4000e-004**	**0.0000**	**12.8032**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0187	0.1885	0.1778	2.7000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	23.7625	23.7625	7.3700e-003	0.0000	23.9468
Paving	2.5500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0212**	**0.1885**	**0.1778**	**2.7000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**23.7625**	**23.7625**	**7.3700e-003**	**0.0000**	**23.9468**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0800e-003	8.6000e-004	9.4000e-003	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	2.2956	2.2956	7.0000e-005	0.0000	2.2974
Total	**1.0800e-003**	**8.6000e-004**	**9.4000e-003**	**3.0000e-005**	**2.4700e-003**	**2.0000e-005**	**2.4900e-003**	**6.6000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2956**	**2.2956**	**7.0000e-005**	**0.0000**	**2.2974**

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	0.0187	0.1885	0.1778	2.7000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	23.7625	23.7625	7.3700e-003	0.0000	23.9468
Paving	2.5500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0212**	**0.1885**	**0.1778**	**2.7000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**23.7625**	**23.7625**	**7.3700e-003**	**0.0000**	**23.9468**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0800e-003	8.6000e-004	9.4000e-003	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	2.2956	2.2956	7.0000e-005	0.0000	2.2974
Total	**1.0800e-003**	**8.6000e-004**	**9.4000e-003**	**3.0000e-005**	**2.4700e-003**	**2.0000e-005**	**2.4900e-003**	**6.6000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2956**	**2.2956**	**7.0000e-005**	**0.0000**	**2.2974**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0528					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0321	0.0322	5.0000e-005		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	4.4682	4.4682	3.8000e-004	0.0000	4.4776
Total	**0.0575**	**0.0321**	**0.0322**	**5.0000e-005**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**4.4682**	**4.4682**	**3.8000e-004**	**0.0000**	**4.4776**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	2.0000e-004	2.1900e-003	1.0000e-005	5.8000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5356	0.5356	2.0000e-005	0.0000	0.5361
Total	**2.5000e-004**	**2.0000e-004**	**2.1900e-003**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**5.8000e-004**	**1.5000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5356**	**0.5356**	**2.0000e-005**	**0.0000**	**0.5361**

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	0.0528					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0321	0.0322	5.0000e-005		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	4.4682	4.4682	3.8000e-004	0.0000	4.4776
Total	**0.0575**	**0.0321**	**0.0322**	**5.0000e-005**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**4.4682**	**4.4682**	**3.8000e-004**	**0.0000**	**4.4776**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	2.0000e-004	2.1900e-003	1.0000e-005	5.8000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5356	0.5356	2.0000e-005	0.0000	0.5361
Total	**2.5000e-004**	**2.0000e-004**	**2.1900e-003**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**5.8000e-004**	**1.5000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5356**	**0.5356**	**2.0000e-005**	**0.0000**	**0.5361**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7306	3.1226	5.7757	0.0146	1.0157	0.0158	1.0315	0.2722	0.0148	0.2870	0.0000	1,353.4964	1,353.4964	0.0925	0.0000	1,355.8092
Unmitigated	0.7306	3.1226	5.7757	0.0146	1.0157	0.0158	1.0315	0.2722	0.0148	0.2870	0.0000	1,353.4964	1,353.4964	0.0925	0.0000	1,355.8092

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market (24 Hour)	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	1,414.02	1,414.02	1414.02	1,488,095	1,488,095
Gasoline/Service Station	1,834.08	1,834.08	1834.08	1,186,263	1,186,263
Parking Lot	0.00	0.00	0.00		
Total	3,248.10	3,248.10	3,248.10	2,674,357	2,674,357

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	16.60	8.40	6.90	33.00	48.00	19.00	21	51	28
Convenience Market (24 Hour)	16.60	8.40	6.90	0.90	80.10	19.00	24	15	61
Fast Food Restaurant with Drive	16.60	8.40	6.90	2.20	78.80	19.00	29	21	50
Gasoline/Service Station	16.60	8.40	6.90	2.00	79.00	19.00	14	27	59
Parking Lot	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
Automobile Care Center	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Convenience Market (24 Hour)	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Fast Food Restaurant with Drive Thru	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Gasoline/Service Station	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Parking Lot	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Sycamore Canyon Project - South Coast Air Basin, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	160.2204	160.2204	3.5000e-003	7.3000e-004	160.5241
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	160.2204	160.2204	3.5000e-003	7.3000e-004	160.5241
NaturalGas Mitigated	6.3000e-003	0.0573	0.0481	3.4000e-004		4.3500e-003	4.3500e-003		4.3500e-003	4.3500e-003	0.0000	62.3761	62.3761	1.2000e-003	1.1400e-003	62.7468
NaturalGas Unmitigated	6.3000e-003	0.0573	0.0481	3.4000e-004		4.3500e-003	4.3500e-003		4.3500e-003	4.3500e-003	0.0000	62.3761	62.3761	1.2000e-003	1.1400e-003	62.7468

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	49319.8	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6319	2.6319	5.0000e-005	5.0000e-005	2.6475
Convenience Market (24 Hour)	7104	4.0000e-005	3.5000e-004	2.9000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3791	0.3791	1.0000e-005	1.0000e-005	0.3814
Fast Food Restaurant with Drive Thru	1.03907e+006	5.6000e-003	0.0509	0.0428	3.1000e-004		3.8700e-003	3.8700e-003		3.8700e-003	3.8700e-003	0.0000	55.4488	55.4488	1.0600e-003	1.0200e-003	55.7783
Gasoline/Service Station	73388.4	4.0000e-004	3.6000e-003	3.0200e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.9163	3.9163	8.0000e-005	7.0000e-005	3.9396
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**6.3100e-003**	**0.0573**	**0.0481**	**3.4000e-004**		**4.3500e-003**	**4.3500e-003**		**4.3500e-003**	**4.3500e-003**	**0.0000**	**62.3761**	**62.3761**	**1.2000e-003**	**1.1500e-003**	**62.7468**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	49319.8	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6319	2.6319	5.0000e-005	5.0000e-005	2.6475
Convenience Market (24 Hour)	7104	4.0000e-005	3.5000e-004	2.9000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3791	0.3791	1.0000e-005	1.0000e-005	0.3814
Fast Food Restaurant with Drive Thru	1.03907e+006	5.6000e-003	0.0509	0.0428	3.1000e-004		3.8700e-003	3.8700e-003		3.8700e-003	3.8700e-003	0.0000	55.4488	55.4488	1.0600e-003	1.0200e-003	55.7783
Gasoline/Service Station	73388.4	4.0000e-004	3.6000e-003	3.0200e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.9163	3.9163	8.0000e-005	7.0000e-005	3.9396
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**6.3100e-003**	**0.0573**	**0.0481**	**3.4000e-004**		**4.3500e-003**	**4.3500e-003**		**4.3500e-003**	**4.3500e-003**	**0.0000**	**62.3761**	**62.3761**	**1.2000e-003**	**1.1500e-003**	**62.7468**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	15407.7	9.2647	2.0000e-004	4.0000e-005	9.2823
Convenience Market (24 Hour)	40416	24.3023	5.3000e-004	1.1000e-004	24.3484
Fast Food Restaurant with Drive Thru	180424	108.4898	2.3700e-003	4.9000e-004	108.6955
Gasoline/Service Station	22926.8	13.7860	3.0000e-004	6.0000e-005	13.8121
Parking Lot	7280	4.3775	1.0000e-004	2.0000e-005	4.3858
Total		**160.2204**	**3.5000e-003**	**7.2000e-004**	**160.5241**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	15407.7	9.2647	2.0000e-004	4.0000e-005	9.2823
Convenience Market (24 Hour)	40416	24.3023	5.3000e-004	1.1000e-004	24.3484
Fast Food Restaurant with Drive Thru	180424	108.4898	2.3700e-003	4.9000e-004	108.6955
Gasoline/Service Station	22926.8	13.7860	3.0000e-004	6.0000e-005	13.8121
Parking Lot	7280	4.3775	1.0000e-004	2.0000e-005	4.3858
Total		**160.2204**	**3.5000e-003**	**7.2000e-004**	**160.5241**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0457	1.0000e-005	9.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-003	1.9000e-003	1.0000e-005	0.0000	2.0300e-003
Unmitigated	0.0457	1.0000e-005	9.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-003	1.9000e-003	1.0000e-005	0.0000	2.0300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-003	1.9000e-003	1.0000e-005	0.0000	2.0300e-003
Total	**0.0457**	**1.0000e-005**	**9.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9000e-003**	**1.9000e-003**	**1.0000e-005**	**0.0000**	**2.0300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-003	1.9000e-003	1.0000e-005	0.0000	2.0300e-003
Total	**0.0457**	**1.0000e-005**	**9.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9000e-003**	**1.9000e-003**	**1.0000e-005**	**0.0000**	**2.0300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.3841	0.0502	1.2400e-003	17.0097
Unmitigated	17.1422	0.0573	1.4200e-003	18.9963

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.143003 / 0.0876472	1.7506	4.7000e-003	1.2000e-004	1.9031
Convenience Market (24 Hour)	0.237032 / 0.145278	2.9016	7.7900e-003	2.0000e-004	3.1544
Fast Food Restaurant with Drive Thru	1.15343 / 0.0736231	9.8886	0.0378	9.3000e-004	11.1108
Gasoline/Service Station	0.21251 / 0.130248	2.6014	6.9800e-003	1.7000e-004	2.8281
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**17.1422**	**0.0573**	**1.4200e-003**	**18.9963**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.125328 / 0.0876472	1.6066	4.1200e-003	1.0000e-004	1.7404
Convenience Market (24 Hour)	0.207735 / 0.145278	2.6629	6.8300e-003	1.7000e-004	2.8847
Fast Food Restaurant with Drive Thru	1.01086 / 0.0736231	8.7272	0.0331	8.2000e-004	9.7984
Gasoline/Service Station	0.186244 / 0.130248	2.3874	6.1200e-003	1.5000e-004	2.5863
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**15.3841**	**0.0502**	**1.2400e-003**	**17.0097**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.7669	0.8136	0.0000	34.1068
Unmitigated	13.7669	0.8136	0.0000	34.1068

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	5.81	1.1794	0.0697	0.0000	2.9219
Convenience Market (24 Hour)	9.62	1.9528	0.1154	0.0000	4.8379
Fast Food Restaurant with Drive Thru	43.77	8.8849	0.5251	0.0000	22.0120
Gasoline/Service Station	8.62	1.7498	0.1034	0.0000	4.3350
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**13.7668**	**0.8136**	**0.0000**	**34.1068**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	5.81	1.1794	0.0697	0.0000	2.9219
Convenience Market (24 Hour)	9.62	1.9528	0.1154	0.0000	4.8379
Fast Food Restaurant with Drive Thru	43.77	8.8849	0.5251	0.0000	22.0120
Gasoline/Service Station	8.62	1.7498	0.1034	0.0000	4.3350
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**13.7668**	**0.8136**	**0.0000**	**34.1068**

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

Sycamore Canyon Project

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	52.00	Space	1.95	20,800.00	0
Fast Food Restaurant with Drive Thru	3.80	1000sqft	0.09	3,800.00	0
Automobile Care Center	1.52	1000sqft	0.03	1,518.00	0
Convenience Market (24 Hour)	3.20	1000sqft	0.07	3,200.00	0
Gasoline/Service Station	16.00	Pump	0.05	2,258.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2020
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Sycamore Canyon Project - South Coast Air Basin, Summer

Project Characteristics -

Land Use - Per project site plan

Construction Phase - Per client info

Grading - Per site plans

Architectural Coating - Low VOC paint rul 1113

Vehicle Trips - Per project traffic study; 3248 daily trips all together

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3.00	10.00
tblConstructionPhase	NumDays	6.00	20.00
tblConstructionPhase	NumDays	220.00	100.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	10.00	35.00
tblConstructionPhase	PhaseEndDate	6/5/2019	6/14/2019
tblConstructionPhase	PhaseEndDate	6/13/2019	7/12/2019
tblConstructionPhase	PhaseEndDate	4/16/2020	11/29/2019
tblConstructionPhase	PhaseEndDate	4/30/2020	12/20/2019
tblConstructionPhase	PhaseEndDate	5/14/2020	12/27/2019
tblConstructionPhase	PhaseStartDate	6/6/2019	6/17/2019
tblConstructionPhase	PhaseStartDate	6/14/2019	7/15/2019
tblConstructionPhase	PhaseStartDate	4/17/2020	11/11/2019
tblConstructionPhase	PhaseStartDate	5/1/2020	11/11/2019
tblGrading	AcresOfGrading	10.00	3.00

tblGrading	AcresOfGrading	15.00	4.50
tblLandUse	LandUseSquareFeet	1,520.00	1,518.00
tblLandUse	LotAcreage	0.47	1.95
tblTripsAndVMT	HaulingTripNumber	0.00	1,686.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	863.10	0.00
tblVehicleTrips	ST_TR	722.03	372.11
tblVehicleTrips	ST_TR	168.56	114.63
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	758.45	0.00
tblVehicleTrips	SU_TR	542.72	372.11
tblVehicleTrips	SU_TR	168.56	114.63
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	737.99	0.00
tblVehicleTrips	WD_TR	496.12	372.11
tblVehicleTrips	WD_TR	168.56	114.63

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	7.4296	47.8783	30.4767	0.0880	7.7654	1.9555	8.9330	3.7605	1.8526	4.8382	0.0000	9,332.3746	9,332.3746	1.1640	0.0000	9,361.4742
Maximum	**7.4296**	**47.8783**	**30.4767**	**0.0880**	**7.7654**	**1.9555**	**8.9330**	**3.7605**	**1.8526**	**4.8382**	**0.0000**	**9,332.3746**	**9,332.3746**	**1.1640**	**0.0000**	**9,361.4742**

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	7.4296	47.8783	30.4767	0.0880	3.9949	1.9555	5.1625	1.7308	1.8526	2.8085	0.0000	9,332.3746	9,332.3746	1.1640	0.0000	9,361.4742
Maximum	**7.4296**	**47.8783**	**30.4767**	**0.0880**	**3.9949**	**1.9555**	**5.1625**	**1.7308**	**1.8526**	**2.8085**	**0.0000**	**9,332.3746**	**9,332.3746**	**1.1640**	**0.0000**	**9,361.4742**

	ROG	NOx	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**	**48.56**	**0.00**	**42.21**	**53.97**	**0.00**	**41.95**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2504	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179
Energy	0.0345	0.3140	0.2637	1.8800e-003		0.0239	0.0239		0.0239	0.0239		376.7556	376.7556	7.2200e-003	6.9100e-003	378.9945
Mobile	4.3670	16.8834	31.1597	0.0837	5.6840	0.0863	5.7702	1.5208	0.0808	1.6015		8,527.6628	8,527.6628	0.5501		8,541.4143
Total	**4.6520**	**17.1974**	**31.4313**	**0.0856**	**5.6840**	**0.1102**	**5.7941**	**1.5208**	**0.1047**	**1.6254**		**8,904.4352**	**8,904.4352**	**0.5573**	**6.9100e-003**	**8,920.4266**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2504	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179
Energy	0.0345	0.3140	0.2637	1.8800e-003		0.0239	0.0239		0.0239	0.0239		376.7556	376.7556	7.2200e-003	6.9100e-003	378.9945
Mobile	4.3670	16.8834	31.1597	0.0837	5.6840	0.0863	5.7702	1.5208	0.0808	1.6015		8,527.6628	8,527.6628	0.5501		8,541.4143
Total	**4.6520**	**17.1974**	**31.4313**	**0.0856**	**5.6840**	**0.1102**	**5.7941**	**1.5208**	**0.1047**	**1.6254**		**8,904.4352**	**8,904.4352**	**0.5573**	**6.9100e-003**	**8,920.4266**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/3/2019	6/14/2019	5	10	
2	Grading	Grading	6/17/2019	7/12/2019	5	20	
3	Building Construction	Building Construction	7/15/2019	11/29/2019	5	100	
4	Paving	Paving	11/11/2019	12/20/2019	5	30	
5	Architectural Coating	Architectural Coating	11/11/2019	12/27/2019	5	35	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.95

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 16,165; Non-Residential Outdoor: 5,388; Striped Parking Area: 1,248 (Architectural Coating – sqft)

OffRoad Equipment

Sycamore Canyon Project - South Coast Air Basin, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,686.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	13.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4772	0.0000	0.4772	0.0515	0.0000	0.0515			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854		2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**0.4772**	**0.8537**	**1.3309**	**0.0515**	**0.7854**	**0.8369**		**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0388	0.0272	0.3584	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4289	94.4289	2.9600e-003		94.5029
Total	**0.0388**	**0.0272**	**0.3584**	**9.5000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**94.4289**	**94.4289**	**2.9600e-003**		**94.5029**

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					0.1861	0.0000	0.1861	0.0201	0.0000	0.0201			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854	0.0000	2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**0.1861**	**0.8537**	**1.0398**	**0.0201**	**0.7854**	**0.8055**	**0.0000**	**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0388	0.0272	0.3584	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4289	94.4289	2.9600e-003		94.5029
Total	**0.0388**	**0.0272**	**0.3584**	**9.5000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**94.4289**	**94.4289**	**2.9600e-003**		**94.5029**

3.3 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					6.1812	0.0000	6.1812	3.3274	0.0000	3.3274			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871		2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**6.1812**	**1.0730**	**7.2541**	**3.3274**	**0.9871**	**4.3145**		**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7259	25.0999	5.0211	0.0662	1.4724	0.0938	1.5662	0.4035	0.0898	0.4932		7,173.0846	7,173.0846	0.5145		7,185.9459
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	0.0486	0.0340	0.4479	1.1900e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		118.0362	118.0362	3.7000e-003		118.1286
Total	**0.7744**	**25.1339**	**5.4691**	**0.0674**	**1.5842**	**0.0947**	**1.6789**	**0.4331**	**0.0906**	**0.5237**		**7,291.1207**	**7,291.1207**	**0.5182**		**7,304.0745**

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					2.4107	0.0000	2.4107	1.2977	0.0000	1.2977			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871	0.0000	2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**2.4107**	**1.0730**	**3.4836**	**1.2977**	**0.9871**	**2.2848**	**0.0000**	**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7259	25.0999	5.0211	0.0662	1.4724	0.0938	1.5662	0.4035	0.0898	0.4932		7,173.0846	7,173.0846	0.5145		7,185.9459
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	0.0486	0.0340	0.4479	1.1900e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		118.0362	118.0362	3.7000e-003		118.1286
Total	**0.7744**	**25.1339**	**5.4691**	**0.0674**	**1.5842**	**0.0947**	**1.6789**	**0.4331**	**0.0906**	**0.5237**		**7,291.1207**	**7,291.1207**	**0.5182**		**7,304.0745**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**		**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0195	0.5740	0.1415	1.2800e-003	0.0320	3.8000e-003	0.0358	9.2100e-003	3.6400e-003	0.0129		137.2561	137.2561	9.2400e-003		137.4870
Worker	0.0631	0.0442	0.5823	1.5400e-003	0.1453	1.1400e-003	0.1465	0.0385	1.0500e-003	0.0396		153.4470	153.4470	4.8100e-003		153.5672
Total	**0.0826**	**0.6181**	**0.7238**	**2.8200e-003**	**0.1773**	**4.9400e-003**	**0.1823**	**0.0478**	**4.6900e-003**	**0.0524**		**290.7031**	**290.7031**	**0.0141**		**291.0542**

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	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**	**0.0000**	**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0195	0.5740	0.1415	1.2800e-003	0.0320	3.8000e-003	0.0358	9.2100e-003	3.6400e-003	0.0129		137.2561	137.2561	9.2400e-003		137.4870
Worker	0.0631	0.0442	0.5823	1.5400e-003	0.1453	1.1400e-003	0.1465	0.0385	1.0500e-003	0.0396		153.4470	153.4470	4.8100e-003		153.5672
Total	**0.0826**	**0.6181**	**0.7238**	**2.8200e-003**	**0.1773**	**4.9400e-003**	**0.1823**	**0.0478**	**4.6900e-003**	**0.0524**		**290.7031**	**290.7031**	**0.0141**		**291.0542**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2453	12.5685	11.8507	0.0178		0.7301	0.7301		0.6728	0.6728		1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.1703					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4156**	**12.5685**	**11.8507**	**0.0178**		**0.7301**	**0.7301**		**0.6728**	**0.6728**		**1,746.2432**	**1,746.2432**	**0.5418**		**1,759.7870**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0728	0.0510	0.6719	1.7800e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		177.0542	177.0542	5.5500e-003		177.1930
Total	**0.0728**	**0.0510**	**0.6719**	**1.7800e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**177.0542**	**177.0542**	**5.5500e-003**		**177.1930**

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	1.2453	12.5685	11.8507	0.0178		0.7301	0.7301		0.6728	0.6728	0.0000	1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.1703					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4156**	**12.5685**	**11.8507**	**0.0178**		**0.7301**	**0.7301**		**0.6728**	**0.6728**	**0.0000**	**1,746.2432**	**1,746.2432**	**0.5418**		**1,759.7870**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0728	0.0510	0.6719	1.7800e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		177.0542	177.0542	5.5500e-003		177.1930
Total	**0.0728**	**0.0510**	**0.6719**	**1.7800e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**177.0542**	**177.0542**	**5.5500e-003**		**177.1930**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.0195					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**3.2859**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0146	0.0102	0.1344	3.6000e-004	0.0335	2.6000e-004	0.0338	8.8900e-003	2.4000e-004	9.1300e-003		35.4108	35.4108	1.1100e-003		35.4386
Total	**0.0146**	**0.0102**	**0.1344**	**3.6000e-004**	**0.0335**	**2.6000e-004**	**0.0338**	**8.8900e-003**	**2.4000e-004**	**9.1300e-003**		**35.4108**	**35.4108**	**1.1100e-003**		**35.4386**

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	3.0195					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**3.2859**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0146	0.0102	0.1344	3.6000e-004	0.0335	2.6000e-004	0.0338	8.8900e-003	2.4000e-004	9.1300e-003		35.4108	35.4108	1.1100e-003		35.4386
Total	**0.0146**	**0.0102**	**0.1344**	**3.6000e-004**	**0.0335**	**2.6000e-004**	**0.0338**	**8.8900e-003**	**2.4000e-004**	**9.1300e-003**		**35.4108**	**35.4108**	**1.1100e-003**		**35.4386**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3670	16.8834	31.1597	0.0837	5.6840	0.0863	5.7702	1.5208	0.0808	1.6015		8,527.6628	8,527.6628	0.5501		8,541.4143
Unmitigated	4.3670	16.8834	31.1597	0.0837	5.6840	0.0863	5.7702	1.5208	0.0808	1.6015		8,527.6628	8,527.6628	0.5501		8,541.4143

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market (24 Hour)	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	1,414.02	1,414.02	1414.02	1,488,095	1,488,095
Gasoline/Service Station	1,834.08	1,834.08	1834.08	1,186,263	1,186,263
Parking Lot	0.00	0.00	0.00		
Total	3,248.10	3,248.10	3,248.10	2,674,357	2,674,357

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	16.60	8.40	6.90	33.00	48.00	19.00	21	51	28
Convenience Market (24 Hour)	16.60	8.40	6.90	0.90	80.10	19.00	24	15	61
Fast Food Restaurant with Drive	16.60	8.40	6.90	2.20	78.80	19.00	29	21	50
Gasoline/Service Station	16.60	8.40	6.90	2.00	79.00	19.00	14	27	59
Parking Lot	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
Automobile Care Center	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Convenience Market (24 Hour)	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Fast Food Restaurant with Drive Thru	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Gasoline/Service Station	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Parking Lot	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0345	0.3140	0.2637	1.8800e-003		0.0239	0.0239		0.0239	0.0239		376.7556	376.7556	7.2200e-003	6.9100e-003	378.9945
NaturalGas Unmitigated	0.0345	0.3140	0.2637	1.8800e-003		0.0239	0.0239		0.0239	0.0239		376.7556	376.7556	7.2200e-003	6.9100e-003	378.9945

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	135.123	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.8968	15.8968	3.0000e-004	2.9000e-004	15.9913
Convenience Market (24 Hour)	19.463	2.1000e-004	1.9100e-003	1.6000e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004		2.2898	2.2898	4.0000e-005	4.0000e-005	2.3034
Fast Food Restaurant with Drive Thru	2846.77	0.0307	0.2791	0.2344	1.6700e-003		0.0212	0.0212		0.0212	0.0212		334.9144	334.9144	6.4200e-003	6.1400e-003	336.9047
Gasoline/Service Station	201.064	2.1700e-003	0.0197	0.0166	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003		23.6546	23.6546	4.5000e-004	4.3000e-004	23.7952
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0345**	**0.3140**	**0.2637**	**1.8800e-003**		**0.0239**	**0.0239**		**0.0239**	**0.0239**		**376.7556**	**376.7556**	**7.2100e-003**	**6.9000e-003**	**378.9945**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	0.135123	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.8968	15.8968	3.0000e-004	2.9000e-004	15.9913
Convenience Market (24 Hour)	0.019463	2.1000e-004	1.9100e-003	1.6000e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004		2.2898	2.2898	4.0000e-005	4.0000e-005	2.3034
Fast Food Restaurant with Drive Thru	2.84677	0.0307	0.2791	0.2344	1.6700e-003		0.0212	0.0212		0.0212	0.0212		334.9144	334.9144	6.4200e-003	6.1400e-003	336.9047
Gasoline/Service Station	0.201064	2.1700e-003	0.0197	0.0166	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003		23.6546	23.6546	4.5000e-004	4.3000e-004	23.7952
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0345**	**0.3140**	**0.2637**	**1.8800e-003**		**0.0239**	**0.0239**		**0.0239**	**0.0239**		**376.7556**	**376.7556**	**7.2100e-003**	**6.9000e-003**	**378.9945**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2504	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179
Unmitigated	0.2504	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179

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	0.0290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2208					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.4000e-004	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179
Total	**0.2504**	**7.0000e-005**	**7.8600e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0168**	**0.0168**	**4.0000e-005**		**0.0179**

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	0.0290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2208					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.4000e-004	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179
Total	**0.2504**	**7.0000e-005**	**7.8600e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0168**	**0.0168**	**4.0000e-005**		**0.0179**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Sycamore Canyon Project

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	52.00	Space	1.95	20,800.00	0
Fast Food Restaurant with Drive Thru	3.80	1000sqft	0.09	3,800.00	0
Automobile Care Center	1.52	1000sqft	0.03	1,518.00	0
Convenience Market (24 Hour)	3.20	1000sqft	0.07	3,200.00	0
Gasoline/Service Station	16.00	Pump	0.05	2,258.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2020
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Sycamore Canyon Project - South Coast Air Basin, Winter

Project Characteristics -

Land Use - Per project site plan

Construction Phase - Per client info

Grading - Per site plans

Architectural Coating - Low VOC paint rul 1113

Vehicle Trips - Per project traffic study; 3248 daily trips all together

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3.00	10.00
tblConstructionPhase	NumDays	6.00	20.00
tblConstructionPhase	NumDays	220.00	100.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	10.00	35.00
tblConstructionPhase	PhaseEndDate	6/5/2019	6/14/2019
tblConstructionPhase	PhaseEndDate	6/13/2019	7/12/2019
tblConstructionPhase	PhaseEndDate	4/16/2020	11/29/2019
tblConstructionPhase	PhaseEndDate	4/30/2020	12/20/2019
tblConstructionPhase	PhaseEndDate	5/14/2020	12/27/2019
tblConstructionPhase	PhaseStartDate	6/6/2019	6/17/2019
tblConstructionPhase	PhaseStartDate	6/14/2019	7/15/2019
tblConstructionPhase	PhaseStartDate	4/17/2020	11/11/2019
tblConstructionPhase	PhaseStartDate	5/1/2020	11/11/2019
tblGrading	AcresOfGrading	10.00	3.00

tblGrading	AcresOfGrading	15.00	4.50
tblLandUse	LandUseSquareFeet	1,520.00	1,518.00
tblLandUse	LotAcreage	0.47	1.95
tblTripsAndVMT	HaulingTripNumber	0.00	1,686.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	863.10	0.00
tblVehicleTrips	ST_TR	722.03	372.11
tblVehicleTrips	ST_TR	168.56	114.63
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	758.45	0.00
tblVehicleTrips	SU_TR	542.72	372.11
tblVehicleTrips	SU_TR	168.56	114.63
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	737.99	0.00
tblVehicleTrips	WD_TR	496.12	372.11
tblVehicleTrips	WD_TR	168.56	114.63

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	7.4452	48.2230	30.3649	0.0868	7.7654	1.9555	8.9348	3.7605	1.8527	4.8399	0.0000	9,204.4520	9,204.4520	1.1845	0.0000	9,234.0640
Maximum	**7.4452**	**48.2230**	**30.3649**	**0.0868**	**7.7654**	**1.9555**	**8.9348**	**3.7605**	**1.8527**	**4.8399**	**0.0000**	**9,204.4520**	**9,204.4520**	**1.1845**	**0.0000**	**9,234.0640**

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	7.4452	48.2230	30.3649	0.0868	3.9949	1.9555	5.1643	1.7308	1.8527	2.8102	0.0000	9,204.4520	9,204.4520	1.1845	0.0000	9,234.0640
Maximum	**7.4452**	**48.2230**	**30.3649**	**0.0868**	**3.9949**	**1.9555**	**5.1643**	**1.7308**	**1.8527**	**2.8102**	**0.0000**	**9,204.4520**	**9,204.4520**	**1.1845**	**0.0000**	**9,234.0640**

	ROG	NOx	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**	**48.56**	**0.00**	**42.20**	**53.97**	**0.00**	**41.94**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2504	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179
Energy	0.0345	0.3140	0.2637	1.8800e-003		0.0239	0.0239		0.0239	0.0239		376.7556	376.7556	7.2200e-003	6.9100e-003	378.9945
Mobile	4.1858	16.8627	31.8701	0.0790	5.6840	0.0877	5.7717	1.5208	0.0822	1.6029		8,043.6710	8,043.6710	0.5728		8,057.9915
Total	**4.4707**	**17.1767**	**32.1417**	**0.0809**	**5.6840**	**0.1116**	**5.7956**	**1.5208**	**0.1061**	**1.6268**		**8,420.4434**	**8,420.4434**	**0.5801**	**6.9100e-003**	**8,437.0039**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2504	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179
Energy	0.0345	0.3140	0.2637	1.8800e-003		0.0239	0.0239		0.0239	0.0239		376.7556	376.7556	7.2200e-003	6.9100e-003	378.9945
Mobile	4.1858	16.8627	31.8701	0.0790	5.6840	0.0877	5.7717	1.5208	0.0822	1.6029		8,043.6710	8,043.6710	0.5728		8,057.9915
Total	**4.4707**	**17.1767**	**32.1417**	**0.0809**	**5.6840**	**0.1116**	**5.7956**	**1.5208**	**0.1061**	**1.6268**		**8,420.4434**	**8,420.4434**	**0.5801**	**6.9100e-003**	**8,437.0039**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/3/2019	6/14/2019	5	10	
2	Grading	Grading	6/17/2019	7/12/2019	5	20	
3	Building Construction	Building Construction	7/15/2019	11/29/2019	5	100	
4	Paving	Paving	11/11/2019	12/20/2019	5	30	
5	Architectural Coating	Architectural Coating	11/11/2019	12/27/2019	5	35	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.95

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 16,165; Non-Residential Outdoor: 5,388; Striped Parking Area: 1,248 (Architectural Coating – sqft)

OffRoad Equipment

Sycamore Canyon Project - South Coast Air Basin, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,686.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	13.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4772	0.0000	0.4772	0.0515	0.0000	0.0515			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854		2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**0.4772**	**0.8537**	**1.3309**	**0.0515**	**0.7854**	**0.8369**		**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0427	0.0299	0.3256	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.5734	88.5734	2.7800e-003		88.6428
Total	**0.0427**	**0.0299**	**0.3256**	**8.9000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**88.5734**	**88.5734**	**2.7800e-003**		**88.6428**

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					0.1861	0.0000	0.1861	0.0201	0.0000	0.0201			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854	0.0000	2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**0.1861**	**0.8537**	**1.0398**	**0.0201**	**0.7854**	**0.8055**	**0.0000**	**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0427	0.0299	0.3256	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.5734	88.5734	2.7800e-003		88.6428
Total	**0.0427**	**0.0299**	**0.3256**	**8.9000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**88.5734**	**88.5734**	**2.7800e-003**		**88.6428**

3.3 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					6.1812	0.0000	6.1812	3.3274	0.0000	3.3274			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871		2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**6.1812**	**1.0730**	**7.2541**	**3.3274**	**0.9871**	**4.3145**		**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7453	25.4413	5.3892	0.0651	1.4724	0.0956	1.5680	0.4035	0.0914	0.4949		7,052.4814	7,052.4814	0.5352		7,065.8608
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	0.0533	0.0373	0.4070	1.1100e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		110.7167	110.7167	3.4700e-003		110.8035
Total	**0.7986**	**25.4786**	**5.7962**	**0.0662**	**1.5842**	**0.0965**	**1.6807**	**0.4331**	**0.0923**	**0.5254**		**7,163.1981**	**7,163.1981**	**0.5387**		**7,176.6643**

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					2.4107	0.0000	2.4107	1.2977	0.0000	1.2977			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871	0.0000	2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**2.4107**	**1.0730**	**3.4836**	**1.2977**	**0.9871**	**2.2848**	**0.0000**	**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7453	25.4413	5.3892	0.0651	1.4724	0.0956	1.5680	0.4035	0.0914	0.4949		7,052.4814	7,052.4814	0.5352		7,065.8608
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	0.0533	0.0373	0.4070	1.1100e-003	0.1118	8.7000e-004	0.1127	0.0296	8.1000e-004	0.0305		110.7167	110.7167	3.4700e-003		110.8035
Total	**0.7986**	**25.4786**	**5.7962**	**0.0662**	**1.5842**	**0.0965**	**1.6807**	**0.4331**	**0.0923**	**0.5254**		**7,163.1981**	**7,163.1981**	**0.5387**		**7,176.6643**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**		**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0203	0.5747	0.1568	1.2500e-003	0.0320	3.8700e-003	0.0359	9.2100e-003	3.7000e-003	0.0129		133.5695	133.5695	9.8800e-003		133.8164
Worker	0.0693	0.0485	0.5291	1.4500e-003	0.1453	1.1400e-003	0.1465	0.0385	1.0500e-003	0.0396		143.9318	143.9318	4.5100e-003		144.0446
Total	**0.0896**	**0.6232**	**0.6858**	**2.7000e-003**	**0.1773**	**5.0100e-003**	**0.1823**	**0.0478**	**4.7500e-003**	**0.0525**		**277.5012**	**277.5012**	**0.0144**		**277.8610**

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	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**	**0.0000**	**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0203	0.5747	0.1568	1.2500e-003	0.0320	3.8700e-003	0.0359	9.2100e-003	3.7000e-003	0.0129		133.5695	133.5695	9.8800e-003		133.8164
Worker	0.0693	0.0485	0.5291	1.4500e-003	0.1453	1.1400e-003	0.1465	0.0385	1.0500e-003	0.0396		143.9318	143.9318	4.5100e-003		144.0446
Total	**0.0896**	**0.6232**	**0.6858**	**2.7000e-003**	**0.1773**	**5.0100e-003**	**0.1823**	**0.0478**	**4.7500e-003**	**0.0525**		**277.5012**	**277.5012**	**0.0144**		**277.8610**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2453	12.5685	11.8507	0.0178		0.7301	0.7301		0.6728	0.6728		1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.1703					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4156**	**12.5685**	**11.8507**	**0.0178**		**0.7301**	**0.7301**		**0.6728**	**0.6728**		**1,746.2432**	**1,746.2432**	**0.5418**		**1,759.7870**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0800	0.0560	0.6105	1.6700e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		166.0751	166.0751	5.2100e-003		166.2053
Total	**0.0800**	**0.0560**	**0.6105**	**1.6700e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**166.0751**	**166.0751**	**5.2100e-003**		**166.2053**

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	1.2453	12.5685	11.8507	0.0178		0.7301	0.7301		0.6728	0.6728	0.0000	1,746.2432	1,746.2432	0.5418		1,759.7870
Paving	0.1703					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4156**	**12.5685**	**11.8507**	**0.0178**		**0.7301**	**0.7301**		**0.6728**	**0.6728**	**0.0000**	**1,746.2432**	**1,746.2432**	**0.5418**		**1,759.7870**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0800	0.0560	0.6105	1.6700e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		166.0751	166.0751	5.2100e-003		166.2053
Total	**0.0800**	**0.0560**	**0.6105**	**1.6700e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**166.0751**	**166.0751**	**5.2100e-003**		**166.2053**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.0195					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**3.2859**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0160	0.0112	0.1221	3.3000e-004	0.0335	2.6000e-004	0.0338	8.8900e-003	2.4000e-004	9.1300e-003		33.2150	33.2150	1.0400e-003		33.2411
Total	**0.0160**	**0.0112**	**0.1221**	**3.3000e-004**	**0.0335**	**2.6000e-004**	**0.0338**	**8.8900e-003**	**2.4000e-004**	**9.1300e-003**		**33.2150**	**33.2150**	**1.0400e-003**		**33.2411**

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	3.0195					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**3.2859**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0160	0.0112	0.1221	3.3000e-004	0.0335	2.6000e-004	0.0338	8.8900e-003	2.4000e-004	9.1300e-003		33.2150	33.2150	1.0400e-003		33.2411
Total	**0.0160**	**0.0112**	**0.1221**	**3.3000e-004**	**0.0335**	**2.6000e-004**	**0.0338**	**8.8900e-003**	**2.4000e-004**	**9.1300e-003**		**33.2150**	**33.2150**	**1.0400e-003**		**33.2411**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.1858	16.8627	31.8701	0.0790	5.6840	0.0877	5.7717	1.5208	0.0822	1.6029		8,043.6710	8,043.6710	0.5728		8,057.9915
Unmitigated	4.1858	16.8627	31.8701	0.0790	5.6840	0.0877	5.7717	1.5208	0.0822	1.6029		8,043.6710	8,043.6710	0.5728		8,057.9915

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market (24 Hour)	0.00	0.00	0.00		
Fast Food Restaurant with Drive Thru	1,414.02	1,414.02	1414.02	1,488,095	1,488,095
Gasoline/Service Station	1,834.08	1,834.08	1834.08	1,186,263	1,186,263
Parking Lot	0.00	0.00	0.00		
Total	3,248.10	3,248.10	3,248.10	2,674,357	2,674,357

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	16.60	8.40	6.90	33.00	48.00	19.00	21	51	28
Convenience Market (24 Hour)	16.60	8.40	6.90	0.90	80.10	19.00	24	15	61
Fast Food Restaurant with Drive	16.60	8.40	6.90	2.20	78.80	19.00	29	21	50
Gasoline/Service Station	16.60	8.40	6.90	2.00	79.00	19.00	14	27	59
Parking Lot	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
Automobile Care Center	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Convenience Market (24 Hour)	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Fast Food Restaurant with Drive Thru	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Gasoline/Service Station	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955
Parking Lot	0.550339	0.043800	0.200255	0.122233	0.016799	0.005871	0.020633	0.029727	0.002027	0.001932	0.004726	0.000704	0.000955

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0345	0.3140	0.2637	1.8800e-003		0.0239	0.0239		0.0239	0.0239		376.7556	376.7556	7.2200e-003	6.9100e-003	378.9945
NaturalGas Unmitigated	0.0345	0.3140	0.2637	1.8800e-003		0.0239	0.0239		0.0239	0.0239		376.7556	376.7556	7.2200e-003	6.9100e-003	378.9945

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	135.123	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.8968	15.8968	3.0000e-004	2.9000e-004	15.9913
Convenience Market (24 Hour)	19.463	2.1000e-004	1.9100e-003	1.6000e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004		2.2898	2.2898	4.0000e-005	4.0000e-005	2.3034
Fast Food Restaurant with Drive Thru	2846.77	0.0307	0.2791	0.2344	1.6700e-003		0.0212	0.0212		0.0212	0.0212		334.9144	334.9144	6.4200e-003	6.1400e-003	336.9047
Gasoline/Service Station	201.064	2.1700e-003	0.0197	0.0166	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003		23.6546	23.6546	4.5000e-004	4.3000e-004	23.7952
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0345**	**0.3140**	**0.2637**	**1.8800e-003**		**0.0239**	**0.0239**		**0.0239**	**0.0239**		**376.7556**	**376.7556**	**7.2100e-003**	**6.9000e-003**	**378.9945**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	0.135123	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.8968	15.8968	3.0000e-004	2.9000e-004	15.9913
Convenience Market (24 Hour)	0.019463	2.1000e-004	1.9100e-003	1.6000e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004		2.2898	2.2898	4.0000e-005	4.0000e-005	2.3034
Fast Food Restaurant with Drive Thru	2.84677	0.0307	0.2791	0.2344	1.6700e-003		0.0212	0.0212		0.0212	0.0212		334.9144	334.9144	6.4200e-003	6.1400e-003	336.9047
Gasoline/Service Station	0.201064	2.1700e-003	0.0197	0.0166	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003		23.6546	23.6546	4.5000e-004	4.3000e-004	23.7952
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0345**	**0.3140**	**0.2637**	**1.8800e-003**		**0.0239**	**0.0239**		**0.0239**	**0.0239**		**376.7556**	**376.7556**	**7.2100e-003**	**6.9000e-003**	**378.9945**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2504	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179
Unmitigated	0.2504	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179

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	0.0290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2208					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.4000e-004	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179
Total	**0.2504**	**7.0000e-005**	**7.8600e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0168**	**0.0168**	**4.0000e-005**		**0.0179**

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	0.0290					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2208					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.4000e-004	7.0000e-005	7.8600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0168	0.0168	4.0000e-005		0.0179
Total	**0.2504**	**7.0000e-005**	**7.8600e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0168**	**0.0168**	**4.0000e-005**		**0.0179**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Greenhouse Gas Emission Worksheet
N20 Mobile Emissions

Sycamore Canyon

Annual VMT*: 2,674,357

From CalEEMod 2016 Vehicle Fleet Mix Output:

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)**	CH4 Emission (g/mile)***	N2O Emission Factor (g/mile)**	N2O Emission (g/mile)***
Light Auto	55.0%	0.04	0.022	0.04	0.022
Light Truck < 3750 lbs	4.4%	0.05	0.0022	0.06	0.00264
Light Truck 3751-5750 lbs	20.0%	0.05	0.01	0.06	0.012
Med Truck 5751-8500 lbs	12.2%	0.12	0.01464	0.2	0.0244
Lite-Heavy Truck 8501-10,000 lbs	1.7%	0.12	0.00204	0.2	0.0034
Lite-Heavy Truck 10,001-14,000 lbs	0.6%	0.09	0.00054	0.125	0.00075
Med-Heavy Truck 14,001-33,000 lbs	2.1%	0.06	0.00126	0.05	0.00105
Heavy-Heavy Truck 33,001-60,000 lbs	3.0%	0.06	0.0018	0.05	0.0015
Other Bus	0.2%	0.06	0.00012	0.05	0.0001
Urban Bus	0.2%	0.06	0.00012	0.05	0.0001
Motorcycle	0.5%	0.09	0.00045	0.01	0.00005
School Bus	0.1%	0.06	0.00006	0.05	0.00005
Motor Home	0.1%	0.09	0.00009	0.125	0.000125
Total	**100.1%**		**0.05532**		**0.068165**

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)***

CH4	25	GWP
N2O	298	GWP
1 ton (short, US) =	0.90718474	metric ton

Annual Mobile Emissions:

	Total Emissions		Total CO2e units	
N20 Emissions:	0.1823	metric tons N2O	**54.32**	metric tons CO2e
		Project Total:	***54.32***	***metric tons CO2e***

References

* From CalEEMod 2016 results for mobile sources

** Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile).
in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
Assume Model year 2000-present, gasoline fueled.

*** California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.

**** Global warming potentials from IPCC Fourth Assessment Report

Greenhouse Gas Emission Worksheet
Construction Emissions Sycamore Canyon

Annual Mobile Emissions:

	Project Total:	***245 metric tons CO2e***
References	**Amortarized (30 years)**	**8.18**
CalEEMod Output		

	Operation	Construction (Ann	Mobile	Total