

**Appendix C: Air Quality Technical Report and
Greenhouse Gas Emissions Analysis**

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| Air Quality Technical Report

Sunroad Commercial Project

September 2019

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Acronyms and Abbreviations

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
CAA	Clean Air Act
CARB	California Air Resources Board
CCR	<i>California Code of Regulations</i>
CEQA	California Environmental Quality Act
CFR	<i>Code of Federal Regulations</i>
CO	Carbon Monoxide
DPM	Diesel Particulate Matter
HI	Hazard Index
mg/m^3	milligrams per cubic meter
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrogen Oxides
O_3	Ozone
OPR	State of California - Office of Planning and Research
Pb	Lead
PM_{10}	Particulate matter smaller than 10 microns in diameter
$\text{PM}_{2.5}$	Particulate matter smaller than 2.5 microns in diameter
ppm	parts per million
RAQS	Regional Air Quality Strategy
REL	Reference Exposure Levels
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SIP	State Implementation Plan
SO_x	Sulfur Oxides
TAC	Toxic Air Contaminants
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

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Executive Summary

This Air Quality Report assesses the potential air quality impacts of implementation of the proposed Sunroad Commercial project (project), which would include a car wash, restaurants with drive-throughs, and retail space. The project site is located at the intersection of Vista Village Drive and Hacienda Drive in the city of Vista. Air quality issues would be attributable to emissions associated with construction and operation of the project. This report presents an evaluation of existing conditions at the site, thresholds of significance, and potential air quality impacts associated with construction and operation of the project. Results of this report show that the proposed project would not result in significant air quality impacts.

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Section 1 Introduction

This air quality evaluation was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) to assess if any potentially significant air quality impacts are likely to occur in conjunction with the type and scale of development associated with the proposed Sunroad Commercial Project.

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Table 1. Project Components

Building Pad	Land Use Type	Size (square feet)
Pad #1	Fast food restaurant with drive-through	4,800
Pad #2	Fast food restaurant with drive-through	2,020
	Retail shop	1,980
Pad #3	Fast food restaurant with drive-through	4,500
Pad #4	Fast food restaurant with drive-through	2,420
	Retail shop	1,200
	Retail shop	1,200
	Retail shop	1,200
Pad #5	Carwash	4,200
Overall	Surface parking lot (163 spaces)	85,000

Source: Megan Jones, Job Captain, SGPA Architecture and Planning, Email to Sharon Toland, Project Manager, Harris & Associates, September 25, 2018.

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Section 3 Environmental Setting

The following sections describe the existing climate and meteorology, pollutants of concern, and regulatory framework relevant to the proposed project site.

3.1 Climate and Meteorology

Regional climate and local meteorological conditions influence ambient air quality. The project site is located in the San Diego Air Basin (SDAB). The climate of the SDAB is dominated by a semi-permanent high pressure cell located over the Pacific Ocean. This high-pressure cell typically creates a pattern of late-night and early-morning low clouds, hazy afternoon sunshine, daytime onshore breezes, and little temperature variation year-round. The climatic classification for San Diego is a Mediterranean climate, with warm, dry summers and mild, wet winters (County of San Diego 2007). Meteorological data in the project area is gathered at the Camp Pendleton station, approximately 8.6 miles northwest of the project site. The normal daily maximum temperature is 83 °F in August, and the normal daily minimum temperature is 44° F in December. The normal precipitation in the project area is about 13.1 inches annually, occurring primarily from November through March (WRCC 2018).

The high pressure cell creates subsidence inversions, also known as temperature inversions, which occur during the warmer months as descending air associated with the Pacific high pressure cell comes into contact with cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. In addition, the region experience daytime onshore flow and nighttime offshore flow, which leads to emissions being blown out to sea at night and returning to land the following day. Under certain conditions, this atmospheric oscillation results in the offshore transport of air, and pollutants, from the Los Angeles region to San Diego County, which typically results in higher ozone concentrations being measured at San Diego County (County of San Diego 2007).

3.2 Air Pollutants

Historically, air quality laws and regulations have divided air pollutants into two broad categories: criteria air pollutants and toxic air contaminants (TACs). Criteria air pollutants are a group of common air pollutants regulated by the federal and state governments by means of ambient standards based on criteria regarding health and/or environmental effects of pollution (USEPA 2018).

TACs are pollutants with the potential to cause significant adverse health effects. Unlike the air quality standards for criteria pollutants to protect health and the environment, in California, the California Air Resources Board (CARB) identifies exposure thresholds for TACs that indicate the level below which no significant adverse health effects are anticipated from exposure to the

identified substance. However, exposure thresholds have not been established for all TACs, particularly in instances where no safe exposure level had been identified, or where insufficient data is available (CARB 2011).

3.2.1 Criteria Air Pollutants

The criteria air pollutants pertinent to the analyses in this report are carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), particulate matter (PM), and sulfur dioxide (SO₂). The following describes the health effects for each of these criteria air pollutants. Emissions from lead typically result from industrial processes such as ore and metals processing, and leaded aviation gasoline (USEPA 2018). These sources are not proposed as part of the project, and lead emissions are not included in this analysis.

Carbon Monoxide (CO)

A colorless, odorless, poisonous gas, produced by combustion processes, primarily mobile sources. When CO gets into the body, it combines with chemicals in the blood and prevents the blood from providing oxygen to cells, tissues, and organs. Because the body requires oxygen for energy, high-level exposures to CO can cause serious health effects, including death (USEPA 2018).

Nitrogen Oxides (NO_x)

A general term pertaining to compounds, including nitric oxide (NO), nitrogen dioxide (NO₂), and other oxides of nitrogen. NO_x is produced from burning fuels, including gasoline, diesel, and coal. NO_x reacts with volatile organic compounds to form ground-level ozone (smog). NO_x is linked with a number of adverse respiratory systems effects (USEPA 2018).

Ozone (O₃)

Ground-level ozone is not emitted directly in the air, but is formed by chemical reactions of “precursor” pollutants – NO_x and volatile organic compounds (VOCs) – in the presence of sunlight. Major emissions sources include NO_x and VOC emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents. Ozone can trigger a variety of health problems, particularly for sensitive receptors, including children, the elderly, and people of all ages who have lung diseases such as asthma (USEPA 2018).

Particulate Matter (PM₁₀ and PM_{2.5})

PM includes dust, metals, organic compounds, and other tiny bits of solid materials that are released into and move around in the air. Particulates are produced by many sources, including burning of diesel fuels by trucks and buses, industrial processes, and fires. Particulate pollution can cause nose and throat irritation and heart and lung problems. PM is measured in microns, which are one millionth of a meter in length (or one-thousandth of a millimeter). PM₁₀ is small

(respirable) PM measuring no more than 10 microns in diameter, while PM_{2.5} is fine PM measuring no more than 2.5 microns in diameter (USEPA 2018).

Sulfur Dioxide (SO₂)

SO₂ is formed primarily by the combustion of sulfur-containing fossil fuels, especially at power plants and industrial facilities. SO₂ is linked with a number of adverse effects on the respiratory system (USEPA 2018).

3.2.2 Toxic Air Contaminants

The two primary emissions of concern regarding health effects for land development projects are CO and diesel particulate matter (DPM). The health effects of CO are described above. DPM is a mixture of many exhaust particles and gases that are produced when an engine burns diesel fuel. Compounds found in diesel exhaust are carcinogenic. Long-term exposure is linked with increased risk of cardiovascular, cardiopulmonary, and respiratory disease and lung cancer (OSHA 2015). Short-term (acute) effects of diesel exhaust include eye, nose, throat, lung irritation, headaches, and dizziness.

3.3 Regulatory Framework

The following sections provide a brief summary of applicable federal, state, and local regulations related to air quality.

3.3.1 Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 is the comprehensive federal law that regulates air emissions from stationary and mobile sources. The CAA authorizes the USEPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. Current NAAQS (USEPA 2015) are listed in Table 2. The USEPA has classified air basins (or portions thereof) as being in “attainment,” “nonattainment,” or “unclassified” for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation.

Table 2. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ⁽¹⁾ Concentration ⁽³⁾	Federal Standards ⁽²⁾	
			Primary ^(3, 4)	Secondary ^(3, 5)
Ozone (O ₃) ⁽⁶⁾	1-hour	0.09 ppm (180 µg/m ³)	--	Same as Primary Standards
	8-hour	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)	
Respirable Particulate Matter (PM ₁₀) ⁽⁷⁾	24 Hour	50 µg/m ³	150 µg/m ³	Same as Primary Standards
	Annual Arithmetic Mean	20 µg/m ³	--	
Fine Particulate Matter (PM _{2.5}) ⁽⁷⁾	24 Hour	--	35 µg/m ³	Same as Primary Standards
	Annual Arithmetic Mean	12 µg/m ³	12 µg/m ³	15 µg/m ³
Carbon Monoxide (CO)	8-hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	None
	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	
Nitrogen Dioxide (NO ₂) ⁽⁸⁾	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as Primary Standard
	1-hour	0.18 ppm (470 µg/m ³)	100 ppb (188 µg/m ³)	
Sulfur Dioxide (SO ₂) ⁽⁹⁾	Annual Arithmetic Mean	--	0.030 ppm (for certain areas)	--
	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm (for certain areas)	--
	3 Hour	--	--	0.5 ppm (1300 µg/m ³)
	1-hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	--
Lead ^(10, 11)	30 Day Average	1.5 µg/m ³	--	--
	Calendar Quarter	--	1.5 µg/m ³ (for certain areas)	Same as Primary Standard
	Rolling 3-Month Average ⁽⁷⁾	--	0.15 µg/m ³	
Visibility Reducing Particles ⁽¹²⁾	8-hour	See Footnote 12.	No Federal Standards	
Sulfates	24 Hour	25 µg/m ³	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	No Federal Standards	
Vinyl Chloride ⁽¹⁰⁾	24 Hour	0.01 ppm (26 µg/m ³)	No Federal Standards	

Source: CARB 2016.

Notes:

⁽¹⁾ California standards for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, PM₁₀, PM_{2.5}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride standards 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 O₃, particulate matter, and those based on annual averages) are not to be exceeded more than once a year. The O₃ standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, 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 USEPA for further clarification and current national policies.
- (3) Concentration expressed first in units in which it was promulgated. Equivalent units given in parenthesis are based on 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; parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- (4) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- (5) National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- (6) On October 1, 2015, the national 8-hour O₃ primary and secondary standards were lowered from 0.075 to 0.070 ppm.
- (7) On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} 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.
- (8) 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.
- (9) On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
- (10) The CARB had 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.
- (11) The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ 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.
- (12) 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 classifies the SDAB as in attainment for the federal CO, NO₂, lead (Pb), PM_{2.5}, and SO₂ standards (SDAPCD 2018a). It is unclassifiable for PM₁₀ with respect to federal air quality standards. The SDAB is classified as marginal nonattainment for ozone. Table 3 lists the attainment status of San Diego County for the criteria pollutants.

The CAA requires states to develop a plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. These plans, known as State Implementation Plans (SIP), are developed by state and local air quality management agencies and submitted to USEPA for approval. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them.

Table 3. San Diego County Attainment Status

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone (O ₃)	1 Hour	Nonattainment	Attainment
	8 Hour		Nonattainment (Marginal)
Respirable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	Nonattainment	No Federal Standard
	24 Hour		Unclassified ⁽¹⁾
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	Nonattainment	Attainment
	24 Hour	No State Standard	
Carbon Monoxide (CO)	8 Hour	Attainment	Attainment
	1 Hour		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	No State Standard	Attainment
	1 Hour	Attainment	No Federal Standard
Lead	Calendar Quarter	No State Standard	Attainment
	30 Day Average	Attainment	No Federal Standard
	Rolling 3-Month Average	No State Standard	Attainment
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	No State Standard	Attainment
	24 Hour	Attainment	Attainment
	1 Hour	Attainment	No Federal Standard
Sulfates	24 Hour	Attainment	No Federal Standard
Hydrogen Sulfide	1 Hour	Unclassified	No Federal Standard
Visibility Reducing Particulates	8 Hour (10:00 a.m. to 6:00 p.m., PST)	Unclassified	No Federal Standard

Source: USEPA 2018, SDAPCD 2016.

Notes:

⁽¹⁾ Unclassified; indicates data are not sufficient for determining attainment or nonattainment.

3.3.2 State

California Ambient Air Quality Standards

The CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. The CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. California has adopted ambient standards (the California Ambient Air Quality Standards or CAAQS) that are equal to or stricter than the federal standards for six criteria air pollutants. The California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations, and provided in Table 2. Similar to the federal CAA, areas have been designated as attainment, nonattainment or unclassified with respect to the state ambient air quality standards. San Diego County is in nonattainment with the CAAQS for O₃, PM₁₀, and PM_{2.5}. The

County is designated as an attainment area for the state CO, NO, SO₂, Pb, and sulfates standards. Hydrogen sulfide and visibility-reducing particles are unclassified in San Diego County.

3.3.3 Regional

Regional Air Quality Strategy

The CARB requires air districts to endeavor, achieve and maintain the state ambient air quality standards by the earliest practicable date and develop plans for attaining the CAAQS. Under the requirements of the California Clean Air Act (CCAA), each local air district is required to develop its own strategies to achieve both state and federal air quality standards for its air basin. The SDAPCD prepared the 2016 Regional Air Quality Strategy (RAQS) (SDAPCD 2016c) to address San Diego County's nonattainment status for ozone. The RAQS was developed pursuant to CCAA requirements and identifies feasible emission control measures to provide progress in San Diego County toward attaining the state O₃ standard. The pollutants addressed are VOCs and NO_x, precursors to the photochemical formation of O₃ (the primary component of smog). The RAQS control measures focus on emission sources under the SDAPCD's authority, specifically stationary emission sources (such as power plants, manufacturing and industrial facilities) and some area-wide sources (such as water heaters, architectural coatings, and consumer products). However, the emission inventories and emission projections in the RAQS reflect the impact of all emission sources and all control measures, including those under the jurisdiction of CARB (on-road and off-road motor vehicles) and the USEPA (aircraft, ships, and trains). Thus, while legal authority to control various pollution sources is divided among agencies, the SDAPCD is responsible for reflecting federal, state, and local measures in a single plan to achieve state O₃ standards in San Diego County. The RAQS was initially adopted by the SDAPCD in 1992 and has generally been updated on a triennial basis, in accordance with State requirements. The latest version of the RAQS was adopted by the SDAPCD in 2016 (SDAPCD 2016c).

State Implementation Plan

The CAA requires plans which identify how nonattainment areas will attain and/or maintain the NAAQS. The CAA requires the USEPA to review each plan, any plan revisions, and to approve the plan/revisions if consistent with the CAA. Key elements of these plans include emission inventories, emission control strategies and rules, air quality data analyses, modeling, air quality progress and attainment or maintenance demonstrations. Individual district plans are submitted to CARB as part of the California State Implementation Plan (SIP). Additionally, as mentioned previously, because San Diego County is currently designated as a non-attainment area for the 8-hour O₃ NAAQS, the SDAPCD must submit to the USEPA, through CARB, an implementation plan as part of the California SIP identifying control measures and associated emission reductions as necessary to demonstrate attainment of the federal eight hour O₃ standard within

San Diego County. The SDAPCD most recently updated its Eight-Hour Ozone Attainment Plan for San Diego County in 2016 (SDAPCD 2016b).

San Diego Air Pollution Control District

The SDAPCD has jurisdiction over air quality programs in San Diego County. State and local government projects, as well as projects proposed by the private sector, are subject to SDAPCD requirements if the sources are regulated by the SDAPCD. Additionally, the SDAPCD, along with CARB, maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County, including those referenced below in Section 4, Existing Air Quality. The stations are used to measure and monitor criteria and toxic air pollutant levels in the ambient air.

Neither the RAQS nor the SIP address emissions of particulate matter in the SDAB. The SDAPCD prepared the report, *Measures to Reduce Particulate Matter in San Diego County*, in December 2005 (SDAPCD 2005). This report identifies existing federal, state, and local measures to control particulates in the SDAB. This plan outlines potential measures for particulate matter control that the SDAPCD may further evaluate for future rule adoption. It does not outline a plan or implementation actions for AAQS compliance for land development projects. As such, this report is not discussed further in this analysis.

The SDAPCD is also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws. All development projects within the city may be subject to the following SDAPCD rules (as well as others):

- **Rule 51, Nuisance.** Prohibits emissions that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health, or safety of any such persons or the public; or which cause injury or damage to business or property.
- **Rule 52, Particulate Matter.** Establishes limits to the discharge of any particulate matter from non-stationary sources.
- **Rule 54, Dust and Fumes:** Establishes limits to the amount of dust or fume discharged into the atmosphere in any 1 hour.
- **Rule 55, Fugitive Dust Control.** Sets restrictions on visible fugitive dust from construction and demolition projects.
- **Rule 67, Architectural Coatings.** Establishes limits to the VOC content for coatings applied within the SDAPCD.

In addition, Rule 1200 applies to any new, relocated, or modified emission unit, which may increase emissions of one or more TAC. Rule 1210 implements the public notification and risk

reduction requirements of the State Air Toxics “Hot Spots” Act, and requires facilities to reduce risks to acceptable levels within five years (CARB 2007a).

3.3.4 City of Vista

The City of Vista (City) has adopted a Resource Conservation and Sustainability Element in its updated General Plan 2030 Update (City of Vista 2011). Included in the Element are Air Quality Goals and Policies. The following policy applies to the project: RCS Policy 1.4 Amend the Grading Ordinance as needed to reduce fugitive dust generated as a result of construction projects. Require implementation of best management practices (BMPs) to stabilize disturbed land, including but not limited to short-term methods during construction (e.g., watering active construction areas, covering open stockpiles, and applying non-toxic soil stabilizers on unpaved access roads and temporary parking areas) and permanent methods post construction (e.g., vegetation or revegetation, installation of landscape, etc.).

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Section 4 Existing Air Quality

The following section describes the existing ambient air quality environment in the vicinity of the proposed project site.

4.1 Air Quality Monitoring Data

Air monitoring data is collected at several stations near the project. For ambient concentrations of O₃ and NO₂, the closest monitoring station is the Camp Pendleton station, approximately 8.6 miles northwest of the project site. For ambient concentrations of PM₁₀ and PM_{2.5}, the closest monitoring station is the San Diego – Kearny Villa Road station, approximately 25 miles to the south of the project. No CO data is available from any monitoring site in the SDAB after 2012, and no data is available for SO₂ after 2013. However, with one exception for CO during the firestorms of October 2003, the SDAB has not violated the state or federal standards for CO or SO₂ in the last 20 years (SDAPCD 2017).

Table 4 presents a summary of the highest pollutant concentrations monitored during the three most recent years (2015 through 2017) for which the SDAPCD has reported data for the relevant stations. As shown in Table 4, the state standard for the one-hour O₃ concentration was not exceeded from 2015 to 2017. The 8-hour O₃ concentration was exceeded for the state standard each year from 2015 to 2017, and the federal standard was exceeded in 2015 and 2017. The state or federal standards for the daily PM₁₀, PM_{2.5}, or NO₂ were not exceeded at any time from 2015 to 2017.

Table 4. San Diego Air Quality Monitoring Data

Pollutant	Monitoring Station	2015	2016	2017
Ozone				
Maximum 1-hour concentration (ppm)	Camp Pendleton	0.093	0.083	0.094
Days above 1-hour state standard (>0.09 ppm)		0	0	0
Maximum 8-hour concentration (ppm)		0.076	0.073	0.082
Days above 8-hour state standard (>0.07 ppm)		2	5	5
Days above 8-hour federal standard (>0.075 ppm)		1	0	1
Respirable Particulate Matter (PM₁₀)				
Peak 24-hour concentration (µg/m ³)	San Diego - Kearny Villa Road station	39	36	46
Days above state standard (>50 µg/m ³)		0	0	0
Days above federal standard (>150 µg/m ³)		0	0	0
Fine Particulate Matter (PM_{2.5})				
Peak 24-hour concentration (µg/m ³)	San Diego - Kearny Villa Road station	25.7	20.3	27.5
Days above federal standard (>35 µg/m ³)		0	0	0
Nitrogen Dioxide				
Peak 1-hour concentration (ppm)	Camp Pendleton	60	72	63
Days above state 1-hour standard (0.18 ppm)		0	0	0

Source: CARB 2018.

Notes: PPM = parts per million, µg/m³ = micrograms per cubic meter

Section 5 **Thresholds of Significance**

This section outlines the thresholds of significance that are applied in this report to assess the significance of potential project impacts related to air quality.

5.1 Thresholds of Significance Defined

Based on Appendix G of the CEQA Guidelines (OPR 2018), the project would result in a significant impact if it would:

- Conflict or obstruct the implementation of the San Diego Regional Air Quality Strategy (RAQS) or applicable portions of the State Implementation Plan (SIP);
- Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people;
- Result in a cumulatively considerable net increase of PM₁₀ or O₃ precursors (NO_x and VOCs).

The threshold of significance applicable to each of the above potential impacts are described in greater detail below. The impacts associated with construction and operation of the project were evaluated for significance based on these significance criteria.

5.1.1 Air Quality Plans

A project that proposes growth that exceeds growth assumptions assumed in the emissions inventories of the RAQS and SIP would potentially conflict with these plans, because it would potentially result in mobile source emissions that would exceed the projected emissions inventory.

5.1.2 Criteria Pollutants

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SDAB, and this regional impact is cumulative rather than attributable to any one source, and is representative of an existing air quality violation. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and probable future development projects. To determine whether a project would result in a cumulatively considerable net increase of PM₁₀ or O₃ precursors (NO_x and VOCs), or contribute to a potential violation of the remaining criteria pollutants, project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD. As part of its air quality permitting

process, the APCD has established thresholds in Rule 20.2 for the preparation of Air Quality Impact Assessments (AQIA) to determine whether new sources of emissions would generate emissions that could result in an AAQS violation in the SDAB.

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality. Since APCD does not have an AQIA threshold for emissions of VOCs, the use of the threshold for VOCs from the City of San Diego's Significance Thresholds (City of San Diego 2016) is appropriate. The screening thresholds are included in Table 5.

Table 5. Screening Level Criteria for Air Quality Impact

Pollutant	Total Emissions (pounds/day)	Total Emissions (tons/year)
PM ₁₀	100	15
PM _{2.5} ¹	55	10
NO _x	250	40
SO _x	250	40
CO	550	100
VOC ²	137	13.7

Source: City of San Diego 2016.

Notes:

¹ PM_{2.5} is not currently regulated under SDAPCD Rule 20.2. PM_{2.5} thresholds are based on SCAQMD significance thresholds 5 lbs/day for construction and operation, and 10 tons/year for operation.

² VOCs are not regulated under SCAPCD Rule 20.2. VOC thresholds based on City of San Diego's Significance Determination Thresholds.

The thresholds listed in Table 5 represent screening-level thresholds that can be used to evaluate whether project-related emissions could cause a significant impact on air quality. Emissions below the screening-level thresholds would not cause a significant impact.

For nonattainment pollutants (ozone, with ozone precursors NO_x and VOCs, and PM₁₀), if emissions exceed the thresholds, the project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality.

5.1.3 Sensitive Receptors

Sensitive receptors are typically defined as people at schools, hospitals, resident care facilities, day-care centers, or other facility that may house individuals with health conditions that would be adversely impacted by changes in air quality. The nearest sensitive receptor is a home 250 feet to the south of the project.

Impacts related to carbon monoxide are considered significant if carbon monoxide emissions create a hot spot where either the California 1-hour standard of 20 ppm or the federal and California eight-hour standard of 9.0 ppm is exceeded. Impacts related to DPM are assessed

based on compliance with applicable diesel regulations and the screening level criteria presented in Table 5.

Additionally, SDAPCD permitting requirements and the CARB Air Quality and Land Use Handbook (CARB 2005) are used to evaluate the potential for hazardous emissions from potential charbroiler use.

5.1.4 Odors

APCD Rule 51 (Public Nuisance) also prohibits emission of any material which causes nuisance to a considerable number of persons or endangers the comfort, health or safety of any person. A project that proposes a use which would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors.

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Section 6 Project Impacts

The proposed project's potential to result in air quality impacts, as outlined in Section 5, are addressed in the following sections.

6.1 Consistency with the Regional Air Quality Strategy

The following analysis addresses the proposed project's consistency with applicable air quality plans.

6.1.1 Impact Analysis

The California SIP is the document that sets forth the state's strategies for achieving federal air quality standards. The applicable air quality planning documents for the SDAPCD are the 2016 RAQS (SDAPCD 2016c) and the 2008 Eight-Hour Ozone Attainment Plan for San Diego County (SDAPCD 2016b), which is the SDAPCD portion of the California SIP. The RAQS and Ozone Attainment Plan were prepared by the SDAPCD for CARB to be included as part of the SIP. These plans demonstrate how the SDAB would either maintain or strive to attain the NAAQS. Both documents were developed in conjunction with each other by the SDAPCD to reduce regional O₃ emissions.

The SDAPCD relies on information from CARB and the San Diego Association of Governments (SANDAG) related to projected growth in the county, vehicle trips, and all other source emissions in order to project future emissions and develop appropriate strategies for the reduction of source emissions through regulatory controls. The majority of regional emissions (67 percent) result from motor vehicle emissions. These emissions are primarily reduced through emissions standards, which are established by the CARB, but further reduced at the district level through incentive programs to encourage the use of alternative transportation (SDAPCD 2016c). Because of the limited jurisdiction that the SDAPCD has over mobile source emissions, and even smaller control that individual projects have on influencing the public's ultimate use of motor vehicles, compliance with the RAQS is based on whether or not an individual project would comply with the emissions projections contained in the plan. Reduction strategies are applied to the region as a whole and were determined to be adequate to meet the NAAQS based on the regional emissions projections. A project that proposes growth that exceeds growth assumptions would potentially conflict with the RAQS and SIP because it would potentially result in mobile source emissions that would exceed the projected emissions inventory.

The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and the City of Vista and County of San Diego general plans. The CARB mobile source emissions projections and the SANDAG growth projections are based on population and vehicle use trends and land use plans developed by the cities and the County as part of the development of their respective general plans. As such, projects that propose

development consistent with, or less than, the growth projections anticipated by a general plan would be consistent with the RAQS and SIP. The proposed project is consistent with the Vista General Plan 2030 Update (GP 2030 Update) land use designation for the project site (General Commercial (GC)) and would not result in additional growth beyond what is planned for the site. Therefore, implementation of the proposed project would not exceed the General Plan growth projections for the site and the project would not conflict with RAQS or the SIP.

6.1.2 Mitigation Measures

None required.

6.2 Cumulatively Considerable Net Increase of Criteria Pollutants

The SDAB is classified as a non-attainment area for the state 1-hour ozone standard, the federal and state 8-hour ozone standards, and the state PM₁₀ and PM_{2.5} standards. The following section evaluates the potential for construction and operation of the project to exceed ambient air quality standards and result in cumulatively considerable pollutant emissions.

6.2.1 Impact Analysis

Implementation of the proposed project would result in both construction and operational air pollutant emissions, as described in the following sections.

6.2.1.1 Construction Emissions

Construction activities would result in temporary increases in air pollutant emissions. These emissions would be generated in the forms of fugitive dust emissions from earth disturbance during fine site grading, and exhaust emissions from operation of heavy equipment and vehicles during construction. Paving activities would emit volatile organic compounds during off-gassing.

Daily air pollutant emissions during construction were estimated using the assumed worst-case activity data and the emission factors included in the CalEEMod model, Version 2016.3.2. For the purposes of modeling a worst-case construction scenario, it was assumed that construction of the proposed project would take approximately 12 months, beginning in the spring of 2019, and concluding in 2020. Table 6 shows the anticipated construction phases and assumed length of each phase. Each phase of construction would occur sequentially, with no overlap between the phases. Refer to Appendix A for detailed model output and assumptions.

As the project site is currently vacant, no demolition is required. The site would be prepared by removing existing vegetation and then graded. It is assumed that all of the 4.12-acre site would be disturbed during grading. Approximately 5,500 cubic yards (CY) of cut and 7,700 CY of fill would be required, resulting in an anticipated soil import of 2,200 CY. Model

defaults were used to estimate emissions associated with construction equipment, daily vehicle trips, and haul trip distance.

Table 6. Construction Phases

Construction Phase	Time Period
Site Prep	1 month
Grading/Trenching	2 weeks
Paving	1 month
Building	10 months
Architectural Coating	1 month

Table 7 presents a summary of estimated maximum daily winter construction emissions for the proposed project. CalEEMod calculates winter and summer emission results. In this case, the winter emissions are slightly higher than the summer emissions. Thus, winter represents the worst case scenario and is reported in Table 7.

Table 7. Maximum Daily Construction Emissions (lbs/day)

	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Year 2019	4.41	45.63	22.59	0.05	20.82	12.19
Year 2020	30.49	21.34	18.63	0.035	1.62	1.20
Maximum	30.49	45.63	22.59	0.05	20.82	12.19
Daily Threshold	137	250	550	250	100	55
Significant?	No	No	No	No	No	No

Source: CalEEMod, Version 2016.3.2. See Appendix A for model output.

The estimate of unmitigated winter construction emissions indicates that the proposed project would not exceed the significance thresholds for any criteria air pollutants during any phase of construction. The proposed project would result in a less than cumulatively considerable impact related to criteria pollutant emissions during construction.

6.2.1.2 Operational Emissions

Operational emissions associated with the proposed project were also calculated using CalEEMod software. Emissions are produced as a result of fuel combustion emissions from vehicles, space heating, water heating, landscape maintenance equipment; and VOC emissions from periodic repainting of interior and exterior surfaces. CalEEMod calculates winter and summer emission results. In this case, the summer emissions are slightly higher than the winter emissions. Thus, summer represents the worst case scenario and is reported below.

CalEEMod does not include charbroiler emissions. Charbroiling emissions are calculated based on emissions factors available from CARB (CARB 2007b). CARB developed the emissions factors shown in Table 8 to show emissions factors for various cooking operations.

Table 8. CARB Commercial Cooking Emission Factors (Average and Range)

Cooking Equipment	Emission Factors (lbs/1000 lbs food cooked)	
	VOC	PM
Underfired charbroiler	1.8 (0.4-4)	16 (3.5-33)
Automated charbroiler	1.5 (0.1-2.2)	3.7 (1.5-7.5)
Griddles - all	0.18 (0-0.35)	2.4 (0-5)
• Clamshell type	0	1
• Flat	0.2 (0.1-0.35)	2.8 (0-5)
Deep-fat fryer	0.17 (0-0.25)	0.03 (0-0.1)

Source: CARB 2007b.

Notes: Values are average results of 4-5 tests by Welch and Norbeck (1998). Ranges show the min/max of test results.

Analyses of particle size distributions showed that PM emissions are almost exclusively comprised of particles smaller than 10 micron (Welch and Norbeck 1998). For the purposes of this analysis, PM_{2.5} emissions are conservatively assumed to be identical to PM₁₀ emissions. The tenants of the proposed drive-through restaurants are not known with certainty at this time; however, at least one of the four restaurants is anticipated to be a coffee shop and would not be expected to require use of a charbroiler. It is conservatively assumed that the remaining three restaurants would utilize an underfired charbroiler. Underfired charbroilers are assumed because these are most commonly used at restaurants and represent the worst-case scenario. As such, the assumed PM emission factor is 16 lbs PM per ton meat cooked, and the VOC emission factor would be 1.8 lbs VOC per ton meat cooked. Based on information from CARB for typical restaurant meat consumption, it is assumed that an average of 70 pounds of meat would be cooked each day (CARB 2002). Appendix B provides the calculation details for charbroiler emissions.

Total project operational emissions are presented in Table 9. As shown in Table 9, project criteria pollutant emissions would be below the significance thresholds for all pollutants. Operational impacts would be less than cumulatively considerable.

Regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal AAQS, which are intended to protect public health. Because the project would be below the applicable thresholds, it would not contribute to regional long-term health impacts related to non-attainment of the AAQS.

Table 9. Maximum Daily Operational Emissions (lbs/day)

Source	VOC	NO _x	CO	SO _x	Total PM ₁₀	Total PM _{2.5}
Area	0.70	<1	0.02	0	<1	<1
Energy	0.07	0.66	0.55	<1	0.05	0.05
Mobile	8.33	27.63	61.05	0.12	9.18	2.55
Charbroilers	0.378	NA	NA	NA	3.36	3.36
Total	9.48	28.29	61.62	0.12	12.59	5.96
Daily Threshold	137	250	550	250	100	55
Significant?	No	No	No	No	No	No

Source: CalEEMod, Version 2016.3.2. See Appendix A for model output.

6.2.2 Mitigation Measures

None required.

6.3 Impacts to Sensitive Receptors

The following section evaluates the proposed project's potential to impact sensitive receptors.

6.3.1 Impact Analysis

Sensitive receptors typically include schools (preschool-12th grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality. The primary emissions of concern regarding health effects for land development projects are CO and DPM. Additionally, because the proposed project would include restaurants that may use charbroilers, formaldehyde, acetaldehyde, and acrolein are also addressed in the analysis below.

6.3.1.1 Carbon Monoxide Hot Spots

Areas with high vehicle density, such as congested intersections and parking garages, have the potential to create high concentrations of carbon monoxide, known as carbon monoxide hot spots. An air quality impact is considered significant if carbon monoxide emissions create a hot spot where either the California 1-hour standard of 20 ppm or the federal and California eight-hour standard of 9.0 ppm is exceeded. This typically occurs at severely congested intersections (LOS E or worse) (Caltrans 2010).

The traffic study prepared for the proposed project (LLG 2018) used project-level trip generation analysis and distribution to evaluate the intersections in the project vicinity that would carry the majority of project traffic. Three study area intersections would operate at LOS E or F under all three traffic impact analysis scenarios (existing + project, short-term, and long-term):

- N. Melrose Drive / Vista Way
- S. Melrose Drive / Hacienda Drive
- Vista Village Drive / Hacienda Drive

The CALINE 4 model was used to estimate the potential CO impact at each of these intersections during the most congested peak hour scenario. To estimate the most conservative conditions for the hot spot analysis, CO concentrations were analyzed for the long-term (Year 2030) scenario because the greatest delays would occur at all three intersections under this scenario. Table 10 displays the estimated CO concentrations at the nearest receptor from the affected intersections. As shown in Table 10, CO concentrations would not exceed the state or federal AAQS for 1-hour or 8-hour CO concentrations at either intersection.

This impact would be less than significant.

Table 10. Estimated Carbon Monoxide Concentrations

Intersection	1-Hour CO Concentration (ppm)	8-Hour CO Concentration (ppm)	Impact?
N. Melrose Drive / Vista Way	3.9	2.7	No
S. Melrose Drive / Hacienda Drive	3.9	2.7	No
Vista Village Drive / Hacienda Drive	3.8	2.7	No
Significance Threshold	20.0 (State) / 35.0 (Federal)	9.0 (State and Federal)	

Source: CALINE 4 using EMFAC 2017 emission factors.

Notes: CO = carbon monoxide

Modeling assumptions: 1-hour CO concentrations were calculated using the worst-case wind angle scenario in the CALINE 4 model. Receptor locations were set 30 feet from the roadway centerline. CO emission factors were generated using the EMFAC 2017 model, using the CO emission factor for Year 2030 for the total vehicle mix during conditions in January at a temperature of 40 degrees Fahrenheit and 40 percent relative humidity. The assumed vehicle speed was 5 miles per hour. An ambient 1-hour carbon monoxide concentration of 3.7 ppm was used to reflect ambient conditions. Ambient data obtained from the Escondido-East Valley Parkway station from 2012, the most recent year available at the station closest to the site. The 8-hour carbon monoxide concentration was based on a persistence factor of 0.7 for urban uses (Caltrans 2010).

6.3.1.2 Diesel Particulate Matter

According to the San Diego County Guidelines for Determining Significance, Air Quality (County of San Diego 2007), DPM is the primary TAC of concern for typical land use projects that do not propose stationary sources of emissions regulated by SDAPCD.

During construction, the primary source of DPM would be construction equipment. As shown in Table 7, implementation of the project would not result in PM emissions above the screening level threshold during construction. Additionally, because DPM is considered to have long-term health effects and construction would be a short-term event, emissions would not result in a significant long-term health risk to surrounding receptors.

Based on the SCAQMD’s “Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis” (SCAQMD 2003), projects that should be analyzed for DPM emissions include truck stops, distribution centers, and transit centers, which could be sources of DPM from heavy-duty diesel trucks.

The proposed commercial uses do not include stationary sources of emissions regulated by the SDAPCD; however, operation of the proposed project would require some diesel delivery truck trips to the project businesses. In 2004, the CARB adopted an Airborne Toxic Control Measure

(ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to DPM and other TACs and their pollutants. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. The measure does not allow diesel fueled commercial vehicles to idle for more than five minutes at any given time. The measure may be enforced by either CARB or SDAPCD. Violations may be reported to the San Diego County Sheriff's Department (Sheriff's Department), and violators are subject to a fine. Potential localized air toxic impacts from on-site sources of DPM would be minimal since only a limited number of heavy-duty trucks would be required per month to supply the proposed businesses, and the trucks that would frequent the area would not idle for extended periods of time.

6.3.1.3 Other Pollutants

Based on CARB siting recommendations within the Air Quality and Land Use Handbook (CARB, 2005), a detailed health risk assessment should be conducted for proposed sensitive receptors within 1,000 feet of a warehouse distribution center, within 300 feet of a large gas station, 50 feet of a typical gas dispensing facility or within 300 feet of a dry cleaning facility that uses perchloroethylene (PCE), among other siting recommendations (CARB 2005). The proposed project would not accommodate any of the uses listed in the CARB siting recommendations. As previously stated, up to three of the proposed restaurant spaces may include use of charbroilers for cooking, and would generate exhaust from cooking operations. CARB does not list charbroilers or other food processing equipment as facility that would potentially emit air pollutants of concern. Equipment located at eating establishments that is used for preparing food for human consumption at the same establishment is also specifically exempted from SDAPCD operating permit requirements¹.

Additionally, VOC and particulate matter emissions from the potential use of charbroilers were quantified and compared to the SDAPCD AQIA thresholds above in Table 9. Table 11 compares the charbroiler emissions to the AQIA annual screening levels. As shown in Table 9 and Table 10, emissions would be well below the AQIA thresholds. Therefore, operation of charbroilers on-site would not expose sensitive receptors to substantial pollutant concentrations.

Table 11. Annual Emissions from Charbroiler Use at Project (tons/year)

	PM ₁₀	PM _{2.5}	VOC
Charbroiler Emissions	0.6	0.6	0.07
Screening Level	15	10	13.7
Significant?	No	No	No

Source: CARB 2007b. See Appendix B for calculations.

¹ SDAPCD Rule 11, Exemptions from Rule 10 Permit Requirements

6.3.2 Mitigation Measures

None required.

6.4 Odor Impacts

The following section evaluates the potential for construction and operation of the project to produce impacts related to odor.

6.4.1 Impact Analysis

Potential odor impacts from construction and operation are addressed separately in the following sections.

6.4.1.1 Construction

Construction associated with the proposed project could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. However, all diesel equipment would not be operating at once, and construction near existing receptors would be temporary. The closest sensitive receptor is a residence located approximately 250 feet south of the project site. As shown in Table 7, construction emissions of SO_x, the pollutant most associated with noxious odors, would be minimal. As such, odor impacts during construction would be less than significant.

6.4.1.2 Operation

The CARB's Air Quality and Land Use Handbook (CARB 2005) includes a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. The proposed project does not propose any of these uses. As previously described, use of charbroilers would result in exhaust emissions. However, use of cooking equipment is not listed as a typical source of odors. Additionally, air quality analyses prepared for similar uses (a proposed In-and-Out restaurant and proposed Burger King restaurant) in the City of Vallejo determined that these restaurant would not be a source of significant odors (City of Vallejo 2015, Meridian Consultants 2017). Therefore, operation of the proposed project would not generate significant odors and this impact would be less than significant.

6.4.2 Mitigation Measures

None required.

Section 7 Conclusion

The proposed project would result in emissions of air pollutants for both the construction phase and operational phases of the project. Implementation of the proposed project would be consistent with regional growth projections. Therefore, implementation of the proposed project would not conflict with or obstruct the implementation of the RAQS or applicable portions of the SIP.

Construction emissions would include emissions associated with fugitive dust, heavy construction equipment and construction workers commuting to and from the site. The emissions associated with construction would be temporary, and would not exceed the screening level thresholds for criteria pollutants. The increase in operational air pollutant emissions (both area and mobile) associated with the proposed project would not exceed the screening level thresholds established by the SDAPCD. The proposed project would not result in significant criteria pollutant emissions.

Impacts associated with exposure of sensitive receptors to substantial pollutant concentrations were analyzed for CO, DPM, and other TACS. Impacts would be less than significant. Construction and operation of the project would not be expected to generate significant odors.

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Section 8 **References**

- Caltrans (California Department of Transportation). 2010. Transportation Project-Level Carbon Monoxide Protocol, Revised December 1997. (Searchable PDF Version). October 13, 2010.
- CARB (California Air Resources Board). 2011. Toxic Air Contaminant Identification List. Page last updated July 18, 2011. <http://www.arb.ca.gov/toxics/id/taclist.htm>. Accessed October 1, 2018.
- CARB. 2002. Estimation Methodology: Miscellaneous Process - Cooking (Sacramento), Section XX: Miscellaneous Process — Cooking. Accessed October 10, 2018.
- CARB. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. April. Available at <https://www.arb.ca.gov/ch/handbook.pdf>. Accessed October 2, 2018.
- CARB. 2007a. "Hot Spots" Inventory Guidelines". <https://www.arb.ca.gov/ab2588/2588guid.htm>. Accessed October 2, 2018.
- CARB. 2007b. Area Source Emissions Inventory Emissions Factors. https://www.arb.ca.gov/ei/areasrc/ccosmeth/att_g_cooking.doc. Accessed October 2, 2018.
- CARB. 2016. Ambient Air Quality Standards. <https://www.arb.ca.gov/research/aaqs/aaqs2.pdf>. Accessed October 10, 2018.
- CARB. 2018. iADAM Air Quality Data Statistics. <http://www.arb.ca.gov/adam/trends/trends1.php>. Accessed September 25, 2018.
- City of Vallejo. 2015. Vallejo ARCO AM/PM Gas Station, Convenience Mart and Quick Serve Restaurant Draft Initial Study and Mitigated Negative Declaration. June 2015.
- City of Vista. 2011. City of Vista General Plan.
- County of San Diego, 2007. Guidelines for Determining Significance, Air Quality, Department of Planning and Land Use, <https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf>. Accessed October 1, 2018
- LLG (Linscott Law & Greenspan). 2019. Transportation Impact Analysis – Sunroad Restaurants. Vista, California. June 10.
- Meridian Consultants. 2017. Update to the Technical Air Quality and Greenhouse Gas Analysis Proposed In-N-Out Burger Restaurant, 720 Admiral Callaghan Lane, Vallejo, CA. June 8, 2017.
- OPR (Office of Planning and Research). 2018. CEQA Guidelines, Appendix G, Environmental Checklist Form, http://resources.ca.gov/ceqa/guidelines/Appendix_G.html. Accessed September 25, 2018.
- OSHA (Occupational Safety and Health Administration). 2015. Hazard Alert – Diesel Exhaust/Diesel Particulate Matter. https://www.osha.gov/dts/hazardalerts/diesel_exhaust_hazard_alert.html. Accessed October 1, 2018.

- SCAQMD (South Coast Air Quality Management District). 2003. Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, August 2003. <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis>. Accessed October 2, 2018.
- SDAPCD (San Diego Air Pollution Control District). 2005. Measures to Reduce Particulate Matter in San Diego County, <http://sandiegohealth.org/air/SB656StaffRpt.pdf>. Accessed October 2, 2018.
- SDAPCD. 2016a. 2008 Eight-Hour Ozone Attainment Plan for San Diego County Final - December 2016. <https://www.SDAPCD.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/8-Hr-O3%20Attain%20Plan-08%20Std.pdf>. Accessed October 2, 2018.
- SDAPCD. 2016b. Air Quality Planning. <https://www.sdapcd.org/content/sdc/apcd/en/air-quality-planning/attainment-status.html>. Accessed October 2, 2018
- SDAPCD. 2016c. 2016 Revision of the Regional Air Quality Strategy for San Diego County (RAQS). <https://www.SDAPCD.org/content/sdc/apcd/en/air-quality-planning.html>. Accessed October 2, 2018.
- SDAPCD. 2017. San Diego County Air Pollution Control District Annual Network Plan 2018. Submitted for USEPA review June 29, 2018. https://www.sandiegocounty.gov/content/dam/sdc/apcd/monitoring/2017_Network_Plan.pdf. Accessed October 2, 2018.
- SDAPCD. 2018. Attainment Status. <http://www.SDAPCD.org/content/sdc/apcd/en/air-quality-planning/attainment-status.html>. Accessed October 2, 2018.
- SJVAPCD (San Joaquin Valley Air Pollution Control District). 2009. Appendix B – Baseline Emissions and Emission Reduction Analysis for Revised Proposed Amendments to Rule 4692 (Commercial Charbroilers), August 20, 2009, Table 2 – Composite Emission Factor, page B-4.
- USEPA (United States Environmental Protection Agency). 2015. “Nonattainment Areas for Criteria Pollutants (Green Book)”. Available at <https://www.epa.gov/green-book>. Accessed October 2, 2018.
- USEPA, 2016. Criteria Air Pollutants, <https://www.epa.gov/criteria-air-pollutants>, Accessed October 1, 2018.
- Welch W.A. and Norbeck J.M., 1998. Development of Emission Test Methods and Emission Factors for Various Commercial Cooking Operations. ASHRAE Transactions.
- WRCC (Western Regional Climate Center), 1957-2016. Cooperative Climatological Data Summaries – Vista 2 NNE, California. <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9378>. Accessed October 1, 2018.

Appendix A. CalEEMod Modeling Data

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Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

Sunroad Commercial Plaza Project
San Diego Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.20	1000sqft	0.11	4,200.00	0
Parking Lot	163.00	Space	3.53	85,000.00	0
Fast Food Restaurant with Drive Thru	13.74	1000sqft	0.37	13,740.00	0
Strip Mall	5.58	1000sqft	0.11	5,580.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MW hr)	458.86	CH4 Intensity (lb/MW hr)	0.018	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

Project Characteristics - Utility intensity adjusted to reflect 43% renewables (SDG&E 2018) consistent with methodology from Ascent Environmental (2016)

Land Use - Parking lot acreage adjusted so the site total is equal to 4.12 acres. General light industry represents car wash.

Construction Phase - Info provided by Sunroad.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No demolition is needed.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition - No demolition needed for this project.

Grading - Entire site to be graded. No import/export

Architectural Coating -

Vehicle Trips - Adjusted to be consistent with October 2018 TIA Primary Trips and SANDAG Not so Brief Guide Trip lengths

Energy Use - Adjust to reflect anticipated reductions beyond Title 24

Water And Wastewater - Car wash water use estimated by 17 gallons per customer and 60 percent use of recycled water. Outdoor water use from landscape plan

Sequestration -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	8.00	10.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	18.00	20.00
tblEnergyUse	T24E	8.23	7.98
tblEnergyUse	T24E	3.18	2.83
tblGrading	AcresOfGrading	5.00	4.12
tblGrading	AcresOfGrading	0.00	4.12
tblGrading	MaterialImported	0.00	2,200.00
tblLandUse	LandUseSquareFeet	65,200.00	85,000.00
tblLandUse	LotAcreage	0.10	0.11
tblLandUse	LotAcreage	1.47	3.53
tblLandUse	LotAcreage	0.32	0.37
tblLandUse	LotAcreage	0.13	0.11
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.018
tblProjectCharacteristics	CO2IntensityFactor	720.49	458.86
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSequestration	NumberOfNewTrees	0.00	100.00
tblVehicleTrips	CC_TL	7.30	4.70
tblVehicleTrips	CC_TL	7.30	2.80
tblVehicleTrips	CC_TL	7.30	4.30
tblVehicleTrips	CNW_TL	7.30	4.70
tblVehicleTrips	CNW_TL	7.30	2.80

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

tblVehicleTrips	CNW_TL	7.30	4.30
tblVehicleTrips	CW_TL	9.50	4.70
tblVehicleTrips	CW_TL	9.50	2.80
tblVehicleTrips	CW_TL	9.50	4.30
tblVehicleTrips	ST_TR	722.03	429.70
tblVehicleTrips	ST_TR	1.32	141.60
tblVehicleTrips	ST_TR	42.04	26.40
tblVehicleTrips	SU_TR	542.72	429.70
tblVehicleTrips	SU_TR	0.68	141.60
tblVehicleTrips	SU_TR	20.43	26.40
tblVehicleTrips	WD_TR	496.12	429.70
tblVehicleTrips	WD_TR	6.97	141.60
tblVehicleTrips	WD_TR	44.32	26.40
tblWater	IndoorWaterUseRate	971,250.00	1,005,000.00
tblWater	OutdoorWaterUseRate	266,205.52	0.00
tblWater	OutdoorWaterUseRate	253,328.02	906,675.00

2.0 Emissions Summary

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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	0.7008	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0436
Energy	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502		791.9344	791.9344	0.0152	0.0145	796.6405
Mobile	8.3315	27.6279	61.0499	0.1243	9.0346	0.1419	9.1765	2.4149	0.1328	2.5477		12,632.3572	12,632.3572	1.0180		12,657.8079
Total	9.1048	28.2880	61.6235	0.1283	9.0346	0.1921	9.2267	2.4149	0.1830	2.5979		13,424.3324	13,424.3324	1.0333	0.0145	13,454.4920

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	0.7008	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0436
Energy	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502		791.9344	791.9344	0.0152	0.0145	796.6405
Mobile	8.1434	26.3982	57.0451	0.1082	7.5746	0.1262	7.7008	2.0246	0.1181	2.1427		11,001.8515	11,001.8515	0.9425		11,025.4137
Total	8.9168	27.0584	57.6187	0.1122	7.5746	0.1764	7.7510	2.0246	0.1683	2.1929		11,793.8268	11,793.8268	0.9578	0.0145	11,822.0978

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	2.07	4.35	6.50	12.54	16.16	8.17	15.99	16.16	8.05	15.59	0.00	12.15	12.15	7.31	0.00	12.13

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	6/28/2019	5	20	
2	Grading	Grading	7/1/2019	7/12/2019	5	10	
3	Building Construction	Building Construction	7/15/2019	4/17/2020	5	200	
4	Paving	Paving	4/20/2020	5/15/2020	5	20	
5	Architectural Coating	Architectural Coating	5/18/2020	6/12/2020	5	20	

Acres of Grading (Site Preparation Phase): 4.12

Acres of Grading (Grading Phase): 4.12

Acres of Paving: 3.53

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 35,280; Non-Residential Outdoor: 11,760; Striped Parking Area: 5,100 (Architectural Coating – sqft)

OffRoad Equipment

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	275.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	45.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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					18.2847	0.0000	18.2847	9.9543	0.0000	9.9543			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	4.3350	45.5727	22.0630	0.0380	18.2847	2.3904	20.6751	9.9543	2.1991	12.1534		3,766.4529	3,766.4529	1.1917		3,796.2445

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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	0.0799	0.0554	0.5263	1.4800e-003	0.1479	1.0500e-003	0.1489	0.0392	9.7000e-004	0.0402		147.0445	147.0445	4.7400e-003		147.1631
Total	0.0799	0.0554	0.5263	1.4800e-003	0.1479	1.0500e-003	0.1489	0.0392	9.7000e-004	0.0402		147.0445	147.0445	4.7400e-003		147.1631

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.2281	0.0000	8.2281	4.4794	0.0000	4.4794			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	4.3350	45.5727	22.0630	0.0380	8.2281	2.3904	10.6185	4.4794	2.1991	6.6786	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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	0.0799	0.0554	0.5263	1.4800e-003	0.1479	1.0500e-003	0.1489	0.0392	9.7000e-004	0.0402		147.0445	147.0445	4.7400e-003		147.1631
Total	0.0799	0.0554	0.5263	1.4800e-003	0.1479	1.0500e-003	0.1489	0.0392	9.7000e-004	0.0402		147.0445	147.0445	4.7400e-003		147.1631

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					6.4899	0.0000	6.4899	3.3621	0.0000	3.3621			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856		2,936.8068	2,936.8068	0.9292		2,960.0361
Total	2.5805	28.3480	16.2934	0.0297	6.4899	1.3974	7.8873	3.3621	1.2856	4.6477		2,936.8068	2,936.8068	0.9292		2,960.0361

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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	0.2454	8.3449	1.9109	0.0215	0.4805	0.0319	0.5124	0.1317	0.0305	0.1622		2,339.9993	2,339.9993	0.2183		2,345.4555
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	0.0666	0.0462	0.4386	1.2300e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		122.5371	122.5371	3.9500e-003		122.6359
Total	0.3120	8.3911	2.3495	0.0227	0.6038	0.0328	0.6365	0.1644	0.0313	0.1957		2,462.5364	2,462.5364	0.2222		2,468.0914

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					2.9205	0.0000	2.9205	1.5129	0.0000	1.5129			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856	0.0000	2,936.8068	2,936.8068	0.9292		2,960.0361
Total	2.5805	28.3480	16.2934	0.0297	2.9205	1.3974	4.3178	1.5129	1.2856	2.7985	0.0000	2,936.8068	2,936.8068	0.9292		2,960.0361

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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	0.2454	8.3449	1.9109	0.0215	0.4805	0.0319	0.5124	0.1317	0.0305	0.1622		2,339.9993	2,339.9993	0.2183		2,345.4555
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	0.0666	0.0462	0.4386	1.2300e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		122.5371	122.5371	3.9500e-003		122.6359
Total	0.3120	8.3911	2.3495	0.0227	0.6038	0.0328	0.6365	0.1644	0.0313	0.1957		2,462.5364	2,462.5364	0.2222		2,468.0914

3.4 Building Construction - 2019

Unmitigated Construction On-Site

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

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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	0.0864	2.2336	0.6388	4.8500e-003	0.1219	0.0158	0.1377	0.0351	0.0151	0.0502		519.3005	519.3005	0.0438		520.3945
Worker	0.1998	0.1385	1.3158	3.6900e-003	0.3697	2.6300e-003	0.3723	0.0981	2.4300e-003	0.1005		367.6112	367.6112	0.0119		367.9077
Total	0.2862	2.3721	1.9546	8.5400e-003	0.4915	0.0184	0.5100	0.1331	0.0176	0.1507		886.9116	886.9116	0.0556		888.3022

Mitigated Construction On-Site

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

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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	0.0864	2.2336	0.6388	4.8500e-003	0.1219	0.0158	0.1377	0.0351	0.0151	0.0502		519.3005	519.3005	0.0438		520.3945
Worker	0.1998	0.1385	1.3158	3.6900e-003	0.3697	2.6300e-003	0.3723	0.0981	2.4300e-003	0.1005		367.6112	367.6112	0.0119		367.9077
Total	0.2862	2.3721	1.9546	8.5400e-003	0.4915	0.0184	0.5100	0.1331	0.0176	0.1507		886.9116	886.9116	0.0556		888.3022

3.4 Building Construction - 2020

Unmitigated Construction On-Site

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

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

3.4 Building Construction - 2020

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	0.0705	2.0280	0.5738	4.8000e-003	0.1219	0.0101	0.1320	0.0351	9.6800e-003	0.0448		515.6320	515.6320	0.0415		516.6693
Worker	0.1870	0.1249	1.2026	3.5700e-003	0.3697	2.5900e-003	0.3723	0.0981	2.3900e-003	0.1004		356.0094	356.0094	0.0107		356.2773
Total	0.2575	2.1529	1.7765	8.3700e-003	0.4915	0.0127	0.5042	0.1331	0.0121	0.1452		871.6414	871.6414	0.0522		872.9466

Mitigated Construction On-Site

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

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

3.4 Building Construction - 2020

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	0.0705	2.0280	0.5738	4.8000e-003	0.1219	0.0101	0.1320	0.0351	9.6800e-003	0.0448		515.6320	515.6320	0.0415		516.6693
Worker	0.1870	0.1249	1.2026	3.5700e-003	0.3697	2.5900e-003	0.3723	0.0981	2.3900e-003	0.1004		356.0094	356.0094	0.0107		356.2773
Total	0.2575	2.1529	1.7765	8.3700e-003	0.4915	0.0127	0.5042	0.1331	0.0121	0.1452		871.6414	871.6414	0.0522		872.9466

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1837	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005		1,804.7070	1,804.7070	0.5670		1,818.8830
Paving	0.4624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6461	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005		1,804.7070	1,804.7070	0.5670		1,818.8830

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

3.5 Paving - 2020

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	0.0831	0.0555	0.5345	1.5900e-003	0.1643	1.1500e-003	0.1655	0.0436	1.0600e-003	0.0446		158.2264	158.2264	4.7600e-003		158.3455
Total	0.0831	0.0555	0.5345	1.5900e-003	0.1643	1.1500e-003	0.1655	0.0436	1.0600e-003	0.0446		158.2264	158.2264	4.7600e-003		158.3455

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	1.1837	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005	0.0000	1,804.7070	1,804.7070	0.5670		1,818.8830
Paving	0.4624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6461	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005	0.0000	1,804.7070	1,804.7070	0.5670		1,818.8830

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

3.5 Paving - 2020

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	0.0831	0.0555	0.5345	1.5900e-003	0.1643	1.1500e-003	0.1655	0.0436	1.0600e-003	0.0446		158.2264	158.2264	4.7600e-003		158.3455
Total	0.0831	0.0555	0.5345	1.5900e-003	0.1643	1.1500e-003	0.1655	0.0436	1.0600e-003	0.0446		158.2264	158.2264	4.7600e-003		158.3455

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	30.2086					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	30.4508	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

3.6 Architectural Coating - 2020

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	0.0374	0.0250	0.2405	7.1000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201		71.2019	71.2019	2.1400e-003		71.2555
Total	0.0374	0.0250	0.2405	7.1000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201		71.2019	71.2019	2.1400e-003		71.2555

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	30.2086					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	30.4508	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

3.6 Architectural Coating - 2020

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	0.0374	0.0250	0.2405	7.1000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201		71.2019	71.2019	2.1400e-003		71.2555
Total	0.0374	0.0250	0.2405	7.1000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201		71.2019	71.2019	2.1400e-003		71.2555

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Unbundle Parking Cost

Transit Subsidy

Encourage Telecommuting and Alternative Work Schedules

Employee Vanpool/Shuttle

Provide Ride Sharing Program

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.1434	26.3982	57.0451	0.1082	7.5746	0.1262	7.7008	2.0246	0.1181	2.1427		11,001.8515	11,001.8515	0.9425		11,025.4137
Unmitigated	8.3315	27.6279	61.0499	0.1243	9.0346	0.1419	9.1765	2.4149	0.1328	2.5477		12,632.3572	12,632.3572	1.0180		12,657.8079

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	5,904.08	5,904.08	5904.08	3,566,943	2,991,075
General Light Industry	594.72	594.72	594.72	565,874	473,865
Parking Lot	0.00	0.00	0.00		
Strip Mall	147.31	147.31	147.31	127,619	107,016
Total	6,646.11	6,646.11	6,646.11	4,260,436	3,571,956

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Fast Food Restaurant with Drive	4.70	4.70	4.70	2.20	78.80	19.00	29	21	50
General Light Industry	2.80	2.80	2.80	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	4.30	4.30	4.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
General Light Industry	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
Parking Lot	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
Strip Mall	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable 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	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502		791.9344	791.9344	0.0152	0.0145	796.6405
NaturalGas Unmitigated	0.0726	0.6600	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502		791.9344	791.9344	0.0152	0.0145	796.6405

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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					
Fast Food Restaurant with Drive Thru	6564.33	0.0708	0.6436	0.5406	3.8600e-003		0.0489	0.0489		0.0489	0.0489		772.2744	772.2744	0.0148	0.0142	776.8636
General Light Industry	133.019	1.4300e-003	0.0130	0.0110	8.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004		15.6493	15.6493	3.0000e-004	2.9000e-004	15.7423
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
Strip Mall	34.0915	3.7000e-004	3.3400e-003	2.8100e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		4.0108	4.0108	8.0000e-005	7.0000e-005	4.0346
Total		0.0726	0.6599	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502		791.9345	791.9345	0.0152	0.0145	796.6405

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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					
Fast Food Restaurant with Drive Thru	6.56433	0.0708	0.6436	0.5406	3.8600e-003		0.0489	0.0489		0.0489	0.0489		772.2744	772.2744	0.0148	0.0142	776.8636
General Light Industry	0.133019	1.4300e-003	0.0130	0.0110	8.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004		15.6493	15.6493	3.0000e-004	2.9000e-004	15.7423
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
Strip Mall	0.0340915	3.7000e-004	3.3400e-003	2.8100e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		4.0108	4.0108	8.0000e-005	7.0000e-005	4.0346
Total		0.0726	0.6599	0.5544	3.9600e-003		0.0502	0.0502		0.0502	0.0502		791.9345	791.9345	0.0152	0.0145	796.6405

6.0 Area Detail

6.1 Mitigation Measures Area

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7008	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0436
Unmitigated	0.7008	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0436

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	0.1655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5334					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8000e-003	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0436
Total	0.7008	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0436

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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	0.1655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5334					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8000e-003	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0436
Total	0.7008	1.8000e-004	0.0192	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0408	0.0408	1.1000e-004		0.0436

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

- Institute Recycling and Composting Services

9.0 Operational Offroad

Sunroad Commercial Plaza Project - San Diego Air Basin, Winter

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

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

11.0 Vegetation

**Appendix B. Charbroiling PM, VOC, and
Aldehyde Emissions Calculations**

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Charbroiling PM and VOC Emissions Calculations

Project Name: Sunroad Commercial Plaza

Particulate Matter

Pound of meat/day/restaurant	70	pounds
Emissions Factor	16	PM/1000 lbs of meat cooked
Total per restaurant	1.12	lbs PM10/day/restaurant
Number of restaurants	3	restaurants
Project Daily Total	3.36	lbs PM10/day
Project Yearly Total	0.6132	tons PM10/year

[California Air Resources Board. 2007. Area Source Emissions Inventory Emissions Factors. https://www.arb.ca.gov/ei/areasrc/ccosmeth/att_g_cooking.doc. Accessed October 2, 2018.](https://www.arb.ca.gov/ei/areasrc/ccosmeth/att_g_cooking.doc)

Source for EF:

Volatile Organic Compounds

Pound of meat/day/restaurant	70	pounds
Emissions Factor	1.8	VOC/1000 lbs of meat cooked
Total per restaurant	0.126	lbs VOC/day/restaurant
Number of restaurants	3	restaurants
Project Daily Total	0.378	lbs VOC/day
Project Yearly Total	0.068985	tons VOC/year

[California Air Resources Board. 2007. Area Source Emissions Inventory Emissions Factors. https://www.arb.ca.gov/ei/areasrc/ccosmeth/att_g_cooking.doc. Accessed October 2, 2018.](https://www.arb.ca.gov/ei/areasrc/ccosmeth/att_g_cooking.doc)

Source for EF:

Greenhouse Gas Emissions Analysis

Sunroad Commercial Project

September 2019

Prepared for:

**Sunroad Enterprises
4445 Eastgate Mall, Suite 400
San Diego, California 92121**

Prepared by:



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Appendices

Appendix A: CalEEMod Output

Acronyms and Abbreviations

AB	Assembly Bill
AEP	Association of Environmental Professionals
BAU	business-as-usual
CAA	Clean Air Act
CalEEMod	California Emission Estimator Model
CALGreen	California Green Building Standards Code
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CAT	California Climate Action Team
CCR	California Code of Regulations
CEP	Climate Education Partners
CEQA	California Environmental Quality Act
CH ₄	Methane
City	City of Vista
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalent
EO	Executive Order
EPIC	Energy Policy Initiatives Center
GHG	greenhouse gas
HCFC-22	chlorodifluoromethane
HFC	hydrofluorocarbon
HVAC	heating, ventilation, and air conditioning
IPCC	Intergovernmental Panel on Climate Change
LCFS	Low Carbon Fuel Standard
MMT	million metric tons
MT	metric ton
MTCO _{2e}	Metric tons of carbon dioxide equivalent
N ₂ O	Nitrous oxide
NHTSA	National Highway Traffic Safety Administration
PFC project	perfluorocarbons Sunroad Commercial Project
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District

SF square foot
SF₆ sulfur hexafluoride
SLO County APCD San Luis Obispo County Air Pollution Control District
SR State Route

VMT vehicle miles traveled

ZNE Zero Net Energy

Executive Summary

This greenhouse gas (GHG) emissions analysis assesses the potential GHG-related impacts of implementation of the proposed Sunroad Commercial Project (project), which would include a car wash, restaurants with drive-throughs, and retail space. The project site is located at the intersection of Vista Village Drive and Hacienda Drive in the city of Vista. This report presents an evaluation of existing conditions in the region, thresholds of significance, and potential impacts associated with construction and operation of the project.

Results of this report show that there would not be significant impacts from the project related to potential hazards related to climate change. However, direct GHG emissions of the proposed project would exceed the City of Vista's (City's) interim threshold for evaluating the significance of GHG emissions. Mitigation Measures GHG-1 through GHG-6 would reduce impacts, but not to a less than significant level. As such, emissions would be significant and would potentially conflict with the City's Climate Action Plan (CAP) and long-term statewide emissions reduction goals. Impacts would remain significant with implementation of feasible mitigation.

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1.3 Regulatory Requirements and Project Design Features That Reduce GHG Emissions

The following regulatory requirements and project features are assumed as part of the proposed project.

1.3.1 Regulatory Requirements

1.3.1.1 Energy Efficiencies

The project would be designed to meet current Title 24 energy-efficiency standards, including requirements for insulation; window treatments and glazing; heating, ventilation, and air conditioning (HVAC) unit efficiency; and roof anchors and pre-wiring to allow for the installation of photovoltaic systems. Although the buildings would be required to be solar-ready, installation of solar panels is not currently proposed and are not included as a project feature.

1.3.1.2 Water Conservation

Section 18.56 of the City's Development Code, Water Efficient Landscaping, requires that the project submit a landscape documentation package demonstrating compliance with water efficiency requirements. In accordance with City requirements, the following water conservation features have been incorporated into the proposed landscape plan:

- All plant materials selected for this site were appropriate for the geographical location and local climate, including their adaptability to drought.
- Plants with similar water use requirements would be grouped together.
- 100 percent of landscape areas would be planted with low or moderate water use plants. No high water use plants are proposed.
- Irrigation sections/hydrozones would be separated by considering plant species factor, plant density and microclimate. If low water use plants are mixed with moderate water use plants in the same hydrozone, the moderate water use factor is used for water use calculations to conservatively estimate maximum water use.
- The irrigation system would utilize a low-volume distribution system with a master valve, flow sensor, check valves, automatic controllers water budgeting capability, weather station, rain shut-off.
- No turf is proposed. All tree, shrub and groundcover areas would be dressed with 3" layer of mulch moisture retention and to discourage weeds.
- There are no special landscape areas proposed for this project.

1.3.1.3 Solid Waste Reduction

In accordance with Assembly Bill (AB) 341 and the 2016 CALGreen standards, the project would provide areas for storage and collection of recyclables.

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Section 2 Environmental Setting

2.1 Global Climate Change Overview

Climate change refers to any substantial change in measures of climate (such as temperature, precipitation, or wind) lasting for decades or longer. According to the U.S. Environmental Protection Agency (USEPA), the earth's climate has changed many times during the planet's history, including events ranging from ice ages to long periods of warmth. Historically, natural factors such as volcanic eruptions, changes in the earth's orbit, and the amount of energy released from the sun have affected the earth's climate. Some GHGs, such as water vapor, occur naturally and are emitted to the atmosphere through natural processes, while others are emitted through human activities. Since the 1700s, human activities associated with the Industrial Revolution have also changed the composition of the atmosphere and therefore very likely are influencing the earth's climate. For over the past 200 years, the burning of fossil fuels, such as coal and oil, and deforestation has increased CO₂ concentrations in the atmosphere (USEPA 2018).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effects of GHGs, the earth's temperature would be about 34 degrees Celsius cooler (CAT 2007). However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

2.2 Greenhouse Gases

Carbon dioxide (CO₂) enters the atmosphere through the burning of fossil fuels, solid waste, trees and wood products, and as a result of other chemical reactions such as through the manufacturing of cement. Globally, the largest source of CO₂ emissions is the combustion of fossil fuels in power plants, automobiles, industrial facilities, and other similar sources (USEPA 2018). Methane (CH₄) is emitted from a variety of both natural and human-related sources, including fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management (USEPA 2017c). Nitrous oxide (N₂O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste (USEPA 2017c). Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) are synthetic, powerful GHGs that are emitted from a variety of industrial processes, and the production of chlorodifluoromethane. Construction or operation of the proposed project would not include any industrial processes, and chlorodifluoromethane has been mostly phased out of use in the U.S. (UNEP 2012); therefore, these GHGs are not discussed further in this report.

Individual GHGs have varying heat-trapping properties and atmospheric lifetimes. Table 2-1 identifies the carbon dioxide equivalent (CO₂e) and atmospheric lifetimes of basic GHGs. The CO₂e is a consistent methodology for comparing GHG emissions because it normalizes various

GHG emissions to a consistent measure. Each GHG is compared to CO₂ with respect to its ability to trap infrared radiation, its atmospheric lifetime, and its chemical structure. For example, CH₄ is a GHG that is 28 times more potent than CO₂; therefore, one metric ton (MT) of CH₄ is equal to 28 MTCO_{2e}.

Table 2-1. Global Warming Potentials and Atmospheric Lifetimes of Common GHGs

GHG	Formula	100-Year Global Warming Potential ¹	Atmospheric Lifetime
Carbon dioxide	CO ₂	1	~100
Methane	CH ₄	28	12
Nitrous oxide	N ₂ O	265	121

Source: CARB 2014. Consistent with CalEEMod Version 2016.3.2.

Notes: CH₄ = methane; CO₂ = carbon dioxide; GHG = greenhouse gas; N₂O = nitrous oxide

¹ The warming effects over a 100-year time frame relative to other GHGs.

2.2.1 Carbon Dioxide

CO₂ enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and also as a result of other chemical reactions such as through the manufacturing of cement. Globally, the largest source of CO₂ emissions is the combustion of fossil fuels in power plants, automobiles, industrial facilities, and other similar sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and petroleum-based products also produce CO₂ emissions. CO₂ is also removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle. As part of the carbon cycle, billions of tons of atmospheric CO₂ are removed from the atmosphere by oceans and growing plants, also known as “sinks,” and are emitted back into the atmosphere annually through respiration, decay, and combustion, also known as “sources.” When in balance, the total CO₂ emissions and removals from the entire carbon cycle are roughly equal. Since the Industrial Revolution in the 1700s, human activities, such as the burning of oil, coal and gas or deforestation, have increased CO₂ concentrations in the atmosphere (USEPA 2018).

2.2.2 Methane

CH₄ is emitted from a variety of both human-related and natural sources. Human-related activities include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. CH₄ is emitted during the production and transport of fossil fuels. CH₄ emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. It is estimated that 60 percent of global CH₄ emissions are related to human activities. Natural sources of CH₄ include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. Natural processes in soil and chemical reactions in the atmosphere help remove CH₄ from the atmosphere (USEPA 2018).

2.2.3 Nitrous Oxide

N₂O is produced by both natural and human-related sources. N₂O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. Primary human-related sources of N₂O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production. N₂O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. Globally, about 40 percent of total N₂O emissions come from human activities (USEPA 2018).

2.3 Global, National, Statewide, and Local Greenhouse Gas Inventories

In an effort to evaluate and reduce the potential adverse impact of climate change, global, national, state, and local organizations have conducted GHG inventories to estimate levels of and trends in GHG emissions and removals. The following summarizes these GHG inventories.

2.3.1 Global

Worldwide anthropogenic GHG emissions in 2010 were approximately 49,000 million metric tons (MMT) CO_{2e}, including ongoing emissions from industrial and agricultural sources and emissions from land use changes (i.e., deforestation, biomass decay) (IPCC 2014). CO₂ emissions from fossil fuel use and industrial processes accounts for 65 percent of the total emissions of 49,000 MMT CO_{2e} (which includes land use changes) and all CO₂ emissions are 77 percent of the total GHG emissions. CH₄ emissions account for 16 percent and N₂O emissions for six percent of total GHG emissions (IPCC 2014).

2.3.2 National

The USEPA publication, Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016, provides a comprehensive emissions inventory of the nation's primary anthropogenic sources and sinks of GHGs. Total U.S. GHG emissions in 2016 were 6,511.3 MMTCO_{2e}, a decrease from 2015 by 1.9 percent. Emissions from transportation activities, in aggregate, accounted for the largest portion (28.5 percent) of total U.S. GHG emissions in 2016. Electric power generation accounted for the second largest portion (28.4 percent), while emissions from industry accounted for the third largest portion (21.6 percent) of total U.S. GHG emissions in 2016. Emissions from industry have in general declined over the past decade, due to a number of factors, including structural changes in the U.S. economy (i.e., shifts from a manufacturing-based to a service-based economy), fuel switching, and energy efficiency improvements. The remaining U.S. GHG emissions were contributed by, in order of magnitude, the agriculture, commercial, and residential sectors (USEPA 2018).

2.3.3 Statewide

Total California GHG emissions in 2016 were 429 MMTCO_{2e}, according to the California Greenhouse Gas Emissions Inventory for 2006 to 2016, which tracks the emissions of seven GHGs for the years 2000 through 2016. During the 2000 to 2016 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14 tons per person to 10.8 tons per person in 2016, a 23 percent decrease. The transportation sector remains the largest source of GHG emissions in the state, accounting for 39 percent of the inventory, and shows a small increase in emissions in 2016. Emissions from the electricity sector (16 percent in 2016) continue to decline due to growing zero-GHG energy generation sources. Emissions from the industrial sector contributed 21 percent to total GHG emissions in 2015 and 2016, the commercial sector contributed five percent, residential sector contributed seven percent, and agriculture contributed eight percent (CARB 2018a).

2.3.4 Local

The City prepared an inventory of community GHG emissions in 2005 to establish a baseline of GHG emissions for the preparation of the City's Climate Action Plan (CAP), adopted in 2013. The City is currently preparing an update of its CAP; however, it is not yet available. According to the 2005 GHG emissions inventory, the Vista community emitted approximately 547,039 MTCO_{2e} as a result of activities that took place within the transportation, residential energy use, commercial and industrial energy use, solid waste, and wastewater sectors. The largest contributors of GHG emissions were the transportation (57 percent), commercial/industrial energy use (20 percent), and residential energy use (16 percent) sectors. According to the CAP, under the business-as-usual scenario, Vista's GHG emissions are projected to grow approximately 14 percent above 2005 GHG emissions levels by the year 2020, from 547,039 MTCO_{2e} to 625,957 MTCO_{2e}. The City commits in the CAP to reduce its GHG emissions to 464,983 MTCO_{2e}, which is 15 percent below 2005 levels by 2020, consistent with Assembly Bill (AB) 32, described in Section 2.5, Regulatory Framework.

2.4 Regional Adverse Effects of Climate Change

As referenced in the City's CAP, the Regional Focus 2050 Working Paper and Technical Assessment (Focus 2050) explored what the San Diego region would be like in 2050 if current climate change trends continue (San Diego Foundation 2008). The range of impacts presented in Focus 2050 are based on projections of climate change on the San Diego region using three climate models and two emissions scenarios drawn from those used by the Intergovernmental Panel on Climate Change. A summary of the potential adverse effects of Climate Change on the San Diego region, as projected in Focus 2050, is provided below.

2.4.1 Climate

From observations and model historical simulations, it appears that temperatures began to warm more substantially in the 1970s. Some scientists attribute the change to the response to the effects of GHG accumulation, which began to increase substantially during this time. All of the climate model simulations exhibit warming across San Diego county, ranging from about 1.5 degrees Fahrenheit to 4.5 degrees Fahrenheit, with some differences in the timing and geographic distribution of the changes. The models predict greater warming in the summer than in winter, with surface air temperatures warming from 0.7 degrees Fahrenheit to more than two degrees Fahrenheit over that found in winter. Temperature changes for areas along the coast would be moderated by the influence of the Pacific Ocean, but interior areas, where the greatest population growth would occur, would experience the greatest temperature increase.

The months when San Diego county experiences the most extreme warm temperatures, currently in July and August, will likely begin in June and extend until September. It is estimated that the inland portion of the county may have more than a threefold increase in hot days in 2050. Experts generally conclude that rainfall will continue to vary widely from year to year, leaving the county highly vulnerable to drought.

2.4.2 Sea Level

If current climate change trends continue, rising sea levels will have a major impact on the San Diego region's environment and economy, particularly in coastal areas. When high tide occurs during a large storm, particularly in El Niño winters, flooding will threaten homes, businesses, and hotels in low-lying coastal communities such as Imperial Beach, Coronado, Mission Beach, La Jolla Shores, Del Mar, and Oceanside. Flooding may also impact military, port and airport operations. High surf events will last for more hours, with waves causing even greater coastal erosion and related damage. Rising sea levels will wear away the foundations of sea bluffs and significantly change the county's coastline. Sandy beaches and nearby wetlands serve as barriers to protect coastline developments from high surf. As these areas shrink from more intense wave activity, there may be a greater need for beach sand replenishment. More seawalls and breakwaters may need to be built to defend homes and businesses from coastal flooding. In addition to being extremely costly, these structures will destroy beaches and wetlands that do not have space to shift inland. Wetlands and estuaries could be devastated, leaving beaches exposed to more pollutants that endanger human and marine life.

2.4.3 Water Supply

The San Diego County Water Authority predicts an increase in water demand for San Diego county of around 20 percent, from 648,030 acre-feet/year (the 2005–2010 average) to about 785,685 acre-feet/year in 2035. About 84 percent of this demand is expected to come from imported sources (SDCWA 2010). By 2050, the expected demand will increase to 915,000 acre-

feet/year, which is an increase of 41 percent over the 2005-2010 period. By 2050, about 80 percent of the water supply is expected to be imported.

Drought years, which have historically increased water demand by another seven percent, might occur as much as 50 percent more often and be considerably drier. In drought years, parched soil soaks up more surface water and groundwater, increasing the need for imported and other water supplies. At the same time that the county's demand for water would increase, climate change could shrink the Colorado River flow (a major source of imported water for the county) by 20 percent or more. A decline in the Sierra Nevada snowpack, aggravated by increased temperatures, could impact the water flow of many northern California rivers which serve as primary sources of water to the California Aqueduct, a major source of imported water for the county. The county's water supply plans are likely to be severely challenged by climate change. Even with plans in place to conserve, recycle, and augment our available water, it is estimated San Diego county could face an 18 percent shortfall in water supply by 2050.

2.4.4 Wildfires

Fire occurrence has steadily increased in southern California, in direct proportion to human population growth as most ignitions are caused by human activities. Most fires start during the summer, when coastal sage and chaparral vegetation have dried to a highly flammable state. Fires that start during the fall, however, burn many more acres because flames are intensified and spread by hot, dry Santa Ana winds. It is not entirely clear from climate change models how Santa Ana conditions will affect San Diego regional fire regimes in the future. Some models predict a decrease in the frequency and intensity of Santa Ana conditions while others predict an increase, particularly during the fire season. If Santa Ana conditions increase significantly earlier in the fire season, this shift could increase the incidence of massive Santa Ana fires, because the winds will begin gusting during the time of year when most fires start. More fires that are frequent would threaten native plant species by not allowing sufficient recovery time before they burn again. This would allow weedy, non-native species, which thrive in post-fire conditions, to multiply. Weedy invaders dry out earlier in the year, catch fire more easily, and burn faster than native plants.

Additionally, if current trends continue, the San Diego region will experience a population increase, with more development and human activities in backcountry areas over the coming decades. As a result of climate change, we can expect higher spring temperatures, scorching summers, drier vegetation, and longer fire seasons. A simultaneous occurrence of all of these factors will increase the likelihood of more devastating firestorms similar to those that destroyed many homes and lives in unincorporated San Diego county during 2003 and 2007.

2.4.5 Ecosystems

San Diego county beaches, canyons, mountains and deserts support a vast variety of plants and animals, some of which are found nowhere else on the planet. This biodiversity is already under

stress from human population growth and land use changes that have broken up and reduced species habitat into fragmented areas. The impacts of climate change will add to the pressures on habitats and the species that live in the county. As a result, the locations where the temperature, moisture, and other environmental conditions are suitable for a particular species will shift. Plant and animal species are generally able to adapt to shifting habitats, but under existing trends, climate change would occur so rapidly that ecological conditions may shift faster than species are able to follow. To survive, some animals and plants will have to move up to 95 miles over the next century to find new habitat or they will face extinction. Drought and unusually warm years have already led to growing insect populations, such as bark beetles, which have attacked and killed drought-stressed trees in San Diego county. With warmer weather, the county's forests will lose even more trees. Ecological changes will cascade, as the loss of one species will challenge the ability of other species up and down the same food chain to survive. Top predators like coyotes may be lost if habitat patches become too small or isolated, and that can lead to an increase in smaller predators that prey on native songbirds.

2.4.6 Public Health

Increased heat, air pollution, wildfires, and infectious disease will cause illness and death in San Diego county, especially among the elderly, children, and the chronically ill. Californians experience the worst air quality in the nation, and San Diego region is currently out of compliance with the federal ozone standard. By 2050, more hot sunny days will increase ozone air pollution levels, which can exacerbate asthma and other respiratory and cardiovascular diseases. Fire-related injuries and death are likely to increase if intense wildfires occur more frequently. Wildfires can also be a significant contributor to air pollution. Wildfire smoke contains numerous toxic and hazardous pollutants that are dangerous to breathe and can worsen lung disease and other respiratory conditions.

Warmer temperatures year-round could lead to growing mosquito populations, increasing the occurrence of West Nile virus in the San Diego region. Hot weather could also bring tropical diseases such as malaria and dengue fever to the region for the first time. In coastal waters, conditions are likely to favor more frequent "red tides" or harmful algal blooms, which can harbor toxic bacteria and other diseases. In 2050, with an aging population and more residents living in areas with extreme-heat conditions and poor air quality, the San Diego region will face intensified public health concerns.

2.4.7 Energy Needs

If current climate change trends continue, warmer temperatures and a growing population will translate into big challenges for the San Diego region's energy supply by 2050. The main impact will be higher demand for electricity as a result of the greater need for summer cooling, especially in inland areas where both regional population growth and temperature increases will be highest.

Hotter summers and more frequent, longer and intense heat waves will increase peak demand for electricity, which could result in blackouts and power outages, without adequate planning.

2.5 Regulatory Framework

2.5.1 Federal

The following section describes the federal regulation relevant to the proposed project's GHG analysis, the Federal Clean Air Act (CAA).

2.5.1.1 Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. USEPA* that CO₂ is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO₂, CH₄, N₂O, HFC, PFC, and SF₆) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards require compliance with progressively more stringent GHG emission standards for the 2012 through 2025 vehicle model years.

2.5.2 State

The following section summarizes statewide GHG emissions targets relevant to the proposed project's GHG analysis.

2.5.2.1 Executive Order S-3-05

On June 1, 2005, California's Governor announced, through Executive Order (EO) S-3-05, the following statewide GHG emission reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels
- By 2020, California shall reduce GHG emissions to 1990 levels
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels

The first California Climate Action Team (CAT) Report to the Governor in 2006 contained recommendations and strategies to help ensure the targets in EO S-3-05 are met (CalEPA 2006). The latest CAT Biennial Report was released in 2010. It expands on the policy-oriented 2006 assessment and provides updated information and scientific findings. The details in the CAT Biennial Report include development of updated climate and sea-level projections using the latest information and tools available, and evaluation of climate change in the context of broader social changes such as land use changes and demographic shifts (CalEPA 2010).

2.5.2.2 Assembly Bill 32 – Global Warming Solution Act of 2006

In September 2006, the California State Legislature adopted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHG emissions in California. GHGs as defined under AB 32 include CO₂, CH₄, N₂O, CFCs, HFCs, PFCs, and SF₆. Under AB 32, CARB has the primary responsibility for reducing GHG emissions and continues the CAT to coordinate statewide efforts and promote strategies that can be undertaken by many other California agencies. AB 32 required CARB to adopt rules and regulations that would achieve GHG emissions equivalent to state-wide levels in 1990 by 2020.

In general, AB 32 directed CARB to do the following:

- Prepare and approve a Scoping Plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs by 2020, and update the Scoping Plan every five years
- Maintain and continue reductions in emissions of GHG beyond 2020
- Identify the statewide level of GHG emissions in 1990 to serve as the emissions limit to be achieved by 2020
- Identify and adopt regulations for discrete early actions that could be enforceable on or before January 1, 2010
- Adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit GHG emissions
- Convene an Environmental Justice Advisory Committee to advise the Board in developing and updating the Scoping Plan and any other pertinent matter in implementing AB 32
- Appoint an Economic and Technology Advancement Advisory Committee to provide recommendations for technologies, research and GHG emission reduction measures

Regarding the first bullet, the first update to the Scoping Plan was adopted in May 2014. The first update identifies opportunities for GHG reductions using existing and new funding sources, defines CARB's climate change priorities for the next five years, and establishes the plan for meeting the long-term goals of EO S-3-05, described below. The first update highlights California's progress toward meeting the 2020 GHG emission reduction goals defined in the initial scoping plan and evaluates how GHG reduction strategies may be aligned with other state priorities for water, waste, natural resources, clean energy, transportation, and land use. According to the first update, California is on track to meet the 2020 GHG emission reduction goal. While the first update discussed setting a mid-term target, the plan did not set a quantifiable target toward meeting the 2050 goal.

The 2017 Climate Change Scoping Plan Update was finalized in November 2017 and adopted in December 2017. This most recent scoping plan lays out the framework for achieving the 2030

reductions as established in EO B-30-15 and SB 32, described below. The 2017 Climate Change Scoping Plan Update identifies GHG reductions by emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels by 2030. CARB recommends statewide targets of no more than six metric tons CO_{2e} per capita by 2030 and no more than two metric tons CO_{2e} per capita by 2050. However, CARB specifically states that these goals are appropriate for the plan level (city, county, subregional, or regional level, as appropriate), but not for specific individual projects because they include all emissions sectors in the state.

The 2017 Climate Change Scoping Plan Update also includes recommendations for local governments when considering discretionary approvals and entitlements of individual projects through CEQA. Specifically, CARB recommends that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions, and that achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development. When designing mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits locally.

2.5.2.3 Senate Bill 32

Effective January 1, 2017, Senate Bill (SB) 32 (Stats. 2016, ch. 249) added a new Section 38566 to the California Health and Safety Code. It provides that “in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by [Division 25.5 of the Health and Safety Code], [CARB] shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030.” In other words, SB 32 requires California, by the year 2030, to reduce its statewide GHG emissions so that they are 40 percent below those that occurred in 1990.

2.5.2.4 Senate Bill 350

In the 2015 legislative session, the Legislature passed SB 350 (Stats. 2015, ch. 547). This legislation added language to the Public Utilities Code that essentially puts into statute the 2050 GHG reduction target already identified in EO S-3-05, albeit in the limited context of new state policies (1) increasing the overall share of electricity that must be produced through renewable energy sources and (2) directing certain state agencies to begin planning for the widespread electrification of the California vehicle fleet. Section 740.12(a)(1)(D) of the Public Utilities Code now states that “the Legislature finds and declares [that] . . . reducing emissions of [GHGs] to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050 will require widespread transportation electrification.” Furthermore, Section 740.12(b) now states that the California Public Utilities Commission (PUC), in consultation with CARB and the California

Energy Commission (CEC), must “direct electrical corporations to file applications for programs and investments to accelerate widespread transportation electrification to reduce dependence on petroleum, meet air quality standards, . . . and reduce emissions of greenhouse gases to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050.”

2.5.2.5 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve “the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State.” On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California’s enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2018b).

2.5.2.6 California Code of Regulations, Title 24, Part 6

California Code of Regulations, Title 24, Part 6, California’s Energy Efficiency Standards for Residential and Nonresidential Buildings, was first established in 1978 in response to a legislative mandate to reduce California’s energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. The Title 24 standards are updated periodically to allow the consideration and possible incorporation of new energy-efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2016 and went into effect January 1, 2017. The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential standards include improvements for attics, walls, water heating, and lighting. The standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards – the energy budgets – that vary by climate zone (of which there are 16 in California) and building type; thus, the standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

2.5.2.7 California Green Building Standards Code

The California Green Building Standards Code (24 CCR Part 11) is a code with mandatory requirements for new residential and nonresidential buildings throughout California. The code is

Part 11 of the California Building Standards Code in Title 24 of the California Code of Regulations (CBSC 2017). The current 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings went into effect on January 1, 2017.

The development of the CALGreen Code is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the governor. In short, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction.

The CALGreen Code contains requirements for storm water control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options that allow the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, such as heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

2.5.2.8 Assembly Bill 341

In 2011, the state legislature enacted AB 341 (California Public Resource Code, Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 also requires the provision of recycling service to commercial and residential facilities that generate four cubic yards or more of solid waste per week. AB 341 does not include a recycling target for local municipalities.

2.5.2.9 Executive Order S-01-07

EO S-01-07 was enacted by the Governor on January 18, 2007, and mandates that (1) a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least ten percent by 2020 and (2) a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California. According to the San Diego County Greenhouse Gas Inventory (EPIC 2013), the effects of the LCFS would be a ten percent reduction in GHG emissions from fuel use by 2020. On April 23, 2009, CARB adopted regulations to implement the LCFS.

2.5.3 Local

The following section summarizes the City's plans and guidance relevant to the proposed project's GHG analysis.

2.5.3.1 City of Vista Climate Action Plan

The City adopted a CAP in 2013 to reduce GHG emissions in Vista in order to comply with AB 32 and SB 97. The CAP provides an estimate of business-as-usual (BAU)¹ emissions by the year 2020, and a projection of the amount of reductions needed to meet the City’s requirement to reduce GHG emissions to 1990 levels. The CAP estimates that a reduction of 27,187 MTCO_{2e} will be required. The CAP adopts climate action measures designed to provide the necessary reductions to meet the 2020 target, including measures designed to reduce vehicle miles traveled, increase tree planting, and resources to encourage small-scale renewable energy installation.

2.5.3.2 City of Vista Interim Guidance

In 2016, the City developed interim guidance for evaluating GHG emissions from individual development projects within the city subject to CEQA in light of the 2015 Newhall Ranch project California Supreme Court Ruling.² The purpose of the City’s Interim Policy on Greenhouse Gas Emissions Significance Thresholds for CEQA (2016 Interim GHG Policy) (April 6, 2016) is to provide guidance for a consistent and objective evaluation of significant climate change impacts in compliance with AB 32 until the CAP can be updated to include such evaluation criteria. The interim guidance identifies a numerical “Bright Line” threshold based on a review of projects within Vista. It was determined that a level of 1,185 MTCO_{2e} would capture 90 percent of the city’s GHG emissions that are attributable to development projects. To determine if a project is making substantial progress towards meeting 2020 GHG emissions targets set forth in the CAP and AB 32, the total project GHG emissions in its first fully operational year must be less than the “Bright Line” threshold. If project emissions are below the threshold, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. If the project is estimated to provide annual emissions that are above 1,185 MTCO_{2e} per year, but at or below an Efficiency Threshold³ of 3.3 MTCO_{2e} per service population, that project would also result in less than significant impacts.

¹ The “business-as-usual” (BAU) scenario provides a forecast of GHG emissions in the year 2020 if consumption trends and behavior continue as they were in 2005, absent any new federal, state, regional, or local policies or actions to reduce emissions.

² Center for Biological Diversity v. California Department of Fish and Wildlife (11/30/2015, Case No. S217763).

³ Efficiency Thresholds apply necessary emissions reductions on a per-capita basis. This Efficiency Threshold represents the emissions per member of the service population (residents and employees) that, if achieved, would reduce the city’s GHG emissions to below its reduction goals.

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Section 3 **Thresholds of Significance and Methodology**

3.1 Significance Criteria

Given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

According to Appendix G of the State CEQA Guidelines, a project would be considered to have a significant climate change impact if it would:

- Generate GHG either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.
- Exacerbate exposure to adverse effects of climate change.

The determination of significance is governed by State CEQA Guidelines, Section 15064.4, which states that “the determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to . . . [use a quantitative model or qualitative model].” In turn, State CEQA Guidelines, Section 15064.4(b), clarifies that a lead agency should consider “whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.” Therefore, consistent with State CEQA Guidelines, Section 15064.4, the GHG analysis for the Project appropriately relies upon a threshold based on the exercise of careful judgement and believed to be appropriate in the context of this particular project.

The City’s interim guidance for evaluating individual development projects within the city is the applicable threshold for evaluating whether the proposed project would generate a level of GHG emissions that may have a significant impact on the environment. This threshold is appropriate because it is designed to evaluate whether a project would make substantial progress towards achieving the emissions reduction goals of AB 32 and the CAP. Following the methods described by the California Air Pollution Control Officers Association (CAPCOA) in their report CEQA & Climate Change, dated January 2008, the City conducted a review of projects within

the city to determine a 90 percent capture rate (i.e., the screening level of emissions that would capture and require GHG-reducing features for 90 percent of GHG emissions from anticipated development). As identified in the City's 2016 Interim GHG Policy, it was determined that a level of 1,185 MTCO_{2e} would capture 90 percent of the city's emissions that are attributable to development projects (Vista 2016).

In accordance with the City's guidance, if the total project annual GHG emissions are less than 1,185 MTCO_{2e}, then the project would not generate GHG emissions that would have a significant impact on the environment. If the project is estimated to provide annual emissions that are above 1,185 MTCO_{2e} per year, but at or below an Efficiency Threshold of 3.3 MTCO_{2e} per service population, that project would result in less than significant impacts. Service population is defined by population and employees of the proposed development. If the project is estimated to produce GHG emissions over the City's Efficiency Threshold, the impact is considered significant.

The plans, policies, or regulations adopted for the purpose of reducing GHG emissions that are applicable to the proposed project include the City's interim guidance and CAP, as well as AB 32 and SB 32.

3.2 Methodology and Assumptions

The project's GHG emissions were calculated using the California Emission Estimator Model (CalEEMod), Version 2016.3.2. The emission sources include construction (off-road vehicles), mobile (on-road vehicles), area (landscape maintenance equipment), energy, water and wastewater, and solid waste sources. GHG emissions are estimated in terms of total MTCO_{2e}.

3.2.1 Construction Emissions

Emissions from the construction phase of the project are assessed using CalEEMod. Construction of the proposed project is assumed to begin in June 2019 and last for approximately one year. The analysis assessed annual emissions from individual construction activities, including site preparation (one month), grading (two weeks), building construction (ten months), paving (one month), and architectural coating (one month). It is assumed that no overlap would occur between construction phases. The CalEEMod default construction equipment and vehicle trips are assumed for each construction phase. Soil import of 2,200 cubic yards is anticipated. A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report. Construction emissions were amortized over 30 years and added to operational emissions (SCAQMD 2008).

3.2.2 Operation Emissions

Operational emissions were also estimated using CalEEMod. The model estimates emissions from vehicle and stationary sources of pollutants. CalEEMod defaults for trip length,

distribution, and purpose were used. Trip generation rates were obtained from the Transportation Impact Analysis – Sunroad Restaurants (LLG 2019), which estimated that the project would generate 6,638 total primary vehicle trips from all proposed land uses. Primary trips are new trips on the street system that occur because a development is built, and therefore reflect the project’s net increase in vehicle emissions. Trip lengths were obtained for each land use type from San Diego Association of Governments (SANDAG) estimates (SANDAG 2002). The CalEEMod energy emissions intensities for SDG&E were modified to reflect that 43 percent of energy provided to customers in 2016 by SDG&E (2018) was from renewable sources. The Project Applicant anticipates that development on Pad 2 will exceed Title 24 energy standards by nine percent, and development on Pad 4 will exceed Title 24 by 12 percent (Jones, pers. comm. 2018). These building pads would both include retail and restaurant uses. Modeling assumes that the remaining development would meet but not exceed Title 24 standards. Total outdoor water use is estimated to be 906,675 gallons per year (SGPA 2018). CalEEMod defaults for indoor water use, natural gas, and solid waste are assumed for all land uses, with the exception of water use from the car wash, described below. All modeling output files are provided in Appendix A of this report.

CalEEMod does not include a default land use input for a car wash use. The General Light Industrial land use was selected to represent the energy use and solid waste disposal from the car wash because it reflects use of mechanical equipment. Water use is estimated based on information provided by the Project Applicant and industry publications. The proposed car wash is anticipated to use approximately 15–17 gallons of water per car and would use recycled water. This analysis conservatively assumes 17 gallons per car. The transportation impact analysis estimates 900 one-way vehicle trips associated with the car wash, or 450 visitors. It is assumed that ten percent of these trips would be employee trips, and the remaining visiting vehicles (405 vehicles) would receive a car wash, resulting in a water use of 2.513 million gallons per year. Based on an industry report, approximately 75 percent of water used in each car wash may be recycled water (Auto Laundry News 2013). This analysis conservatively assumes that only 60 percent of water in each wash would be recycled to account for water that is lost and not recycled. As such total potable water use required for the car wash would be approximately one million gallons per year. This estimate is also conservative because it assumed that the car wash would be in operation every day of the year.

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Section 4 Project Impacts

This section evaluates potential impacts of the proposed project related to the generation of GHG emissions.

4.1 Direct and Indirect Emissions of Greenhouse Gases

4.1.1 Construction Emissions

GHG emissions would be associated with the construction phases of the project through use of heavy equipment, truck trips, and vehicle trips by the construction crew commuting to the project site. Emissions of GHGs related to the construction of the project would be temporary. Estimated Construction Emissions by phase are provided in Table 4-1. As shown, total GHG emissions associated with construction would be approximately 399 MTCO_{2e} for the duration of construction. Amortized construction activities would contribute 13 MTCO_{2e} emissions per year for 30 years.

Table 4-1. Estimated Construction Emissions

Construction Phase	CO _{2e} Emissions (metric tons)
Site Preparation	36
Grading	25
Building Construction	317
Paving	18
Architectural Coating	3
Total Construction Emissions	399
<i>Amortized Construction Emissions</i>	13

Source: CalEEMod, Version 2016.3.2.

Notes: CO_{2e} = carbon dioxide equivalent

4.1.2 Operational Emissions

Table 4-2 summarizes the estimated annual emissions from operation of the project. These include GHG emissions associated with vehicles, buildings (natural gas, purchased electricity), water consumption (energy embodied in potable water), solid waste management (including transport and landfill gas generation), and area sources (landscape equipment).

Table 4-2. Estimated Annual Operational Emissions

Emissions Source	CO ₂ e Emissions (metric tons)
Vehicle Emissions	2,123
Electricity	138
Natural Gas	132
Solid Waste	85
Water Use	25
Area Sources	<1
Amortized Construction Emissions	13
Total Annual Emissions	2,517

Source: CalEEMod, Version 2016.3.2

Notes: CO₂e = carbon dioxide equivalent

As shown in Table 4-2, the total CO₂e emissions from the project would be approximately 2,517 metric tons. The net emissions increase associated with the project exceeds the City’s Bright Line threshold of 1,185 metric tons of CO₂e and would therefore be subject to the City’s Efficiency Threshold of 3.3 MTCO₂e per year per service population.

Service population is defined as the number of residents plus the number of employees supported by a project. The proposed project would not support residents. The number of jobs that could be supported by the proposed project is based on data regarding the typical square footage of commercial floor space required per employee for various commercial land use types published by the San Luis Obispo County Air Pollution Control District (SLO County APCD 2012). The SLO County Air Pollution Control District GHG Thresholds and Supporting Evidence handbook serves as a general guide for consultants on quantifying project GHG emission impacts. Absent similar, local data for Vista or San Diego county, the jobs per square-footage information published by SLO County Air Pollution Control District provides the most relevant data published by a public agency for the purposes of reducing GHG and; therefore, is consistent with the State CEQA Guidelines, Section 15064.4. The number of jobs supported by the proposed project is summarized in Table 4-3.

Table 4-3. Proposed Project Service Population

Land Use	Employees per 1,000 SF	Project 1,000 SF	Project Service Population
Fast-Food Restaurant with Drive-Through	6.22	13.74	85
Retail ¹	2.39	5.58	13
Car Wash ²	2.22	4.2	9
Project Service Population			107

Sources: SLO County APCD 2012.

Notes: SF = square feet

¹ Strip Mall land use type was determined to be most similar.

² Gasoline/Service Station was determined to be most similar.

Assuming a service population of 107, the proposed project would have a GHG efficiency of 23.5 MTCO_{2e} per year per service population. Therefore, the proposed project would exceed the significance criteria and would result in a significant GHG impact.

4.1.3 Mitigation Measures

4.1.3.1 Project Mitigation Measures

Assuming a service population of 107, annual operational GHG emissions from the proposed project would need to be reduced to 353 MTCO_{2e} or less to be considered less than significant under the City’s Efficiency Threshold. However, this is well below the City’s screening level of 1,185 MTCO_{2e}. Therefore, requiring the project to meet the Efficiency Threshold rather than the Bright Line threshold would be overly conservative and commit the project to reductions beyond its fair share. As previously stated, projects that result in annual emissions of 1,185 MTCO_{2e} or less have been determined to result in less than significant impacts by the city. As such, the proposed project emissions would need to be reduced to below 1,185 MTCO_{2e} per year to be considered less than significant.

In the 2017 Climate Change Scoping Plan Update, CARB recommends that individual projects demonstrate consistency with AB 32 and SB 32 by showing that they have implemented all feasible measures to reduce GHG emissions (CARB 2017). As such, this analysis has considered a range of possible measures to reduce GHG, and incorporated those that could feasibly be implemented into mitigation measures. All measures from the City’s CAP were considered as potential mitigation for the project, as well as the measures recommended in the CAPCOA report, Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010). Note that, while the CAP was used as a source for potential GHG reduction measures, the CAP does not require individual development projects to implement the GHG reduction measures found within it. Mitigation Measures GHG-1 through GHG-6 would reduce the project’s GHG emissions impact.

These measures are followed, in Section 4.1.3.2, by a description of GHG-reducing measures that were considered for the proposed project, but rejected.

GHG-1 Zero Net Energy. Prior to the issuance of any building permit, the Project Applicant and/or owner shall demonstrate in writing to the City of Vista’s Community Development Director that the project has been designed and shall be constructed to achieve zero net energy, as defined by the California Energy Commission in its 2015 Integrated Energy Policy Report, or otherwise achieve an equivalent level of energy efficiency, renewable energy generation or greenhouse gas emissions savings. The following measures may be included to demonstrate the project’s achievement of zero net energy:

- Install programmable thermostats in commercial spaces
- Use electric landscaping equipment to achieve a reduction in non-space/water heating residential natural gas use
- Obtain third-party heating, ventilation, and air conditioning commissioning and verification of energy savings
- Install high-efficiency area lighting
- Limit outdoor lighting
- Maximize interior daylight
- Install rooftop solar photovoltaic systems to the extent required to offset the project’s remaining electricity demand with on-site solar renewable energy

Through incorporation of zero-energy technology into the project, as prescribed by a qualified energy efficiency and design consultant, fossil fuel-related sources of greenhouse gases associated with electricity use from project-related, non-mobile source operational activities would be zero.

GHG-2 Conservation of Water. Prior to issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing (including receipts or other evidence) that all installed low-flow plumbing fixtures and appliances are low-water use.

GHG-3 Solid Waste Reduction. Prior to issuance of a certificate of occupancy for any building, the property manager shall, as part of the standard tenant agreement, require commercial tenants to institute recycling and composting services with a 50 percent reduction target in waste disposed. A copy of this agreement shall be sent to the Director of Community Development prior to issuance of the certificate of occupancy.

GHG-4 Transportation Demand Management. Prior to issuance of a certificate of occupancy for any building, the Project Applicant and/or Owner shall implement the following measures to reduce vehicle miles traveled resulting from the project. The following measures are designed to influence the transportation choices of employees and serve to enhance the use of alternative

transportation modes both on and off the project site through the provision of incentives and subsidies, and other innovative means. A copy of each shall be sent to the Director of Community Development prior to issuance of the certificate of occupancy.

- Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer an employer-sponsored vanpool/shuttle service to the extent that at least 20 percent of employees are eligible for the program.
- Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer an average transit fare subsidy of \$6.00 per employee per day.
- Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer a rideshare program to employees to the extent that at least 20 percent of employees are eligible for the program.
- Property manager shall, as part of the standard tenant agreement, require commercial tenants to encourage telecommuting and alternative work schedules, such as a nine-day/80 hour schedule, four-day/40 hour schedule, or part-time telecommuting, to the extent that at least ten percent of employees are eligible for the program.

GHG-5 Promotion of Electric and Alternative Fuel Vehicles. Prior to issuance any building permits, the Project Applicant and/or Owner shall demonstrate in writing and/or plan that six dedicated electric vehicle parking spaces with electric vehicle charging stations (EVCS) have been incorporated into the design of the project to encourage electric vehicle and alternative fuel vehicle use. The parking spaces shall provide a mix of Level 2 and DC Fast Chargers in order to serve a variety of vehicles.

GHG-6 Parking Fee. Prior to issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing that the project parking lot includes a system to charge for parking on-site, such as numbered parking spaces and automated parking pay stations.

4.1.3.2 Mitigation Measures Considered but Rejected

As previously described, this analysis has considered a range of possible measures to reduce GHG, and incorporated those that could feasibly be implemented into mitigation measures. All measures from the City's CAP and the measures recommended in CAPCOA's Quantifying Greenhouse Gas Mitigation Measures (2010) were considered as potential mitigation for the project. The following CAP measures were considered for the proposed project:

- **Implementation Action M-2.1.** Identify and secure additional funding to replace incandescent and mercury vapor street and traffic signal lights with LED, or other energy efficient lamps.
- **Implementation Action M-2.2.** Identify and secure additional funding to replace inefficient outdoor lights at City buildings and facilities as identified in the Vista Energy Roadmap.

- **Implementation Action M-3.1.** Identify cost-effective renewable energy opportunities for additional City properties and apply for federal, state, and utility grants and other funding opportunities when they become available.
- **Implementation Action M-5.1.** Identify City-owned or operated facilities that need recycling receptacles, such as parks and recreational facilities. Install receptacles at appropriate locations and post signs to encourage recycling at these locations.
- **Implementation Action T-1.1.** Continue to pursue public and private funding to expand and link the City’s bicycle and pedestrian network in accordance with the General Plan 2030 Circulation Element.
- **Implementation Action T-2.1.** Coordinate with North County Transit District to continue to expand local rail and bus service to and within Vista.

Implementation Actions M-2.1, M-2.2, M-3.1, M-5.1, and T-1.1 were ultimately rejected because these actions have been implemented, or funding has already been secured to implement these measures. Implementation Action T-2.1 was rejected because transit operations in the city are under the jurisdiction of the North County Transit District and are outside of the control of the City.

Additionally, off-site carbon offsets were considered for the project to off-set the remaining reduction required to reduce project emissions to the City’s screening level. The City has considered the applicability of the use of offsets outside of the city to meet local GHG reduction goals and has concluded that purchase of offsets outside of the region would not aid the City in meeting its CAP reduction goals. Recent legislation has also indicated that these offsets are inappropriate for mitigation of impacts under CEQA.⁴

4.1.4 Significance After Mitigation

Table 4-4 summarizes the GHG emission reduction that is calculated to result from each mitigation measure. Table 4-5 summarizes the project’s annual GHG emissions with implementation of these measures. As shown in Table 4-5, with mitigation the proposed project would generate an estimated 2,044 MTCO_{2e} annually, and would continue to exceed the City’s screening level of 1,185 MTCO_{2e}. With implementation of feasible mitigation measures, project emissions would be significant and unavoidable.

⁴ Golden Door Properties v. County of San Diego. Case No. 2018-13324. Filed December 24, 2018.

Table 4-4. Calculated Mitigation GHG Emissions Reductions

Emissions Source	CO ₂ e Emissions Reduction (metric tons)
GHG-1 Zero Net Energy	138
GHG-2 Conservation of Water	5
GHG-3 Solid Waste Reduction	42
GHG-4 Transportation Demand Management and GHG-6 Parking Fee	272
GHG-5 Promotion of Electric and Alternative Fuel Vehicles	16
Total Annual Emissions Reduction	473

Source: CalEEMod, Version 2016.3.2. Electric vehicle charging stations reduction based on calculation methodology provided by Energy Policy Initiatives Center (EPIC) (Nilmini Silva-Send, Ph.D., Assistant Director/Adjunct Professor, Energy Policy Initiatives Center (EPIC); Co-Principal Investigator Climate Education Partners (CEP), University of San Diego School of Law, Email to Greg Wade, City Manager, City of Solana Beach, April 11, 2018.)

Notes: CO₂e = carbon dioxide equivalent; GHG = greenhouse gas

Table 4-5. Estimated Mitigated Annual Operational Emissions

Emissions Source	CO ₂ e Emissions (metric tons)
Vehicle Emissions	1,835 ¹
Electricity	0
Natural Gas	132
Solid Waste	43
Water Use	20
Area Sources	<1
Amortized Construction Emissions	13
Total Annual Emissions	2,044

Source: CalEEMod, Version 2016.3.2.

Notes: CO₂e = carbon dioxide equivalent

¹ Assumes 16 MTCO₂e reduction from provision of six electric vehicle charging stations, based on calculation methodology provided by Energy Policy Initiatives Center (EPIC) (Nilmini Silva-Send, Ph.D., Assistant Director/Adjunct Professor, Energy Policy Initiatives Center (EPIC); Co-Principal Investigator Climate Education Partners (CEP), University of San Diego School of Law, Email to Greg Wade, City Manager, City of Solana Beach, April 11, 2018).

4.2 Consistency with Local Plans Adopted for the Purpose of Reducing GHG Emissions

The plans, policies, or regulations adopted for the purpose of reducing GHG emissions that are applicable to the proposed project include the City’s interim guidance and CAP, as well as the long-term statewide emissions reduction goals.

4.2.1 City Climate Action Plan

The City’s CAP is the applicable plan adopted for the purpose of reducing GHG emissions. The City’s Municipal Code and state regulations codify compliance with some CAP measures. As demonstrated in Table 4-6, the project would comply with the CAP measures that apply to new land development.

Table 4-6. Climate Action Plan Measure Consistency

Climate Action Plan Measure	Project Consistency
<p>Measure E-1: Energy Efficiency Building Standards Ensure that new development complies with the energy efficiency and green building standards identified in Title 24 of the California Code of Regulations.</p>	<p>The proposed project is required by law to comply with Title 24 regulations. In addition, it is anticipated that development on Pad 2 will exceed Title 24 energy standards by nine percent, and development on Pad 4 will exceed Title 24 by 12 percent.</p>
<p>Measure T-4: Smart Growth Promote sustainable and smart growth land use patterns and development regulations and guidelines.</p>	<p>The proposed project would provide infill development by redeveloping a site in close proximity to existing development, pedestrian and bicycle facilities, and transit routes.</p>
<p>Measure S-1: Expanded Recycling Create a mandatory solid waste recycling program for multi-family residences and commercial operations.</p>	<p>The proposed project would make recycling services available to tenants, in compliance with AB 341.</p>
<p>Measure S-2: Construction and Demolition Debris Diversion Require the redirection of at least 50 percent of the total construction and demolition debris generated by a project via reuse or recycling.</p>	<p>The proposed project would comply with Chapter 13.17 of the City's Municipal Code, which codifies this measure.</p>

Source: City of Vista.

Notes: AB = Assembly Bill

As shown in Table 4-6, the project would be consistent with the measures of the local plan, policy, or regulation adopted for the purpose of reducing GHG emissions. However, because the project's emissions would exceed the City's emissions threshold for compliance with its emissions reduction goals, the project would potentially conflict with the goals of the City's CAP. This would result in a significant impact.

4.2.2 Long-term Statewide Emissions Reduction Goals

As described in Section 2.5.2, State, EO B-30-15 established a statewide emissions reduction target of 40 percent below 1990 levels by 2030, which was codified by SB 32. EO S-3-05 established a statewide emissions reduction target of 80 percent below 1990 levels by 2050. According to the most recent data included in the 2017 Climate Change Scoping Plan Update, the state is on track to achieve the 2020 target.

It can be difficult to quantitatively forecast future GHG emissions associated with the project, given the uncertainty in future state and federal policies, such as Title 24 energy efficiency regulations. However, in the interest of full disclosure under CEQA, an attempt has been made to estimate the project's annual GHG emissions in the years 2030 and 2050. These estimates take into account (1) additional reductions in vehicle GHG emissions due to Advanced Clean Cars and increased percentage of electric and low-emission vehicles in the fleet and (2) implementation of the 50 percent Renewable Portfolio Standard. Table 4-7 presents the estimated GHG emissions for 2030 and 2050 with these measures in place.

Table 4-7. Estimated Future Greenhouse Gas Emissions

Emissions Source or Reduction	Annual Emissions (MTCO₂e) Horizon Year 2030	Annual Emissions (MTCO₂e) Horizon Year 2050
Vehicle Emissions	1,636	1,562
Electricity	121	121
Natural Gas	132	132
Solid Waste	85	85
Water Use	23	23
Area Sources	<1	<1
Amortized Construction Emissions	13	13
Annual Operational Emissions with Project Design Features	2,010	1,936
<i>Emissions per Year per Service Population</i>	<i>18.8</i>	<i>18.1</i>

Source: CalEEMod 2016.3.2. See Attachment A for model output.

Notes: MTCO₂e = metric tons of carbon dioxide equivalent

These emissions would likely be reduced further than shown in Table 4-7 due to implementation of additional GHG reduction measures and technological advances that cannot be quantified with reasonable certainty at this time. For example, it is likely that the state will increase the Renewable Portfolio Standard targets. The estimated future GHG emissions in Table 4-7 demonstrate that the project’s emissions would likely continue to decrease due to reasonably foreseeable reductions in vehicular emissions attributable to existing regulatory standards. However, the project’s future emissions projections continue to exceed the City’s threshold for significance for 2020 impacts. Because the project’s future emissions would not meet the City’s short-term targets, which are less ambitious than the state’s long-term targets, it is reasonable to assume that the project would potentially interfere with implementation of the 2030 or 2050 GHG reduction goals. This impact would be significant.

4.2.3 Summary

Because the project’s emissions would exceed the City’s emissions threshold for compliance with the City’s emissions reduction goals, the project would potentially conflict with the goals of the City’s CAP and may be seen to exceed its fair share in achieving the state’s reduction target. This impact would be significant.

4.3 Adverse Effects of Climate Change

The proposed project would have the potential to result in a significant impact related to the adverse effects of climate change if it would exacerbate exposure to these effects. The project’s potential to exacerbate each of the key issues for the project region is provided below.

4.3.1 Climate

San Diego county is anticipated to experience and increase in dangerously hot days, particularly in inland areas. However, the proposed project does not propose any new residences and would not support population growth in the region. As such, the proposed project would not increase exposure to hot days in the region. Additionally, the proposed project would include new trees and other vegetation that may reduce urban heat effects and reduce heat exposure.

4.3.2 Sea Level

If current climate change trends continue, rising sea levels will have a major impact on the San Diego region's environment and economy, particularly in coastal areas. The proposed project is located more than six miles inland and development of the project site would not increase exposure to sea level rise.

4.3.3 Water Supply

Climate change is anticipated to increase drought and reduce water supply with regional population and water demand is anticipated to increase. The proposed project does not include any growth inducing components and is consistent with anticipated development on the project site in the City's General Plan. As such, the project would not increase water demand beyond regional projections. The proposed project does not include any components that would result in intentional wasteful use of water. The proposed car wash would utilize recycled water to provide a potentially water-saving alternative to at-home car washes. Outdoor landscaping would comply with Section 18.56 of the City's Development Code, Water Efficient Landscaping. As such, the proposed project would not exacerbate impacts related to decreased water supply.

4.3.4 Wildfires

The frequency and severity of wildfire would potentially increase in the region, particularly as development extends into previously undeveloped areas. The proposed project would redevelop a site surrounded by existing development in a developed area of Vista. It would not increase the wildland-urban interface. Therefore, the proposed project would not increase exposure to potential wildfire risk.

4.3.5 Ecosystems

The impacts of climate change will add to the pressures on habitats and the species that live in the county. However, the project site is previously developed and located in an urbanized area of Vista. Development of the site would not impact the ability of species to migrate to more suitable habitats or result in a loss of existing habitat.

4.3.6 Public Health

Increased heat, air pollution (ozone), wildfires, and infectious disease from increased pest populations will potentially cause illness and death in San Diego county. As previously described, the proposed project does not propose any growth inducing components and would not increase exposure to public health risks. The Air Quality Technical Report prepared for the project (Harris & Associates 2019) modeled the potential emissions of ozone precursors (volatile organic compounds and nitrogen oxides) from project development. As detailed in this report, the proposed project would not result in cumulatively considerable emissions of these pollutants.

4.3.7 Energy Needs

Increased energy demand and a result of higher temperatures would potentially result in blackouts and power outages. The proposed project would exceed current energy efficiency requirements. Additionally, the proposed project does not include any growth-inducing components and is consistent with projected growth for the city. As such, the proposed project would not exceed projected energy demand and would not interfere with the ability of SDG&E to adequately plan.

4.3.8 Summary

As demonstrated above, the proposed project would not exacerbate exposure to any of the potential adverse impacts of climate change. This impact would be less than significant.

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Section 5 Cumulative Impacts

As discussed in Section 3.1, Significance Criteria, given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. The City's Bright Line and Efficiency Thresholds identified in its 2016 Interim GHG Policy (2016) are intended to require individual projects to contribute their fair share of GHG reductions to meet local and statewide cumulative GHG reduction goals. Thus, the analysis in Section 4.1, Direct and Indirect Emissions of Greenhouse Gases, compares the project's direct GHG emissions to the City's threshold for significance addresses the project's potential cumulative impact.

As summarized in Section 4.1, implementation of the project would result in GHG emissions of 2,517 MTCO_{2e}, which would exceed both the City's Bright Line and Efficiency Standard Thresholds identified in its 2016 Interim GHG Policy (2016). Therefore, the project would result in a cumulatively considerable contribution to a potentially significant cumulative impact with respect to GHG emissions and climate change.

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Section 6 References

- Auto Laundry News. 2013. “Water Reclaim –How to Pick a System for Your Car Wash.” Accessed October 5, 2018. <http://www.carwashmag.com/issues/march-2013/water-treatment.cfm>.
- CalEPA (California Environmental Protection Agency). 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. Prepared by the California Climate Action Team. Sacramento, California. March.
- CalEPA. 2010. Climate Action Team Report to Governor Schwarzenegger and the California Legislature. Prepared by the California Climate Action Team. Sacramento, California. December.
- CARB (California Air Resources Board). 2014. First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB 32, the California Global Warming Solutions Act of 2006. May.
- CARB. 2018a. California Greenhouse Gas Emissions for 2000 to 2016, Trends of Emissions and Other Indicators.
- CARB. 2018b. Advanced Clean Cars Summary. Accessed October 24, 2018. https://www.arb.ca.gov/msprog/clean_cars/acc%20summary-final.pdf.
- CAT (California Climate Action Team). 2007. Climate Action Team Proposed Early Actions to Mitigate Climate Change in California. Accessed December 10, 2017. http://www.climatechange.ca.gov/climate_action_team/reports/index.html.
- Harris & Associates. 2019. Air Quality Technical Report, Sunroad Commercial Plaza Project. September.
- IPCC (Intergovernmental Panel on Climate Change). 2014. Climate Change 2014: Synthesis Report. Contribution of the Working Groups I, II, and III to the Fifth Assessment Report of the IPCC [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.
- Jones, Megan. 2018. “RE: SUNROAD VISTA Air Quality and GHG Assumptions.” Email from Megan Jones (Job Captain, SGPA Architecture and Planning) to Sharon Toland (Project Manager, Harris & Associates). October 3.
- LLG (Linscott Law & Greenspan Engineers). 2019. Transportation Impact Analysis, Sunroad Restaurants. June 10.
- San Diego Foundation. 2008. San Diego Foundation Regional Focus 2050 Study. Accessed on April 24, 2017. http://tenaya.ucsd.edu/~dettinge/Focus2050_water_chapter.pdf.
- SANDAG (San Diego Association of Governments). 2002. (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region. April.
- SCAQMD (South Coast Air Quality Management District). 2008. Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold. October.

- SDG&E (San Diego Gas & Electric). 2018. Renewables webpage. Accessed October 3, 2018.
<http://webarchive.sdge.com/renewables>.
- SGPA (SGPA Architecture and Planning). 2018. Sunroad Plaza Conceptual Water Conservation Plan. July 17.
- United Nations Environment Programme. 2012. Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer, Ninth Edition.
- USEPA (U.S. Environmental Protection Agency). 2017c. Greenhouse Gas Emissions. Updated on February 14, 2017. Accessed in April 19, 2017. <https://www.epa.gov/ghgemissions>.
- USEPA. 2018. Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016. February 2018. Accessed April 16, 2018.
https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf.

Appendix A. CalEEMod Output

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Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

Sunroad Commercial Plaza Project
San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.20	1000sqft	0.11	4,200.00	0
Parking Lot	163.00	Space	3.53	85,000.00	0
Fast Food Restaurant with Drive Thru	13.74	1000sqft	0.37	13,740.00	0
Strip Mall	5.58	1000sqft	0.11	5,580.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MW hr)	458.86	CH4 Intensity (lb/MW hr)	0.018	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

Project Characteristics - Utility intensity adjusted to reflect 43% renewables (SDG&E 2018) consistent with methodology from Ascent Environmental (2016)

Land Use - Parking lot acreage adjusted so the site total is equal to 4.12 acres. General light industry represents car wash.

Construction Phase - Info provided by Sunroad.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No demolition is needed.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition - No demolition needed for this project.

Grading - Entire site to be graded. No import/export

Architectural Coating -

Vehicle Trips - Adjusted to be consistent with October 2018 TIA Primary Trips and SANDAG Not so Brief Guide Trip lengths

Energy Use - Adjust to reflect anticipated reductions beyond Title 24

Water And Wastewater - Car wash water use estimated by 17 gallons per customer and 60 percent use of recycled water. Outdoor water use from landscape plan

Sequestration -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	8.00	10.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	18.00	20.00
tblEnergyUse	T24E	8.23	7.98
tblEnergyUse	T24E	3.18	2.83
tblGrading	AcresOfGrading	5.00	4.12
tblGrading	AcresOfGrading	0.00	4.12
tblGrading	MaterialImported	0.00	2,200.00
tblLandUse	LandUseSquareFeet	65,200.00	85,000.00
tblLandUse	LotAcreage	0.10	0.11
tblLandUse	LotAcreage	1.47	3.53
tblLandUse	LotAcreage	0.32	0.37
tblLandUse	LotAcreage	0.13	0.11
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.018
tblProjectCharacteristics	CO2IntensityFactor	720.49	458.86
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSequestration	NumberOfNewTrees	0.00	100.00
tblVehicleTrips	CC_TL	7.30	4.70
tblVehicleTrips	CC_TL	7.30	2.80
tblVehicleTrips	CC_TL	7.30	4.30
tblVehicleTrips	CNW_TL	7.30	4.70
tblVehicleTrips	CNW_TL	7.30	2.80

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tblVehicleTrips	CNW_TL	7.30	4.30
tblVehicleTrips	CW_TL	9.50	4.70
tblVehicleTrips	CW_TL	9.50	2.80
tblVehicleTrips	CW_TL	9.50	4.30
tblVehicleTrips	ST_TR	722.03	429.70
tblVehicleTrips	ST_TR	1.32	141.60
tblVehicleTrips	ST_TR	42.04	26.40
tblVehicleTrips	SU_TR	542.72	429.70
tblVehicleTrips	SU_TR	0.68	141.60
tblVehicleTrips	SU_TR	20.43	26.40
tblVehicleTrips	WD_TR	496.12	429.70
tblVehicleTrips	WD_TR	6.97	141.60
tblVehicleTrips	WD_TR	44.32	26.40
tblWater	IndoorWaterUseRate	971,250.00	1,005,000.00
tblWater	OutdoorWaterUseRate	266,205.52	0.00
tblWater	OutdoorWaterUseRate	253,328.02	906,675.00

2.0 Emissions Summary

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2019	8-31-2019	1.0806	1.0806
2	9-1-2019	11-30-2019	0.8477	0.8477
3	12-1-2019	2-29-2020	0.7972	0.7972
4	3-1-2020	5-31-2020	0.6933	0.6933
5	6-1-2020	8-31-2020	0.1380	0.1380
		Highest	1.0806	1.0806

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	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003
Energy	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	268.7092	268.7092	7.9100e-003	3.6000e-003	269.9807
Mobile	1.4603	5.0696	10.6741	0.0230	1.6057	0.0255	1.6312	0.4300	0.0238	0.4539	0.0000	2,118.7508	2,118.7508	0.1629	0.0000	2,122.8234
Waste						0.0000	0.0000		0.0000	0.0000	34.3745	0.0000	34.3745	2.0315	0.0000	85.1613
Water						0.0000	0.0000		0.0000	0.0000	1.7731	17.2432	19.0163	0.1828	4.4500e-003	24.9122
Total	1.6013	5.1900	10.7770	0.0237	1.6057	0.0346	1.6403	0.4300	0.0330	0.4630	36.1476	2,404.7065	2,440.8541	2.3851	8.0500e-003	2,502.8812

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

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	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003
Energy	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928
Mobile	1.4260	4.8465	9.9389	0.0200	1.3462	0.0226	1.3688	0.3605	0.0212	0.3817	0.0000	1,847.6991	1,847.6991	0.1504	0.0000	1,851.4588
Waste						0.0000	0.0000		0.0000	0.0000	17.1872	0.0000	17.1872	1.0157	0.0000	42.5807
Water						0.0000	0.0000		0.0000	0.0000	1.4185	14.2139	15.6323	0.1463	3.5600e-003	20.3506
Total	1.5670	4.9670	10.0418	0.0207	1.3462	0.0318	1.3780	0.3605	0.0303	0.3909	18.6057	1,993.0299	2,011.6356	1.3149	5.9600e-003	2,046.2865

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	2.14	4.30	6.82	12.46	16.16	8.26	15.99	16.16	8.12	15.59	48.53	17.12	17.58	44.87	25.96	18.24

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	70.8000
Total	70.8000

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	6/28/2019	5	20	
2	Grading	Grading	7/1/2019	7/12/2019	5	10	
3	Building Construction	Building Construction	7/15/2019	4/17/2020	5	200	
4	Paving	Paving	4/20/2020	5/15/2020	5	20	
5	Architectural Coating	Architectural Coating	5/18/2020	6/12/2020	5	20	

Acres of Grading (Site Preparation Phase): 4.12

Acres of Grading (Grading Phase): 4.12

Acres of Paving: 3.53

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 35,280; Non-Residential Outdoor: 11,760; Striped Parking Area: 5,100 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	275.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	45.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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					0.1829	0.0000	0.1829	0.0995	0.0000	0.0995	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	0.0434	0.4557	0.2206	3.8000e-004	0.1829	0.0239	0.2068	0.0995	0.0220	0.1215	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0823	0.0000	0.0823	0.0448	0.0000	0.0448	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	0.0434	0.4557	0.2206	3.8000e-004	0.0823	0.0239	0.1062	0.0448	0.0220	0.0668	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389

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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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0325	0.0000	0.0325	0.0168	0.0000	0.0168	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0325	6.9900e-003	0.0394	0.0168	6.4300e-003	0.0232	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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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	1.2100e-003	0.0421	9.1900e-003	1.1000e-004	2.3500e-003	1.6000e-004	2.5100e-003	6.5000e-004	1.5000e-004	8.0000e-004	0.0000	10.7194	10.7194	9.7000e-004	0.0000	10.7437
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	1.5100e-003	0.0424	0.0114	1.2000e-004	2.9500e-003	1.6000e-004	3.1200e-003	8.1000e-004	1.5000e-004	9.6000e-004	0.0000	11.2808	11.2808	9.9000e-004	0.0000	11.3055

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					0.0146	0.0000	0.0146	7.5600e-003	0.0000	7.5600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0146	6.9900e-003	0.0216	7.5600e-003	6.4300e-003	0.0140	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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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	1.2100e-003	0.0421	9.1900e-003	1.1000e-004	2.3500e-003	1.6000e-004	2.5100e-003	6.5000e-004	1.5000e-004	8.0000e-004	0.0000	10.7194	10.7194	9.7000e-004	0.0000	10.7437
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	1.5100e-003	0.0424	0.0114	1.2000e-004	2.9500e-003	1.6000e-004	3.1200e-003	8.1000e-004	1.5000e-004	9.6000e-004	0.0000	11.2808	11.2808	9.9000e-004	0.0000	11.3055

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870

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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	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868

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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	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788

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3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

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	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787

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3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

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	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

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	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Unbundle Parking Cost

Transit Subsidy

Encourage Telecommuting and Alternative Work Schedules

Employee Vanpool/Shuttle

Provide Ride Sharing Program

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4260	4.8465	9.9389	0.0200	1.3462	0.0226	1.3688	0.3605	0.0212	0.3817	0.0000	1,847.699 1	1,847.699 1	0.1504	0.0000	1,851.458 8
Unmitigated	1.4603	5.0696	10.6741	0.0230	1.6057	0.0255	1.6312	0.4300	0.0238	0.4539	0.0000	2,118.7508	2,118.7508	0.1629	0.0000	2,122.823 4

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	5,904.08	5,904.08	5904.08	3,566,943	2,991,075
General Light Industry	594.72	594.72	594.72	565,874	473,865
Parking Lot	0.00	0.00	0.00		
Strip Mall	147.31	147.31	147.31	127,619	107,016
Total	6,646.11	6,646.11	6,646.11	4,260,436	3,571,956

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Fast Food Restaurant with Drive	4.70	4.70	4.70	2.20	78.80	19.00	29	21	50
General Light Industry	2.80	2.80	2.80	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	4.30	4.30	4.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
General Light Industry	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
Parking Lot	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
Strip Mall	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	137.5956	137.5956	5.4000e-003	1.2000e-003	138.0879
NaturalGas Mitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928
NaturalGas Unmitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
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
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
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
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	528303	109.9586	4.3100e-003	9.6000e-004	110.3520
General Light Industry	34902	7.2643	2.8000e-004	6.0000e-005	7.2903
Parking Lot	29750	6.1920	2.4000e-004	5.0000e-005	6.2142
Strip Mall	68131.8	14.1806	5.6000e-004	1.2000e-004	14.2314
Total		137.5956	5.3900e-003	1.1900e-003	138.0879

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003
Unmitigated	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-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	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003
Total	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003
Total	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.6323	0.1463	3.5600e-003	20.3506
Unmitigated	19.0163	0.1828	4.4500e-003	24.9122

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.17055 / 0	12.6259	0.1363	3.3100e-003	17.0200
General Light Industry	1.005 / 0	3.0425	0.0329	8.0000e-004	4.1014
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.413325 / 0.906675	3.3479	0.0136	3.5000e-004	3.7909
Total		19.0163	0.1828	4.4600e-003	24.9123

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	3.33644 / 0	10.1007	0.1091	2.6500e-003	13.6160
General Light Industry	0.804 / 0	2.4340	0.0263	6.4000e-004	3.2811
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.33066 / 0.906675	3.0976	0.0109	2.8000e-004	3.4535
Total		15.6323	0.1462	3.5700e-003	20.3506

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	17.1872	1.0157	0.0000	42.5807
Unmitigated	34.3745	2.0315	0.0000	85.1613

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.27	32.1274	1.8987	0.0000	79.5942
General Light Industry	5.21	1.0576	0.0625	0.0000	2.6201
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.86	1.1895	0.0703	0.0000	2.9470
Total		34.3745	2.0315	0.0000	85.1613

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8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	79.135	16.0637	0.9493	0.0000	39.7971
General Light Industry	2.605	0.5288	0.0313	0.0000	1.3101
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	2.93	0.5948	0.0352	0.0000	1.4735
Total		17.1872	1.0157	0.0000	42.5807

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

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

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	70.8000	0.0000	0.0000	70.8000

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	100	70.8000	0.0000	0.0000	70.8000
Total		70.8000	0.0000	0.0000	70.8000

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Sunroad Commercial Plaza Project
San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.20	1000sqft	0.11	4,200.00	0
Parking Lot	163.00	Space	3.53	85,000.00	0
Fast Food Restaurant with Drive Thru	13.74	1000sqft	0.37	13,740.00	0
Strip Mall	5.58	1000sqft	0.11	5,580.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2030
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MW hr)	402.51	CH4 Intensity (lb/MW hr)	0.016	N2O Intensity (lb/MW hr)	0.003

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Utility intensity adjusted to reflect 43% renewables (SDG&E 2018) consistent with methodology from Ascent Environmental (2016)

Land Use - Parking lot acreage adjusted so the site total is equal to 4.12 acres. General light industry represents car wash.

Construction Phase - Info provided by Sunroad.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No demolition is needed.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition - No demolition needed for this project.

Grading - Entire site to be graded. No import/export

Architectural Coating -

Vehicle Trips - Adjusted to be consistent with October 2018 TIA Primary Trips

Energy Use - Adjust to reflect anticipated reductions beyond Title 24

Water And Wastewater - Car wash water use estimated by 17 gallons per customer and 60 percent use of recycled water. Outdoor water use from landscape plan

Sequestration -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	8.00	10.00

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tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblEnergyUse	T24E	8.23	7.95
tblEnergyUse	T24E	3.18	2.83
tblGrading	AcresOfGrading	5.00	4.12
tblGrading	AcresOfGrading	0.00	4.12
tblLandUse	LandUseSquareFeet	65,200.00	85,000.00
tblLandUse	LotAcreage	0.10	0.11
tblLandUse	LotAcreage	1.47	3.53
tblLandUse	LotAcreage	0.32	0.37
tblLandUse	LotAcreage	0.13	0.11
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.016
tblProjectCharacteristics	CO2IntensityFactor	720.49	402.51
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblSequestration	NumberOfNewTrees	0.00	100.00
tblVehicleTrips	CC_TL	7.30	4.70
tblVehicleTrips	CC_TL	7.30	2.80
tblVehicleTrips	CC_TL	7.30	4.30
tblVehicleTrips	CNW_TL	7.30	4.70
tblVehicleTrips	CNW_TL	7.30	2.80
tblVehicleTrips	CNW_TL	7.30	4.30
tblVehicleTrips	CW_TL	9.50	4.70
tblVehicleTrips	CW_TL	9.50	2.80
tblVehicleTrips	CW_TL	9.50	4.30
tblVehicleTrips	ST_TR	722.03	429.70
tblVehicleTrips	ST_TR	1.32	141.60
tblVehicleTrips	ST_TR	42.04	26.40

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tblVehicleTrips	SU_TR	542.72	429.70
tblVehicleTrips	SU_TR	0.68	141.60
tblVehicleTrips	SU_TR	20.43	26.40
tblVehicleTrips	WD_TR	496.12	429.70
tblVehicleTrips	WD_TR	6.97	141.60
tblVehicleTrips	WD_TR	44.32	26.40
tblWater	IndoorWaterUseRate	971,250.00	1,005,000.00
tblWater	OutdoorWaterUseRate	266,205.52	0.00
tblWater	OutdoorWaterUseRate	253,328.02	906,675.00

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2019	8-31-2019	1.0442	1.0442
2	9-1-2019	11-30-2019	0.8477	0.8477
3	12-1-2019	2-29-2020	0.7972	0.7972
4	3-1-2020	5-31-2020	0.6933	0.6933
5	6-1-2020	8-31-2020	0.1380	0.1380
		Highest	1.0442	1.0442

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	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Energy	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	251.7366	251.7366	7.3100e-003	3.3000e-003	252.9035
Mobile	0.8345	3.5768	6.0671	0.0175	1.6047	0.0134	1.6181	0.4295	0.0124	0.4419	0.0000	1,633.5049	1,633.5049	0.1020	0.0000	1,636.0535
Waste						0.0000	0.0000		0.0000	0.0000	34.3745	0.0000	34.3745	2.0315	0.0000	85.1613
Water						0.0000	0.0000		0.0000	0.0000	1.7731	15.1256	16.8987	0.1827	4.4100e-003	22.7816
Total	0.9755	3.6973	6.1700	0.0182	1.6047	0.0225	1.6272	0.4295	0.0216	0.4511	36.1476	1,900.3704	1,936.5180	2.3235	7.7100e-003	1,996.9036

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2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	70.8000
Total	70.8000

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	6/28/2019	5	20	
2	Grading	Grading	7/1/2019	7/12/2019	5	10	
3	Building Construction	Building Construction	7/15/2019	4/17/2020	5	200	
4	Paving	Paving	4/20/2020	5/15/2020	5	20	
5	Architectural Coating	Architectural Coating	5/18/2020	6/12/2020	5	20	

Acres of Grading (Site Preparation Phase): 4.12

Acres of Grading (Grading Phase): 4.12

Acres of Paving: 3.53

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Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 35,280; Non-Residential Outdoor: 11,760; Striped Parking Area: 5,100 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	45.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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					0.1829	0.0000	0.1829	0.0995	0.0000	0.0995	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	0.0434	0.4557	0.2206	3.8000e-004	0.1829	0.0239	0.2068	0.0995	0.0220	0.1215	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390

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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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0823	0.0000	0.0823	0.0448	0.0000	0.0448	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	0.0434	0.4557	0.2206	3.8000e-004	0.0823	0.0239	0.1062	0.0448	0.0220	0.0668	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389

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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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0323	0.0000	0.0323	0.0168	0.0000	0.0168	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0323	6.9900e-003	0.0393	0.0168	6.4300e-003	0.0232	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618

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					0.0145	0.0000	0.0145	7.5500e-003	0.0000	7.5500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0145	6.9900e-003	0.0215	7.5500e-003	6.4300e-003	0.0140	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870

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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	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868

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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	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788

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3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

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	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787

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3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

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	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

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	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.8345	3.5768	6.0671	0.0175	1.6047	0.0134	1.6181	0.4295	0.0124	0.4419	0.0000	1,633.5049	1,633.5049	0.1020	0.0000	1,636.0535
Unmitigated	0.8345	3.5768	6.0671	0.0175	1.6047	0.0134	1.6181	0.4295	0.0124	0.4419	0.0000	1,633.5049	1,633.5049	0.1020	0.0000	1,636.0535

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	5,904.08	5,904.08	5904.08	3,566,943	3,566,943
General Light Industry	594.72	594.72	594.72	565,874	565,874
Parking Lot	0.00	0.00	0.00		
Strip Mall	147.31	147.31	147.31	127,619	127,619
Total	6,646.11	6,646.11	6,646.11	4,260,436	4,260,436

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Fast Food Restaurant with Drive	4.70	4.70	4.70	2.20	78.80	19.00	29	21	50
General Light Industry	2.80	2.80	2.80	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	4.30	4.30	4.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	0.616428	0.037185	0.177402	0.097684	0.012090	0.005279	0.017663	0.025476	0.001931	0.001677	0.005617	0.000785	0.000782
General Light Industry	0.616428	0.037185	0.177402	0.097684	0.012090	0.005279	0.017663	0.025476	0.001931	0.001677	0.005617	0.000785	0.000782
Parking Lot	0.616428	0.037185	0.177402	0.097684	0.012090	0.005279	0.017663	0.025476	0.001931	0.001677	0.005617	0.000785	0.000782
Strip Mall	0.616428	0.037185	0.177402	0.097684	0.012090	0.005279	0.017663	0.025476	0.001931	0.001677	0.005617	0.000785	0.000782

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	120.6230	120.6230	4.7900e-003	9.0000e-004	121.0108
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	120.6230	120.6230	4.7900e-003	9.0000e-004	121.0108
NaturalGas Mitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928
NaturalGas Unmitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
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
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
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
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	527891	96.3799	3.8300e-003	7.2000e-004	96.6898
General Light Industry	34902	6.3723	2.5000e-004	5.0000e-005	6.3927
Parking Lot	29750	5.4316	2.2000e-004	4.0000e-005	5.4491
Strip Mall	68131.8	12.4392	4.9000e-004	9.0000e-005	12.4792
Total		120.6230	4.7900e-003	9.0000e-004	121.0107

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	527891	96.3799	3.8300e-003	7.2000e-004	96.6898
General Light Industry	34902	6.3723	2.5000e-004	5.0000e-005	6.3927
Parking Lot	29750	5.4316	2.2000e-004	4.0000e-005	5.4491
Strip Mall	68131.8	12.4392	4.9000e-004	9.0000e-005	12.4792
Total		120.6230	4.7900e-003	9.0000e-004	121.0107

6.0 Area Detail

6.1 Mitigation Measures Area

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Unmitigated	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-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	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Total	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Total	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	16.8987	0.1827	4.4100e-003	22.7816
Unmitigated	16.8987	0.1827	4.4100e-003	22.7816

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.17055 / 0	11.2378	0.1363	3.2800e-003	15.6234
General Light Industry	1.005 / 0	2.7080	0.0328	7.9000e-004	3.7649
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.413325 / 0.906675	2.9528	0.0136	3.4000e-004	3.3934
Total		16.8987	0.1827	4.4100e-003	22.7816

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.17055 / 0	11.2378	0.1363	3.2800e-003	15.6234
General Light Industry	1.005 / 0	2.7080	0.0328	7.9000e-004	3.7649
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.413325 / 0.906675	2.9528	0.0136	3.4000e-004	3.3934
Total		16.8987	0.1827	4.4100e-003	22.7816

8.0 Waste Detail

8.1 Mitigation Measures Waste

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	34.3745	2.0315	0.0000	85.1613
Unmitigated	34.3745	2.0315	0.0000	85.1613

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.27	32.1274	1.8987	0.0000	79.5942
General Light Industry	5.21	1.0576	0.0625	0.0000	2.6201
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.86	1.1895	0.0703	0.0000	2.9470
Total		34.3745	2.0315	0.0000	85.1613

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8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.27	32.1274	1.8987	0.0000	79.5942
General Light Industry	5.21	1.0576	0.0625	0.0000	2.6201
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.86	1.1895	0.0703	0.0000	2.9470
Total		34.3745	2.0315	0.0000	85.1613

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

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Equipment Type	Number
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11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	70.8000	0.0000	0.0000	70.8000

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	100	70.8000	0.0000	0.0000	70.8000
Total		70.8000	0.0000	0.0000	70.8000

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.20	1000sqft	0.11	4,200.00	0
Parking Lot	163.00	Space	3.53	85,000.00	0
Fast Food Restaurant with Drive Thru	13.74	1000sqft	0.37	13,740.00	0
Strip Mall	5.58	1000sqft	0.11	5,580.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2050
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	402.51	CH4 Intensity (lb/MWhr)	0.016	N2O Intensity (lb/MWhr)	0.003

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Utility intensity adjusted to reflect 43% renewables (SDG&E 2018) consistent with methodology from Ascent Environmental (2016)

Land Use - Parking lot acreage adjusted so the site total is equal to 4.12 acres. General light industry represents car wash.

Construction Phase - Info provided by Sunroad.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No demolition is needed.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition - No demolition needed for this project.

Grading - Entire site to be graded. No import/export

Architectural Coating -

Vehicle Trips - Adjusted to be consistent with October 2018 TIA Primary Trips

Energy Use - Adjust to reflect anticipated reductions beyond Title 24

Water And Wastewater - Car wash water use estimated by 17 gallons per customer and 60 percent use of recycled water. Outdoor water use from landscape plan

Sequestration -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	8.00	10.00

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tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblEnergyUse	T24E	8.23	7.95
tblEnergyUse	T24E	3.18	2.83
tblGrading	AcresOfGrading	5.00	4.12
tblGrading	AcresOfGrading	0.00	4.12
tblLandUse	LandUseSquareFeet	65,200.00	85,000.00
tblLandUse	LotAcreage	0.10	0.11
tblLandUse	LotAcreage	1.47	3.53
tblLandUse	LotAcreage	0.32	0.37
tblLandUse	LotAcreage	0.13	0.11
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.016
tblProjectCharacteristics	CO2IntensityFactor	720.49	402.51
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblSequestration	NumberOfNewTrees	0.00	100.00
tblVehicleTrips	CC_TL	7.30	4.70
tblVehicleTrips	CC_TL	7.30	2.80
tblVehicleTrips	CC_TL	7.30	4.30
tblVehicleTrips	CNW_TL	7.30	4.70
tblVehicleTrips	CNW_TL	7.30	2.80
tblVehicleTrips	CNW_TL	7.30	4.30
tblVehicleTrips	CW_TL	9.50	4.70
tblVehicleTrips	CW_TL	9.50	2.80
tblVehicleTrips	CW_TL	9.50	4.30
tblVehicleTrips	ST_TR	722.03	429.70
tblVehicleTrips	ST_TR	1.32	141.60
tblVehicleTrips	ST_TR	42.04	26.40

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tblVehicleTrips	SU_TR	542.72	429.70
tblVehicleTrips	SU_TR	0.68	141.60
tblVehicleTrips	SU_TR	20.43	26.40
tblVehicleTrips	WD_TR	496.12	429.70
tblVehicleTrips	WD_TR	6.97	141.60
tblVehicleTrips	WD_TR	44.32	26.40
tblWater	IndoorWaterUseRate	971,250.00	1,005,000.00
tblWater	OutdoorWaterUseRate	266,205.52	0.00
tblWater	OutdoorWaterUseRate	253,328.02	906,675.00

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2019	8-31-2019	1.0442	1.0442
2	9-1-2019	11-30-2019	0.8477	0.8477
3	12-1-2019	2-29-2020	0.7972	0.7972
4	3-1-2020	5-31-2020	0.6933	0.6933
5	6-1-2020	8-31-2020	0.1380	0.1380
		Highest	1.0442	1.0442

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	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Energy	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	251.7366	251.7366	7.3100e-003	3.3000e-003	252.9035
Mobile	0.5412	3.7199	4.6015	0.0165	1.6065	6.6500e-003	1.6131	0.4302	6.1700e-003	0.4364	0.0000	1,560.0384	1,560.0384	0.0915	0.0000	1,562.3265
Waste						0.0000	0.0000		0.0000	0.0000	34.3745	0.0000	34.3745	2.0315	0.0000	85.1613
Water						0.0000	0.0000		0.0000	0.0000	1.7731	15.1256	16.8987	0.1827	4.4100e-003	22.7816
Total	0.6821	3.8404	4.7043	0.0173	1.6065	0.0158	1.6223	0.4302	0.0153	0.4455	36.1476	1,826.9039	1,863.0515	2.3130	7.7100e-003	1,923.1766

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2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	70.8000
Total	70.8000

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	6/28/2019	5	20	
2	Grading	Grading	7/1/2019	7/12/2019	5	10	
3	Building Construction	Building Construction	7/15/2019	4/17/2020	5	200	
4	Paving	Paving	4/20/2020	5/15/2020	5	20	
5	Architectural Coating	Architectural Coating	5/18/2020	6/12/2020	5	20	

Acres of Grading (Site Preparation Phase): 4.12

Acres of Grading (Grading Phase): 4.12

Acres of Paving: 3.53

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Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 35,280; Non-Residential Outdoor: 11,760; Striped Parking Area: 5,100 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	45.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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					0.1829	0.0000	0.1829	0.0995	0.0000	0.0995	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	0.0434	0.4557	0.2206	3.8000e-004	0.1829	0.0239	0.2068	0.0995	0.0220	0.1215	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390

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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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0823	0.0000	0.0823	0.0448	0.0000	0.0448	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	0.0434	0.4557	0.2206	3.8000e-004	0.0823	0.0239	0.1062	0.0448	0.0220	0.0668	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389

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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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0323	0.0000	0.0323	0.0168	0.0000	0.0168	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0323	6.9900e-003	0.0393	0.0168	6.4300e-003	0.0232	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618

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					0.0145	0.0000	0.0145	7.5500e-003	0.0000	7.5500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0145	6.9900e-003	0.0215	7.5500e-003	6.4300e-003	0.0140	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870

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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	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868

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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	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788

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3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

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	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787

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3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

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	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

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	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.5412	3.7199	4.6015	0.0165	1.6065	6.6500e-003	1.6131	0.4302	6.1700e-003	0.4364	0.0000	1,560.0384	1,560.0384	0.0915	0.0000	1,562.3265
Unmitigated	0.5412	3.7199	4.6015	0.0165	1.6065	6.6500e-003	1.6131	0.4302	6.1700e-003	0.4364	0.0000	1,560.0384	1,560.0384	0.0915	0.0000	1,562.3265

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	5,904.08	5,904.08	5904.08	3,566,943	3,566,943
General Light Industry	594.72	594.72	594.72	565,874	565,874
Parking Lot	0.00	0.00	0.00		
Strip Mall	147.31	147.31	147.31	127,619	127,619
Total	6,646.11	6,646.11	6,646.11	4,260,436	4,260,436

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Fast Food Restaurant with Drive	4.70	4.70	4.70	2.20	78.80	19.00	29	21	50
General Light Industry	2.80	2.80	2.80	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	4.30	4.30	4.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	0.615011	0.035959	0.175734	0.096057	0.010793	0.005300	0.020678	0.029891	0.002015	0.001593	0.005502	0.000799	0.000668
General Light Industry	0.615011	0.035959	0.175734	0.096057	0.010793	0.005300	0.020678	0.029891	0.002015	0.001593	0.005502	0.000799	0.000668
Parking Lot	0.615011	0.035959	0.175734	0.096057	0.010793	0.005300	0.020678	0.029891	0.002015	0.001593	0.005502	0.000799	0.000668
Strip Mall	0.615011	0.035959	0.175734	0.096057	0.010793	0.005300	0.020678	0.029891	0.002015	0.001593	0.005502	0.000799	0.000668

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	120.6230	120.6230	4.7900e-003	9.0000e-004	121.0108
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	120.6230	120.6230	4.7900e-003	9.0000e-004	121.0108
NaturalGas Mitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928
NaturalGas Unmitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
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
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
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
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	527891	96.3799	3.8300e-003	7.2000e-004	96.6898
General Light Industry	34902	6.3723	2.5000e-004	5.0000e-005	6.3927
Parking Lot	29750	5.4316	2.2000e-004	4.0000e-005	5.4491
Strip Mall	68131.8	12.4392	4.9000e-004	9.0000e-005	12.4792
Total		120.6230	4.7900e-003	9.0000e-004	121.0107

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	527891	96.3799	3.8300e-003	7.2000e-004	96.6898
General Light Industry	34902	6.3723	2.5000e-004	5.0000e-005	6.3927
Parking Lot	29750	5.4316	2.2000e-004	4.0000e-005	5.4491
Strip Mall	68131.8	12.4392	4.9000e-004	9.0000e-005	12.4792
Total		120.6230	4.7900e-003	9.0000e-004	121.0107

6.0 Area Detail

6.1 Mitigation Measures Area

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Unmitigated	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-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	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Total	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Total	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	16.8987	0.1827	4.4100e-003	22.7816
Unmitigated	16.8987	0.1827	4.4100e-003	22.7816

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.17055 / 0	11.2378	0.1363	3.2800e-003	15.6234
General Light Industry	1.005 / 0	2.7080	0.0328	7.9000e-004	3.7649
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.413325 / 0.906675	2.9528	0.0136	3.4000e-004	3.3934
Total		16.8987	0.1827	4.4100e-003	22.7816

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.17055 / 0	11.2378	0.1363	3.2800e-003	15.6234
General Light Industry	1.005 / 0	2.7080	0.0328	7.9000e-004	3.7649
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.413325 / 0.906675	2.9528	0.0136	3.4000e-004	3.3934
Total		16.8987	0.1827	4.4100e-003	22.7816

8.0 Waste Detail

8.1 Mitigation Measures Waste

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	34.3745	2.0315	0.0000	85.1613
Unmitigated	34.3745	2.0315	0.0000	85.1613

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.27	32.1274	1.8987	0.0000	79.5942
General Light Industry	5.21	1.0576	0.0625	0.0000	2.6201
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.86	1.1895	0.0703	0.0000	2.9470
Total		34.3745	2.0315	0.0000	85.1613

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8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.27	32.1274	1.8987	0.0000	79.5942
General Light Industry	5.21	1.0576	0.0625	0.0000	2.6201
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.86	1.1895	0.0703	0.0000	2.9470
Total		34.3745	2.0315	0.0000	85.1613

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

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Equipment Type	Number
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11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	70.8000	0.0000	0.0000	70.8000

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	100	70.8000	0.0000	0.0000	70.8000
Total		70.8000	0.0000	0.0000	70.8000

