WINCHESTER AT JEAN NICHOLAS COMMERCIAL RETAIL CENTER AIR QUALITY, GLOBAL CLIMATE CHANGE, AND ENERGY IMPACT ANALYSIS

County of Riverside

May 4, 2021

gandhi

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

WINCHESTER AT JEAN NICHOLAS COMMERCIAL RETAIL CENTER AIR QUALITY, GLOBAL CLIMATE CHANGE, AND ENERGY IMPACT ANALYSIS

County of Riverside

October 16, 2020
(Revised May 4, 2021)

prepared by
Katie Wilson, MS
Catherine Howe, MS

GANDDINI GROUP INC.
550 Parkcenter Drive, Suite 202
Santa Ana, CA 92705
(714) 795-3100 | ganddini.com

Project No. 19-0221

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

The purpose of this air quality and global climate change impact analysis is to provide an assessment of the impacts resulting from development of the proposed Winchester at Jean Nicholas Commercial Retail Center project and to identify measures that may be necessary to reduce potentially significant impacts.

CONSTRUCTION-SOURCE EMISSIONS

Project construction-source emissions would not exceed applicable regional thresholds of significance established by the South Coast Air Quality Management District (SCAQMD). For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD.

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

Given the temporary and short-term construction schedule, the project would not result in a long-term (i.e., lifetime or 30-year) exposure to TACs as a result of project construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds and the nearest sensitive receptors to the project site are located approximately 115 feet (~35 meters) to the southwest. Therefore, impacts from TACs during construction would be less than significant.

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

OPERATIONAL-SOURCE EMISSIONS

With incorporation of sustainable design and compliance with regulation as listed in Section 5, Emission Reduction Measures, project operational-sourced emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. Project operational-source emissions would not result in or cause a significant localized air quality or toxic air contaminant (TAC) impacts as discussed in the Operations-Related Local Air Quality Impacts section of this report. Additionally, project-related trips will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO "hotspots). Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the project.

With incorporation of sustainable design and compliance with regulation as listed in Section 5, Emission Reduction Measures, project operational-source emissions would not conflict with the Basin AQMP. The project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential operational-source odor impacts are therefore considered less than significant.

GREENHOUSE GASES

With incorporation of sustainable design and compliance with regulation as listed in Section 5, Emission Reduction Measures, regulatory compliance and credit for reductions due to California Air Pollution Control Officers Association (CAPCOA) location-based efficiency measures, project-related greenhouse gas (GHG) emissions would still exceed the County of Riverside Climate Action Plan (CAP) Update screening threshold of 3,000 metric tons of carbon dioxide equivalents (MTCO2e) per year.

Per the County's CAP Update, those projects that exceed emissions of 3,000 MTCO2e per year are required to use the County's Screening Tables. Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the County's CAP Update. Consistent with California Environmental Quality Act (CEQA) Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.

Therefore, as the project's emissions exceed the County of Riverside CAP Update and SCAQMD draft screening threshold of 3,000 MTCO2e per year for all land uses, the project is required to garner at least 100 points from the County's CAP Update Screening Tables. The project accrued 101 points from the CAP Screening Tables (included in Appendix C). Therefore, with the requisite accrual of at least 100 points from the CAP Screening Tables, operation of the proposed project would not create a significant cumulative impact to global climate change and the project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

1. INTRODUCTION

This section describes the purpose of this air quality, global climate change, TAC, and energy impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map and Figure 2 illustrates the project site plan.

PURPOSE AND OBJECTIVES

This study was performed to address the possibility of regional/local air quality impacts and global climate change impacts, from project related air emissions. The objectives of the study include:

- documentation of the atmospheric setting
- discussion of criteria pollutants and greenhouse gases
- discussion of the air quality and global climate change regulatory framework
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- discussion of the project's TAC impacts
- analysis of the conformity of the proposed project with the SCAQMD AQMP
- analysis of the project's energy use during construction and operation
- recommendations for mitigation measures

The County of Riverside is the lead agency for this air quality and GHG analysis, in accordance with the CEQA authorizing legislation. Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with terms unique to air quality and global climate change, a definition of terms has been provided in Appendix A.

PROJECT LOCATION

The proposed project is located at the northwest corner of Winchester Road (SR-79) and Jean Nicholas Road in the unincorporated French Valley community of Riverside County. The site is currently vacant. The existing land use designation is Light Industrial. A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The approximately 2.9-acre project site is proposed to be developed with 2,627 square feet of coffee shop with drive-thru and a 16 fueling position gas station with 5,185 square foot super convenience market and 2,315 square foot car wash. The site is to also include a parking lot with 68 parking spaces and two loading spaces. Full access for the project site is proposed on Jean Nicholas Road opposite Mauna Loa Road. Figure 2 illustrates the proposed site plan.

PHASING AND TIMING

The proposed project is anticipated to be operational in 2022. The project is anticipated to be built in one phase with project construction anticipated to start no sooner than September 2020 and being completed by the end of March 2021. Even if construction was to occur any time after the respective dates, the analysis represents "worst-case" since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.[1]

[1] As shown in the California Emissions Estimator Model (CalEEMod) User's Guide Version 2016.3.2, Section 4.3 "OFFROAD Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements. The conditions have not changed since October 2020.

SENSITIVE RECEPTORS IN PROJECT VICINITY

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities (South Coast Air Quality Management District 2008). Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest sensitive receptors to the project site include the existing single-family detached residential dwelling units located approximately 115 feet southwest (across Jean Nicolas Road), 285 feet south (across the intersection of Jean Nicolas Road/Skyview Road and Highway 79/Winchester Road), 710 feet north, and 960 feet east of the project site. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.

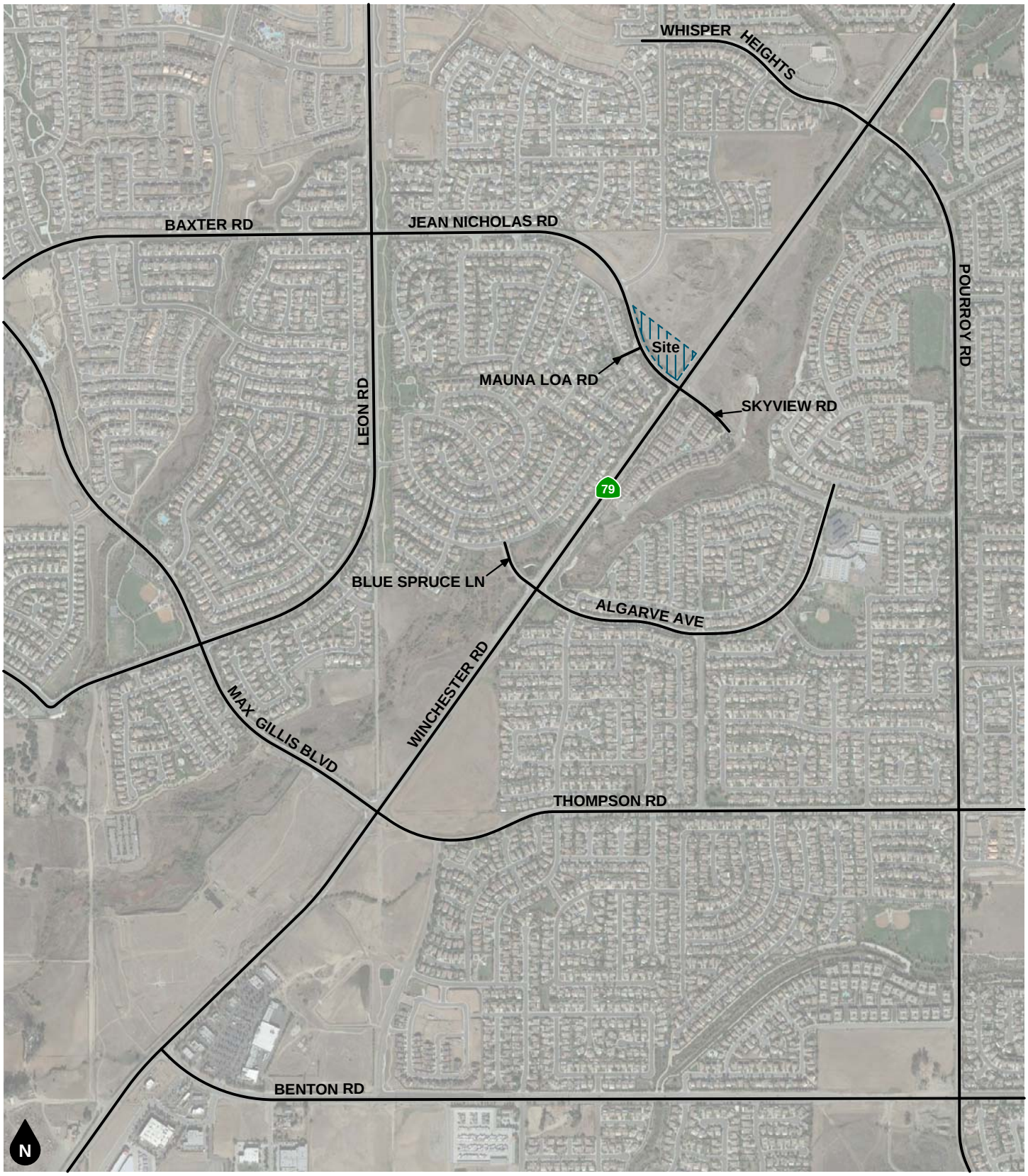

Figure 1
Project Location Map

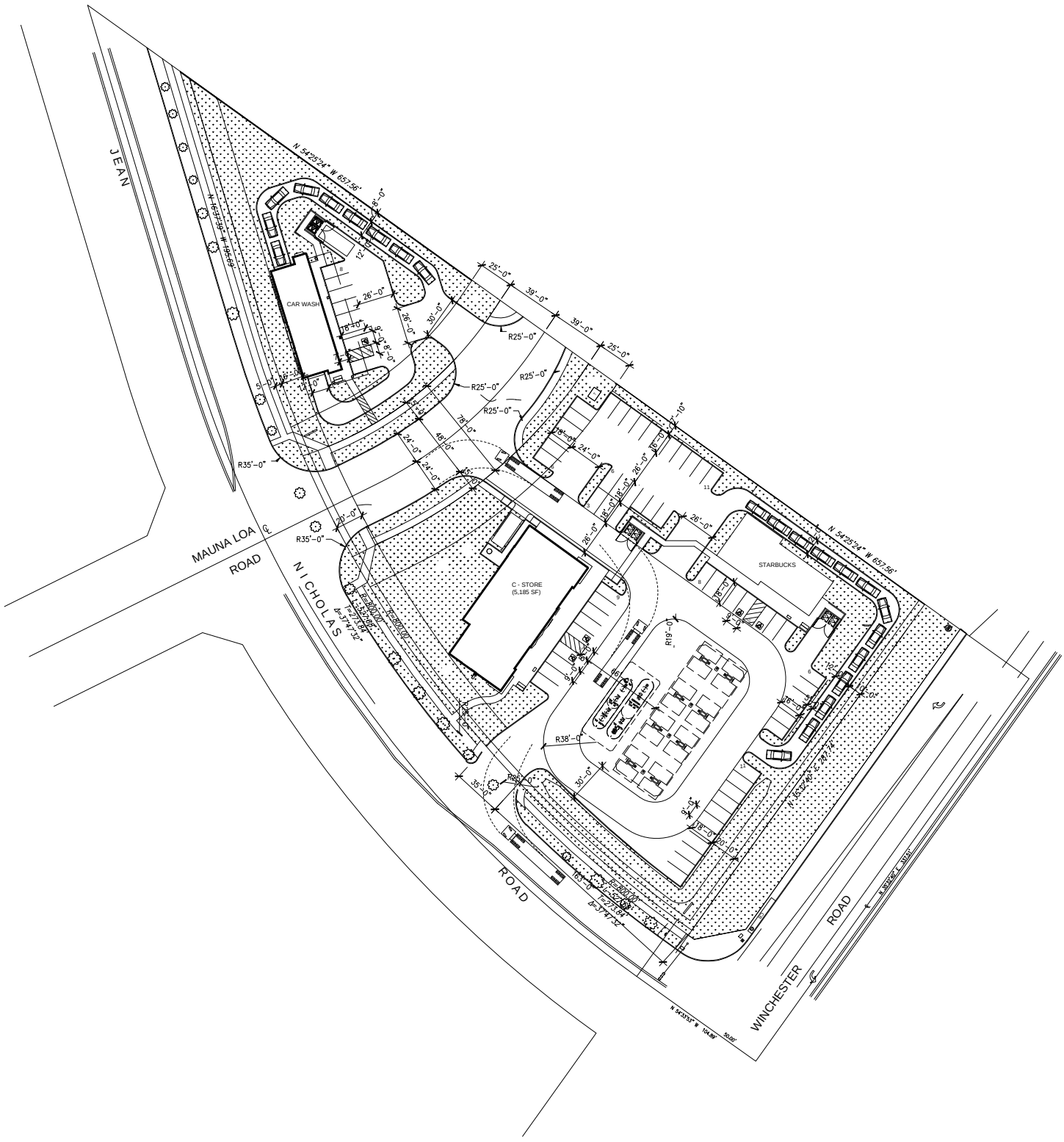

Figure 2
Site Plan

2. AIR QUALITY ANALYSIS

EXISTING AIR QUALITY CONDITIONS

Local Air Quality

The project is located within the portion of Riverside County that lies within the South Coast Air Basin (Basin). The project area is under the jurisdiction of the SCAQMD. The Basin is a 6,600-square-mile coastal plain bounded by the Pacific Ocean to the southwest and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, and all of Orange County.

The ambient concentrations of air pollutants are determined by the amount of emissions released by sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources.

Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The topography and climate of southern California combine to make the Basin an area of high air pollution potential. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds.

The usually mild climatological pattern is disrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cool marine layer and inhibits the pollutants in the marine layer from dispersing upward. In addition, light winds during the summer further limit ventilation. Furthermore, sunlight triggers the photochemical reactions that produce ozone. The region experiences more days of sunlight than any other major urban area in the nation except Phoenix (SCAQMD, 2007).

The temperature and precipitation levels for the City of Sun City, the closest station with updated data, are shown below in Table 1. Table 1 shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table 1
Local Monthly Climate Data

Descriptor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	66.1	68.4	69.6	76.7	82.1	91.9	97.4	98	92.6	84.2	73.8	67.6
Avg. Min. Temperature	36.3	38.7	41.1	44.4	49.6	54	58.9	59.4	57.5	49.2	39.8	34.5
Avg. Total Precipitation (in.)	2.66	3.25	1.96	0.66	0.31	0.05	0.03	0.24	0.15	0.25	0.66	1.02

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca8655

Data from the Sun City, CA station (048655).

Pollutants

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

Criteria Pollutants

The criteria pollutants consist of: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

Nitrogen Dioxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NOx and the pollutants formed from NOx can be transported over long distances, following the patterns of prevailing winds. Therefore controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone (O_3) is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form O_3. Ground-level O_3 is the primary constituent of smog. Sunlight and hot weather cause ground-level O_3 to form with the greatest concentrations usually occurring downwind from urban areas. O_3 is subsequently considered a regional pollutant. Ground-level O_3 is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are O_3 precursors, the health effects associated with O_3 are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high

traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Dioxide

Sulfur Oxide (SOx) gases (including sulfur dioxide [SO_2]) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead (Pb) is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Particulate matter is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Reactive Organic Gases (ROG)

Although not a criteria pollutant, reactive organic gases (ROGs), or volatile organic compounds (VOCs), are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably. Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of O_3. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

Other Pollutants of Concern

Toxic Air Contaminants (TACs)

In addition to the above-listed criteria pollutants, TACs are another group of pollutants of concern. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different TACs. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2013 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). Diesel particulate matter is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of diesel particulate matter as a TAC in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in diesel particulate matter by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot". Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of diesel particulate matter as a TAC was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to diesel particulate matter is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by the ARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. Naturally occurring asbestos is not present in Riverside County. The nearest likely locations of naturally occurring asbestos, as identified in the General Location Guide for Ultramafic Rocks in California prepared by the California Division of Mines and Geology, is located in Santa Barbara County. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

REGULATORY SETTING

The proposed project is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (USEPA) is responsible for setting and enforcing the NAAQS for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The NAAQS pollutants were identified using medical evidence and are shown below in Table 2.

The EPA and the California Air Resource Board (CARB) designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in Table 3.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The State Implementation Plan (SIP) must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the State Implementation Plan (SIP).

As indicated below in Table 3, the Basin has been designated by the EPA as a non-attainment area for O_3 and PM2.5. Currently, the Basin is in maintenance/attainment with the ambient air quality standards for CO, lead, SO_2, suspended PM-10, and NO_2.

State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the CAAQS, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP). The CAAQS for criteria pollutants are shown in Table 2. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. Furthermore, the motor vehicle emission standards established by CARB include compliance with the Safer Affordable Fuel Efficient Vehicles (SAFE) Rule, issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020). The SAFE Rule sets fuel economy and carbon dioxide standards that increase 1.5 percent in stringency each year from model years 2021 through 2026, and apply to both passenger cars and light trucks. CARB also sets fuel specifications to further reduce vehicular emissions.

The South Coast Air Basin has been designated by the CARB as a nonattainment area for ozone, PM10 and PM2.5. Currently, the South Coast Air Basin is in attainment with the ambient air quality standards for CO, lead, SO2, NO2, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM10 annual average standard to 20 µg/m3 and established an annual average standard for PM2.5 of 12 µg/m3. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. On September 27, 2007 CARB approved the South Coast Air Basin and the Coachella Valley 2007 Air Quality Management Plan for Attaining the Federal 8-hour Ozone and PM2.5 Standards. The plan projected attainment for the 8-hour Ozone standard by 2024 and the PM2.5 standard by 2015.

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, Title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California.

The CARB is also responsible for regulations pertaining to TACs. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the South Coast Air Basin. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

AB 617 Nonvehicular air pollution: criteria air pollutants and toxic air contaminants

This bill requires the state board to develop a uniform statewide system of annual reporting of emissions of criteria air pollutants and TACs for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of criteria air pollutants and TACs, as specified. This bill required the state board, by October 1, 2018, to prepare a monitoring plan regarding technologies for monitoring criteria air pollutants and TACs and the need for and benefits of additional community air monitoring systems, as defined. The bill requires the state board to select, based on the monitoring plan, the highest priority locations in the state for the deployment of community air monitoring systems. The bill requires an air district containing a selected location, by July 1, 2019, to deploy a system in the selected location. The bill would authorize the air district to require a stationary source that emits air pollutants in, or that materially affect, the selected location to deploy a fence-line monitoring system, as defined, or other specified real-time, on-site monitoring. The bill authorizes the state board, by January 1, 2020, and annually thereafter, to select additional locations for the deployment of the systems. The bill would require air districts that have deployed a system to provide to the state board air quality data produced by the system. By increasing the duties of air districts, this bill would impose a state-mandated local program. The bill requires the state board to publish the data on its Internet Web site.

Regional

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. On June 30, 2016, the SCAQMD released its Draft 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air.

Air Quality Management Plan

The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on

time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. On March 23, 2017 the CARB approved the 2016 AQMP. The primary goal of this AQMP is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged communities. Now that the Plan has been approved by the CARB, it has been forwarded to the U.S. EPA for its review. The Plan was approved by the EPA on June 15, 2017.

SCAQMD Rules and Regulations

During construction and operation, the project must comply with applicable rules and regulations. The following are rules the project may be required to comply with, either directly, or indirectly:

SCAQMD Rule 402

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

SCAQMD Rule 403

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

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors. Rule 403 measures may include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least three times daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour (mph) or less.
- Suspension of all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.
- Bumper strips or similar best management practices shall be provided where vehicles enter and exit the construction site onto paved roads or wash off trucks and any equipment leaving the site each trip.
- Replanting disturbed areas as soon as practical.
- During all construction activities, construction contractors shall sweep on-site and off-site streets if silt is carried to adjacent public thoroughfares, to reduce the amount of particulate matter on public streets. All sweepers shall be compliant with SCAQMD Rule 1186.1, Less Polluting Sweepers.

SCAQMD Rule 445

Prohibits permanently installed wood burning devices into any new development. A wood burning device means any fireplace, wood burning heater, or pellet-fueled wood heater, or any similarly enclosed, permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour.

SCAQMD Rule 481

Applies to all spray painting and spray coating operations and equipment. The rule states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

(1) The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.
(2) Coatings are applied with high-volume low-pressure, electrostatic and/or airless spray equipment.
(3) An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

SCAQMD Rule 1108

Governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the South Coast Air Basin. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

SCAQMD Rule 1113

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

SCAQMD Rule 1143

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

SCAQMD Rule 1186

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

SCAQMD Rule 1303

Governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM_{10} among other pollutants.

SCAQMD Rule 1401

New Source Review of Toxic Air Contaminants, specifies limits for maximum individual cancer risk, cancer burden, and non-cancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units, which emit toxic air contaminants.

SCAQMD Rule 1403

Asbestos Emissions from Demolition/Renovation Activities, specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM).

SCAQMD Rule 2202

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

Air Quality Guidance Documents

SCAQMD CEQA Handbook

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the South Coast Air Basin. Instead, this is controlled through local jurisdictions in accordance with the CEQA. In order to assist local jurisdictions with air quality compliance issues the CEQA Air Quality Handbook (SCAQMD CEQA Handbook) prepared by the SCAQMD (1993) with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs of the AQMP. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that the SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. SCAQMD is in the process of developing an "Air Quality Analysis Guidance Handbook" to replace the CEQA Air Quality Handbook approved by the AQMD Governing Board in 1993. The 1993 CEQA Air Quality Handbook is still available but not online. In addition, there are sections of the 1993 Handbook that are obsolete. In order to assist the CEQA practitioner in conducting an air quality analysis while the new Handbook is being prepared, supplemental information regarding: significance thresholds and analysis, emissions factors, cumulative impacts emissions analysis, and other useful subjects, are available at the SCAQMD website[2]. The SCAQMD CEQA Handbook and supplemental information is used in this analysis.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the Federally designated MPO for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Transportation Plan and Regional Transportation Improvement Plan (RTIP), which addresses regional development and growth forecasts. These plans form the basis for the land use and transportation

[2] http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The Regional Transportation Plan, Regional Transportation Improvement Plan, and AQMP are based on projections originating within the City and County General Plans.

On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy (2016 RTP/SCS or Plan). The Plan is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The Plan charts a course for closely integrating land use and transportation – so that the region can grow smartly and sustainably. It outlines more than $556.5 billion in transportation system investments through 2040. The Plan was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura. In June 2016, SCAG received its conformity determination from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 FTIP Consistency Amendment through Amendment 15-12 have been met.

On May 7, 2020, SCAG's Regional Council adopted Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy) for federal transportation conformity purposes only. In light of the COVID-19 pandemic, the Regional Council will consider approval of Connect SoCal in its entirety and for all other purposes within 120 days from May 7, 2020. Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. Connect SoCal outlines more than $638 billion in transportation system investments through 2045. It was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura.

Local – County of Riverside

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

The County relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Air Quality Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

The Air Quality Element of the County of Riverside General Plan summarizes air quality issues in the Basin, air quality-related plans and programs administered by federal, state, and special purpose agencies, and establishes goals and policies to improve air quality. These goals and policies in the Air Quality Element that relate to the proposed project include:

Multi-jurisdictional Cooperation:

AQ 1.1 Promote and participate with regional and local agencies, both public and private, to protect and improve air quality. (AI 111)

AQ 1.2 Support the Southern California Association of Government's (SCAG) Regional Growth Management Plan by developing intergovernmental agreements with appropriate governmental entities such as the Western Riverside Council of Governments (WRCOG), the

Coachella Valley Association of Governments (CVAG), sanitation districts, water districts, and those subregional entities identified in the Regional Growth Management Plan. (AI 111)

AQ 1.3 Participate in the development and update of those regional air quality management plans required under federal and state law, and meet all standards established for clean air in these plans. (AI 110)

AQ 1.4 Coordinate with the SCAQMD and MDAQMD to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced. (AI 111)

AQ 1.5 Establish and implement air quality, land use and circulation measures that improve not only the County's environment but the entire regions. (AI 111)

AQ 1.6 Establish a level playing field by working with local jurisdictions to simultaneously adopt policies similar to those in this Air Quality Element.

AQ 1.7 Support legislation which promotes cleaner industry, clean fuel vehicles and more efficient burning engines and fuels. (AI 113)

AQ 1.8 Support the introduction of federal, state or regional enabling legislation to permit the County to promote inventive air quality programs, which otherwise could not be implemented. (AI 113)

AQ 1.9 Encourage, publicly recognize and reward innovative approaches that improve air quality. (AI 113)

AQ 1.10 Work with regional and local agencies to evaluate the feasibility of implementing a system of charges (e.g., pollution charges, user fees, congestion pricing and toll roads) that requires individuals who undertake polluting activities to bear the economic cost of their actions where possible. (AI 111)

AQ 1.11 Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.

Sensitive Receptors:

AQ 2.1 The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible.

AQ 2.2 Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible.

AQ 2.3 Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.

Stationary Pollution Sources:

AQ 4.1 Encourage the use of building materials/methods which reduce emissions.

AQ 4.2 Require the use of all feasible efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.

AQ 4.3 Require centrally heated facilities to utilize automated time clocks or occupant sensors to control heating where feasible.

AQ 4.5 Require stationary pollution sources to minimize the release of toxic pollutants through:

- Design features;
- Operating procedures;
- Preventive maintenance;
- Operator training; and
- Emergency response planning

AQ 4.6 Require stationary air pollution sources to comply with applicable air district rules and control measures.

AQ 4.7 To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SOCAB, the Environmental Protection Agency and the California Air Resources Board.

AQ 4.8 Expand, as appropriate, measures contained in the County's Fugitive Dust Reduction Program for the Coachella Valley to the entire County.

AQ 4.9 Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.

AQ 4.10 Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended. (AI 111)

Energy Efficiency and Conservation:

AQ 5.1 Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.

AQ 5.4 Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.

Particulate Matter:

AQ 15.1 Identify and monitor sources, enforce existing regulations, and promote stronger controls to reduce particulate matter.

Multi-jurisdictional Cooperation:

AQ 16.1 Cooperate with local, regional, state and federal jurisdictions to better control particulate matter.

Control Measures:

AQ 17.1 Reduce particulate matter from agriculture, construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way, and off-road vehicles to the extent possible. (AI 123)

AQ 17.3 Identify and create a control plan for areas within the County prone to wind erosion of soil.

AQ 17.4 Adopt incentives, regulations and/or procedures to manage paved and unpaved roads and parking lots so they produce the minimum practicable level of particulates. (AI 111)

AQ 17.5 Adopt incentives and/or procedures to limit dust from agricultural lands and operations, where applicable. (AI 123)

AQ 17.6 Reduce emissions from building materials and methods that generate excessive pollutants, through incentives and/or regulations.

Table 2
State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm/1-hour 0.07 ppm/8-hour	0.070 ppm/8-hour	(a) Decline in pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm/1-hour 9.0 ppm/8-hour	35.0 ppm/1-hour 9.0 ppm/8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm/1-hour 0.03 ppm/annual	100 ppb/1-hour 0.053 ppm/annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm/1-hour 0.04 ppm/24-hour	75 ppb/1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 µg/m^3/24-hour 20 µg/m^3/annual	150 µg/m^3/24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3/24-hour 12 µg/m^3/annual	
Sulfates	25 µg/m^3/24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage.
Lead	1.5 µg/m^3/30-day	0.15 µg/m^3/3-month rolling	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particles when humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html

Table 3
South Coast Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment (Extreme)
Carbon monoxide	Attainment	Maintenance (Serious)
Nitrogen dioxide	Attainment	Maintenance (Primary)
Sulfur dioxide	Attainment	Attainment/Unclassified
PM10	Nonattainment	Maintenance (Serious)
PM2.5	Nonattainment	Nonattainment (Moderate)

Source (Federal and State Status): California Air Resources Board (2020) https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations & US EPA (2020) https://www.epa.gov/green-book.

MONITORED AIR QUALITY

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Final 2016 AQMP prepared by SCAQMD (March 2017) indicate that collectively, mobile sources account for 60 percent of the VOC, 90 percent of the NOx emissions, 95 percent of the CO emissions and 34 percent of directly emitted PM2.5, with another 13 percent of PM2.5 from road dust.

The SCAQMD has divided the South Coast Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the Temecula Valley Air Monitoring Area (Area 26), which is located in Riverside County and covers from the Pechanga Reservation on the south, Lake Skinner Park on the east, Menifee on the north, and Temecula and Wildomar on the west. The nearest air monitoring station to the project site is the Winchester-33700 Borel Road Monitoring Station (Winchester Station). The Winchester Station is located approximately 2.49 miles southeast of the project site at 33700 Borel Road, Winchester. As not all monitoring stations monitor all pollutants, data was also taken from the Lake Elsinore-W Flint Street Monitoring Station (Lake Elsinore) located approximately 13.4 miles northwest of the project site at 506 W Flint Street, Lake Elsinore and from the Perris Monitoring Station (Perris Station) located approximately 13.96 miles northwest of the project site at 237 ½ D Street, Perris Table 4 presents the monitored pollutant levels from the Winchester and Lake Elsinore Stations. However, it should be noted that due to the air monitoring stations distances from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site.

Table 4 summarizes 2017 through 2019 published monitoring data, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the ozone standards.

Ozone

During the 2017 to 2019 monitoring period, the State 1-hour concentration standard for ozone was not exceeded in 2019 and was exceeded between two and four days each year in 2017 and 2018 at the Winchester Station. The State 8-hour ozone standard has been exceeded between seven and 49 days each year over the past three years at the Winchester Station. The Federal 8-hour ozone standard was exceeded between six and 47 days each year over the past three years at the Winchester Station.

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

Carbon Monoxide

CO is another important pollutant that is due mainly to motor vehicles. The Lake Elsinore Station did not record an exceedance of the state or federal 8-hour CO standard for the last three years.

Nitrogen Dioxide

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

Particulate Matter

The State 24-hour concentration standards for PM10 were exceeded between two and 11 days each year over the last three years at the Perris Station. Over the past three years, the Perris Station did not record an exceedance of the Federal 24-hour standards for PM10.

There was insufficient data over the last three years for the Federal 24 hour standard for PM2.5 at the Winchester Station.

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

Table 4
Air Quality Monitoring Summary

Pollutant (Standard)[1]		Year		
		2017	2018	2019
Ozone:	Maximum 1-Hour Concentration (ppm)	0.104	0.107	0.091
	Days > CAAQS (0.09 ppm)	4	2	0
	Maximum 8-Hour Concentration (ppm)	0.088	0.085	0.079
	Days > NAAQS (0.070 ppm)	47	15	6
	Days > CAAQS (0.070 ppm)	49	18	7
Carbon Monoxide:[2]	Maximum 8-Hour Concentration (ppm)	*	*	*
	Days > CAAQS (9 ppm)	0	0	0
	Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:[2]	Maximum 1-Hour Concentration (ppm)	0.049	0.041	0.038
	Days > CAAQS (0.18 ppm)	0	0	0
Inhalable Particulates (PM10):[3]	Maximum 24-Hour Concentration (µg/m^3)	75.4	64.4	97.0
	Days > NAAQS (150 µg/m3)	0	0	0
	Days > CAAQS (50 µg/m3)	11	2	4
	Annual Average (µg/m3)	32.6	30.2	25.8
Ultra-Fine Particulates (PM2.5):	Maximum 24-Hour Concentration (µg/m3)	21.6	26.5	17.0
	Days > NAAQS (35 µg/m3)	*	*	*
	Annual Average (µg/m3)	10	7.1	7.6

Notes:

Source: http://www.arb.ca.gov/adam/topfour/topfour1.php. Data from the Winchester-33700 Borel Road Monitoring Station, unless otherwise noted.

(1) CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million

* Means there was insufficient data available to determine value.

(2) Data taken from the Lake Elsinore-W Flint Street Monitoring Station.

(3) Data taken from the Perris Monitoring Station.

AIR QUALITY STANDARDS

Significance Thresholds

Appendix G of the State CEQA Guidelines

Appendix G of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make a significance determination. Pursuant to Appendix G, the project would result in a significant impact related to air quality if it would:

- Conflict with or obstruct the implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The CEQA Guidelines Section 15064.7 provides the significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. The potential air quality impacts of the project are, therefore, evaluated according to thresholds developed by SCAQMD in their CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent guidance, which are listed below.[3] Therefore, the project would result in a potentially significant impact to air quality if it would:

AIR-1: Conflict with or obstruct the implementation of the applicable air quality plan;

AIR-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of:

- Criteria pollutant emissions during construction (direct and indirect) in excess of the SCAQMD's regional significance thresholds,
- Criteria pollutant emissions during operation (direct and indirect) in excess of the SCAQMD's regional significance thresholds.

AIR-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

AIR-4: Expose sensitive receptors to substantial pollutant concentrations that would:

- Exceed SCAQMD's localized significance thresholds,
- Cause or contribute to the formation of CO hotspots.
- Cause the emission of TACs

AIR-5: Create objectionable odors affecting a substantial number of people.

[3] While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from industrial land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace the CEQA Air Quality Handbook. In the interim, supplemental guidance has been adopted by the SCAQMD. The potential air quality impacts of the project are, therefore, evaluated according to numeric indicators developed by the SCAQMD in the CEQA Air Quality Handbook and supplemental guidance from the SCAQMD.[4]

Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, the SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the South Coast Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table 5.

Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significant Threshold Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significant Threshold Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5.

The significance thresholds for the local emissions of NO_2 and CO are determined by subtracting the highest background concentration from the last three years of these pollutants from Table 4 above, from the most restrictive ambient air quality standards for these pollutants that are outlined in the Localized Significant Thresholds. Table 5 shows the ambient air quality standards for NO_2, CO, and PM10 and PM2.5.

Toxic Air Contaminants

Construction

Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during the construction phase of the Project. According to the Office of Environmental Health Hazard Assessment (OEHHA)[5] and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),[6] health effects from TACs are described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 30-year lifetime will contract cancer based on the use of standard risk-

[4] While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from residential land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

[5] Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

[6] South Coast Air Quality Management District, 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/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2.

assessment methodology. Additionally, the SCAQMD CEQA guidance does not require a HRA for short-term construction emissions. Construction activities associated with the project would be sporadic, transitory, and short-term in nature (approximately 7 months). Thus, construction of the project would not result in a substantial, long-term (i.e., 30-year) source of TAC emissions. Nonetheless, a qualitative assessment of TAC emissions associated with short-term construction TAC emissions is provided in the analysis section below.

Operation

The project proposes to develop the site with commercial land uses. The site is proposed to be developed with a 2,627 square feet of coffee shop with drive-thru and a 16 fueling position super convenience market/gas station. The gas-station portion of the project will be permitted by SCAQMD and fuel-related emissions will be regulated by the SCAQMD Rule 461 and be required to obtain a Permit To Operate. Gasoline dispensing facilities are required to use Phase I/II EVR (enhanced vapor recovery) systems. Phase II EVR have an average efficiency of 95.1 percent and Phase I EVR have an average efficiency of 98 percent[7]. Therefore, potential for fugitive VOC or TAC emissions from the gasoline pumps is negligible. As such, the project will not be a significant source of TACs and sensitive receptors (as close as approximately 185 feet from the proposed gasoline fueling pumps) would not be exposed to toxic sources of air pollution. However, to be conservative, an analysis of gas station-related emissions has been provided below.

Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

[7] Source: ARB's: Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (12/23/2013), ARB's Attachment 1: Revised Emission Factors for Phase II Vehicle Fueling at California Gasoline Dispensing Facilities (12/23/2013)

Table 5
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	Construction (lbs/day)	Operation (lbs/day)
NOx	100	55
VOC	75	55
PM10	150	150
PM2.5	55	55
SOx	150	150
CO	550	550
Lead	3	3

Toxic Air Contaminants, Odor and GHG Thresholds	
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index > 1.0 (project increment)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402
GHG	10,000 MT/yr CO2e for industrial projects

Ambient Air Quality Standards	
Pollutant	SCAQMD Standards
NO2 -1-hour average	0.18 ppm (338 µg/m^3)
PM10 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 ug/m^3
PM2.5 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 µg/m^3
SO2 1-hour average 24-hour average	 0.25 ppm 0.04 ppm
CO 1-hour average 8-hour average	 20 ppm (23,000 µg/m^3) 9 ppm (10,000 µg/m^3)
Lead 30-day average Rolling 3-month average Quarterly average	 1.5 µg/m^3 0.15 µg/m^3 1.5 µg/m^3

Source: http://www.aqmd.gov/ceqa/handbook/signthres.pdf

SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the proposed project would have the potential to generate air emissions, TAC emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. The construction activities for the proposed project are anticipated to include: grading of approximately 2.935 acres; construction of a 2,627 square foot coffee-shop with drive through and a 5,185 square foot convenience market with 16 vehicle fueling positions and a 2,315 square foot automated car wash; paving of approximately 50 percent of the site (~1.48 acres) including a parking lot with 68 parking spaces and two loading spaces); and application of architectural coatings. The grading phase of the proposed project is anticipated to include no import or export of materials. See Appendix B for more details.

The proposed project is anticipated to start construction no sooner than September 2020 taking approximately seven months to complete with completion by the end of March 2021. The project is anticipated to be operational in 2022. Even if construction was to occur any time after the respective dates, the analysis represents "worst-case" since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.[8]

Methodology

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed project's short-term construction emissions for the criteria pollutants. The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

Emissions are estimated using the CalEEMod (Version 2016.3.2) software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California and is recommended by the SCAQMD.[9]

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The input values used in this analysis were adjusted to be project-specific for the construction schedule and the equipment used was based on CalEEMod defaults. The CalEEMod program uses the EMFAC2014 computer program to calculate the emission rates specific for the southwestern portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck operations. EMFAC2014 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Daily truck trips and CalEEMod default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst case day and do not represent the emissions that would occur for every day of project construction. The maximum daily emissions are compared to the SCAQMD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emission calculations are provided in Appendix B.

[8] As shown in the California Emissions Estimator Model (CalEEMod) User's Guide Version 2016.3.2, Section 4.3 "OFFROAD Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements. The conditions have not changed since October 2020.

[9] South Coast Air Quality Management District, California Emissions Estimator Model, http://www.aqmd.gov/caleemod/.

The project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of the Project area (approximately 2.9 acres) a Fugitive Dust Control Plan or Large Operation Notification would not be required.

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

Per SCAQMD Rule 1113 as amended on February 5, 2016, the architectural coatings that would be applied after January 1, 2014 will be limited to an average of 50 grams per liter or less of VOCs for building coatings and 100 grams per liter or less of VOCs for traffic coatings.

The phases of the construction activities which have been analyzed below for each phase are: (1) grading, (2) building construction, (3) paving, and (4) application of architectural coatings. Details pertaining to the project's construction timing and the type of equipment modeled for each construction phase are available in the CalEEMod output in Appendix B.

Construction-Related Regional Impacts

The construction-related criteria pollutant emissions for each phase are shown below in Table 6. Table 6 shows that none of the project's emissions will exceed regional thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The proposed project has been analyzed for the potential local air quality impacts created from: construction-related fugitive dust and diesel emissions; from TACs; and from construction-related odor impacts.

Local Air Quality Impacts from Construction

CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. The Appendix A Calculation Details for CalEEMod prepared by CAPCOA (October 2017) provides equipment-specific grading rates. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain the following parameters:

(1) The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
(2) The maximum number of acres disturbed on the peak day.
(3) Any emission control devices added onto off-road equipment.
(4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.

The CalEEMod output in Appendix B show the equipment used for this analysis.

As shown in Table 7, the maximum number of acres disturbed in a day would be 2 acres during grading**.** The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology prepared by SCAQMD (revised July 2008). The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. The emission thresholds were calculated based on the Temecula Valley source receptor area (SRA) 26 and a disturbance value of two acres per day. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter thresholds. The nearest sensitive receptors to the project site are the existing single-family detached residential dwelling units located approximately 115 feet (~35 meters) southwest of the project site; therefore, to be conservative, the SCAQMD Look-up Tables for 25 meters was used. Table 8 shows the on-site emissions from the CalEEMod model for the different construction phases and the LST emissions thresholds.

The data provided in Table 8 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

Construction-Related Human Health Impacts

Regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during construction of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project construction are not anticipated.

Construction-Related Toxic Air Contaminant Impacts

The greatest potential for TAC emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to the Office of Environmental Health Hazard Assessment (OEHHA)[10] and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),[11] health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 30-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 7 months), the project would not result in a long-term (i.e., lifetime or 30-year) exposure as a result of project construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds and the nearest sensitive receptors to the project site are located approximately 115 feet (~35 meters) to the southwest.

The project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. The project would also comply with the requirements of SCAQMD Rule 1403 if asbestos is found during the renovation and construction activities. Therefore, impacts from TACs during construction would be less than significant.

[10] Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

[11] South Coast Air Quality Management District, 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/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2.

Construction-Related Odor Impacts

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

Table 6
Construction-Related Regional Pollutant Emissions

Activity		Pollutant Emissions (pounds/day)					
		ROG	NOx	CO	SO_2	PM10	PM2.5
Grading	On-Site[1]	1.92	21.34	9.94	0.02	3.55	2.22
	Off-Site[2]	0.05	0.03	0.40	0.00	0.11	0.03
	Subtotal	1.97	21.37	10.34	0.02	3.66	2.25
Building Construction	On-Site[1]	2.91	21.72	19.41	0.03	1.22	1.17
	Off-Site[2]	0.33	2.32	2.53	0.01	0.74	0.21
	Subtotal	3.24	24.04	21.94	0.04	1.96	1.38
Paving	On-Site[1]	1.45	10.65	11.78	0.02	0.58	0.54
	Off-Site[2]	0.07	0.04	0.55	0.00	0.17	0.05
	Subtotal	1.52	10.69	12.33	0.02	0.75	0.58
Architectural Coating	On-Site[1]	12.89	1.53	1.82	0.00	0.09	0.09
	Off-Site[2]	0.05	0.03	0.41	0.00	0.12	0.03
	Subtotal	12.94	1.56	2.22	0.00	0.22	0.13
Total for overlapping phases[3]		17.71	36.29	36.49	0.07	2.93	2.09
SCAQMD Thresholds		75	100	550	150	150	55
Exceeds Thresholds?		No	No	No	No	No	No

Notes:
Source: CalEEMod Version 2016.3.2

(1) On-site emissions from equipment operated on-site that is not operated on public roads. On-site grading PM-10 and PM-2.5 emissions show mitigated values for fugitive dust for compliance with SCAQMD Rule 403.

(2) Off-site emissions from equipment operated on public roads.

(3) Construction, painting and paving phases may overlap.

Table 7
Maximum Number of Acres Disturbed Per Day

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Grading	Rubber Tired Dozers	1	0.5	0.5
	Graders	1	0.5	0.5
	Crawler Tractors[1]	2	0.5	1
Total for phase		-	-	2

Notes:
Source: California Air Pollution Control Officers Association (CAPCOA), Appendix A Calculation Details for CalEEMod prepared (October 2017).

(1) Tractor/loader/backhoe is a suitable surrogate for a crawler tractor per personal communication with SCAQMD staff in 2016.

Table 8
Local Construction Emissions at the Nearest Receptors

Activity	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Grading	21.34	9.94	3.55	2.22
Building Construction	21.72	19.41	1.22	1.17
Paving	10.65	11.78	0.58	0.54
Architectural Coating	1.53	1.82	0.09	0.09
Total for overlapping phases	33.89	33.00	1.90	1.80
SCAQMD Thresholds[1]	234	1,100	7	4
Exceeds Threshold?	No	No	No	No

Notes:
Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 2 acres at a distance of 25 m, to be conservative, in SRA 26 Temecula Valley.

(1) The nearest sensitive receptors are the existing single-family detached residential dwelling units located approximately 115 feet (~35 meters) southwest of the project site; therefore, to be conservative, the 25 meter threshold was used.

Note: The project will disturb up to a maximum of 2 acres a day during grading (see Table 7).

(2) Construction, painting and paving phases may overlap.

LONG-TERM OPERATIONAL EMISSIONS

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips and through operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality and local air quality impacts with the on-going operations of the proposed project.

Operations-Related Regional Air Quality Impacts

The potential operations-related air emissions have been analyzed below for the criteria pollutants and cumulative impacts.

Operations-Related Criteria Pollutants Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of the CalEEMod model. The operating emissions were based on the year 2022, which is the anticipated opening year per the Winchester at Jean Nicholas Commercial Retail Center Traffic Impact Analysis (TIA) prepared by Ganddini Group, Inc. (June 8, 2020) for the proposed project. The operations daily emissions printouts from the CalEEMod model are provided in Appendix B. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips (trip generation rate) from the TIA into the CalEEMod Model. The TIA found that the proposed project will generate approximately 5,185 total trips per day with a trip generation rate of 754.85 trips per thousand square foot per day for the coffee-shop with drive-through use (with incorporation of the 49% AM and 50% PM pass-by reduction) and 200.13 trips per fuel pump per day for the convenience market with gas station use (with incorporation of the 62% AM and 56% PM pass-by reduction). The program then applies the emission factors for each trip which is provided by the EMFAC2014 model to determine the vehicular traffic pollutant emissions.

Area Sources

Per the CAPCOA Appendix A Calculation Details for CalEEMod, area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. As specifics were not known about the landscaping equipment fleet, CalEEMod defaults were used to estimate emissions from landscaping equipment. No changes were made to the default area source parameters.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Gasoline Dispensing Facility

The emissions from the gasoline dispensing facility were calculated with the use of an annual throughput of 4 million gallons and the emissions factors for loading, breathing, refueling, hose permeation, and spillage

identified in Table X-1 of the SCAQMD Risk Assessment Procedures for Rules 1401, 1401.1 and 212.[12] Please see further details regarding the gasoline dispensing facility emissions in Operations-Related Toxic Air Contaminant Impacts analysis section below.

Project Impacts

The worst-case summer or winter criteria pollutant emissions created from the proposed project's long-term operations have been calculated and are shown below in Table 9. The results show that without incorporation of sustainable design and/or compliance with regulation, the proposed project would exceed SCAQMD regional thresholds for NOx. As shown in Table 9, the NOx emissions are primarily from mobile sources, which are controlled at the federal level[13].

The data provided in Table 10 shows that with incorporation of sustainable design and compliance with regulation (shown as "mitigation" in the CalEEMod output), emissions from the operation of the proposed project would no longer exceed SCAQMD operational thresholds for NOx.

The reductions come from incorporation of the following CAPCOA-based reduction measures and regulatory compliance: utilizing low-flow fixtures that would reduce indoor water demand by 20% per CalGreen Standards, , utilizing Energy Star appliances, utilizing water-efficient irrigation systems; and incorporation of the CAPCOA-based land use and site enhancement reduction measures: LUT-1 Increased Density, LUT-4 Improve Destination Accessibility, LUT-5 Increase Transit Accessibility, and SDT-1 Improve Pedestrian The use of each of these has been discussed further below Network (see CalEEMod Outputs in Appendix B for details):

- LUT-1 Increased Density provides a reduction based on the persons, jobs, or dwellings per unit area of the project site. Therefore, as this particular project includes commercial land uses, the reduction utilized in the CalEEMod modeling was based on the number of employees per job acre.
- LUT-4 Improve Destination Accessibility pertains to projects that are located in areas with high accessibility destinations (i.e., number of jobs or other attractions reachable within a given travel time) where there is increased potential for pedestrians to bike and walk to the destinations. In the CalEEMod modeling this reduction is estimated per the distance from the project site to the nearest downtown City area.
- LUT-5 Increase Transit Accessibility calculates reductions based on the distance from a project to the nearest transit facilities. As shown in the CalEEMod modeling for the proposed project, the project is located approximately 0.45 miles north of Riverside Transit Authority (RTA) Route 79 stop Algarve/Cloche.
- SDT-1 Improve Pedestrian Network is utilized for projects that are to provide a pedestrian access network internally as well as those that connect their internal pedestrian networks to external existing/planned streets and pedestrian facilities adjacent to the project site. As identified in Measure 3 (see Section 5, Emission Reduction Measures), the project is to include sidewalks both on-site and connecting off-site.

The data in Table 10 shows that with incorporation of sustainable design/regulatory compliance (listed as measures 1 through 4 in Section 5 of this report) and credit for reductions due to CAPCOA location-based efficiency measures, emissions from the operation of the proposed project would no longer exceed SCAQMD operational thresholds for NOx. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

[12] http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/riskassessproc-v8-1.pdf?sfvrsn=12

[13] https://www.epa.gov/sites/production/files/2020-03/documents/final-fr-safe-preamble-033020.pdf

Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analysis analyzes the vehicular CO emissions, local impacts from on-site operations per SCAQMD LST methodology, and odor impacts.

Local CO Emission Impacts from Project-Generated Vehicular Trips

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

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

The analysis prepared for CO attainment in the South Coast Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak CO concentrations in the South Coast Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections. Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of 1992 CO Plan and subsequent plan updates and air quality management plans. In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: South Long Beach Boulevard and Imperial Highway (Lynwood); Wilshire Boulevard and Veteran Avenue (Westwood); Sunset Boulevard and Highland Avenue (Hollywood); and La Cienega Boulevard and Century Boulevard (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the Level of Service in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be Level of Service E during the morning peak hour and Level of Service F during the afternoon peak hour.

The TIA showed that the proposed project would generate a maximum of approximately 5,185 daily vehicle trips. The intersection with the highest traffic volume is located at Winchester Road and Blue Spruce Lane and has an Existing Plus Ambient Plus Project Plus Cumulative PM peak hour volume of 1,860 vehicles. The 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. Therefore, as the intersection volume falls far short of 100,000 vehicles per day, no CO "hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

Local Air Quality Impacts from On-Site Operations

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant

emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The nearest sensitive receptors that may be impacted by the proposed project are the existing single-family detached residential dwelling units located approximately 115 feet (~35 meters) southwest, 285 feet (~87 meters) south, 710 feet (~216 meters) north, and 960 feet (~293 meters) east of the project site.

The local air quality emissions from on-site operations were analyzed according to the methodology described in Localized Significance Threshold Methodology, prepared by SCAQMD, revised July 2008. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. Per SCAQMD staff, the 5-acre Look-up Table, which is the largest site available, can be used as a conservative screening analysis for on-site operational emissions to determine whether more-detailed dispersion modeling would be necessary. The proposed project was analyzed based on the Temecula Valley source receptor area (SRA) 26 and as the site is only 2.9 acres, used the thresholds for a two-acre project site, to be conservative.

Table 11 shows the on-site emissions from the CalEEMod model that includes natural gas usage, landscape maintenance equipment, and vehicles operating on-site and the calculated emissions thresholds. Per LST methodology, mobile emissions include only on-site sources which equate to approximately 20 percent of the project-related new mobile sources.[14] The data provided in Table 11 shows that the on-going operations of the proposed project would not exceed SCAQMD local operational thresholds of significance discussed above. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

Operations-Related Human Health Impacts

As stated previously, regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during operation of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project construction are not anticipated.

Operations-Related Toxic Air Contaminant Impacts

The ARB Air Quality and Land Use Handbook (ARB Handbook) provides an advisory recommendation that a 50-foot separation be provided between sensitive receptors and typical gasoline dispensing facilities. The project includes the construction and operation of a 16-fuel pump gas station which is not anticipated to exceed 4 million gallons of throughput annually[15]. The closest sensitive receptors to the proposed gas station are located at a distance of approximately 185 feet (~56 meters) from the gas station canopy.

The fuel pump-portion of the project will be permitted by SCAQMD and fuel-related emissions will be regulated by the SCAQMD Rule 461 and be required to obtain a Permit To Operate. Gasoline dispensing facilities are required to use Phase I/II EVR (enhanced vapor recovery) systems. Phase II EVR have an average efficiency of 95.1 percent and Phase I EVR have an average efficiency of 98 percent. Therefore, the potential for fugitive VOC or TAC emissions from the gasoline pumps is negligible.

[14] The project site is approximately 0.14 miles in length at its longest point; therefore the on-site mobile source emissions represent approximately 1/49th of the shortest CalEEMod default distance of 6.9 miles. Therefore, to be conservative, 1/20th the distance (dividing the mobile source emissions by 20) was used to represent the portion of the overall mobile source emissions that would occur on-site.

[15] Per personal communication with the applicant, Michael Ramirez on 1/11/2021.

Assuming 4 million gallons per year of throughput for this gasoline-dispensing facility, using the SCAQMD Risk Assessment Procedures for Rules 1401, 1401.1 and 212[16] and the SCAQMD Permit Application Package "N"[17] and a downwind distance of 50 meters, to be conservative, in the Lake Elsinore area,[18] the residential cancer risk for the closest residential receptors is 4.3 in a million.[19]

In addition, the fugitive VOC emissions from the gasoline-dispensing facility were calculated with the use of a throughput of 4 million gallons and the emissions factors for loading, breathing, refueling, hose permeation, and spillage identified in Table X-1 of the SCAQMD Risk Assessment Procedures for Rules 1401, 1401.1 and 212.[20] The calculated VOC emissions from the gasoline-dispensing facility is approximately 8.17 pounds per day. As shown in Tables 9 and 10, even with incorporation of the VOC emissions generated by the gasoline-dispensing facility, the proposed project would not exceed the SCAQMD thresholds for VOCs.

As such, the project will not be a significant source of TACs or fugitive VOC emissions and sensitive receptors would not be exposed to toxic sources of air pollution. Therefore, the project will not result in significant Localized Operational emissions-related impacts.

Operations-Related Odor Impacts

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

[16] http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/riskassessproc-v8-1.pdf?sfvrsn=12

[17] http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/attachmentn-v8-1.pdf?sfvrsn=4

[18] The closest station to site with the requisite data for the gas station TAC analysis.

[19] Assumption of one million gallons of throughput per Table 3 of the SCAQMD Emissions Inventory and Risk Assessment Guidelines (https://www.aqmd.gov/docs/default-source/planning/risk-assessment/gas_station_hra.pdf?sfvrsn=0) and as part of the MICR calculations for the screening tables 12.1 A and 12.2 A on pages 90-93 of SCAQMD Permit Application Package "N" (http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/attachmentn-v8-1.pdf?sfvrsn=4).

[20] http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/riskassessproc-v8-1.pdf?sfvrsn=12

Table 9
Regional Operational Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Area Sources[1]	0.28	0.00	0.00	0.00	0.00	0.00
Energy Usage[2]	0.03	0.26	0.22	0.00	0.02	0.02
Mobile Sources[3]	8.24	56.37	70.53	0.30	20.34	5.57
Gasoline Dispensing Facility[4]	8.17	-	-	-	-	-
Total Emissions	16.71	56.63	70.75	0.30	20.36	5.59
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	**Yes**	No	No	No	No

Notes:
Source: CalEEMod Version 2016.3.2; the higher of either summer or winter emissions.

(1) Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

(2) Energy usage consists of emissions from generation of electricity and on-site natural gas usage.

(3) Mobile sources consist of emissions from vehicles and road dust.

(4) Calculated with the use of an annual throughput of 4 million gallons and the emissions factors for loading, breathing, refueling, hose permeation, and spillage identified in Table X-1 of the SCAQMD Risk Assessment Procedures for Rules 1401, 1401.1 and 212 (http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/riskassessproc-v8-1.pdf?sfvrsn=12).

Table 10
Regional Operational Pollutant Emissions With Incorporation of Design Features/Regulation

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Area Sources[1]	0.28	0.00	0.00	0.00	0.00	0.00
Energy Usage[2]	0.26	0.23	0.20	0.00	0.02	0.02
Mobile Sources[3]	7.59	50.41	50.65	0.21	12.62	3.47
Gasoline Dispensing Facility[4]	8.17	-	-	-	-	-
Total Emissions	16.29	50.64	50.85	0.21	12.64	3.48
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2016.3.2; the higher of either summer or winter emissions.

(1) Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

(2) Energy usage consists of emissions from generation of electricity and on-site natural gas usage.

(3) Mobile sources consist of emissions from vehicles and road dust.

(4) Calculated with the use of an annual throughput of 4 million gallons and the emissions factors for loading, breathing, refueling, hose permeation, and spillage identified in Table X-1 of the SCAQMD Risk Assessment Procedures for Rules 1401, 1401.1 and 212 (http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/riskassessproc-v8-1.pdf?sfvrsn=12).

Table 11
Local Operational Emissions at the Nearest Receptors

	On-Site Pollutant Emissions (pounds/day)[1]			
On-Site Emission Source	NOx	CO	PM10	PM2.5
Area Sources[2]	0.00	0.00	0.00	0.00
Energy Usage[3]	0.26	0.22	0.02	0.02
Vehicle Emissions[4]	2.82	3.53	1.02	0.28
Total Emissions	3.08	3.75	1.04	0.30
SCAQMD Thresholds for 25 meters[5]	234	1,100	2	1
Exceeds Threshold?	No	No	No	No

Notes:

(1) Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 2 acres, to be conservative.

(2) Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

(3) Energy usage consists of emissions from on-site natural gas usage.

(4) On-site vehicular emissions based on 1/20 of the gross vehicular emissions and road dust.

(5) The nearest sensitive receptors are the existing single-family detached residential dwelling units located approximately 115 feet (~35 meters) southwest of the project site; therefore, to be conservative, the 25 meter threshold was used.

CUMULATIVE AIR QUALITY IMPACTS

There are a number of cumulative projects in the project area that have not yet been built or are currently under construction. Since the timing or sequencing of the cumulative projects is unknown, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be speculative. Further, cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. The SCAQMD recommends using two different methodologies: (1) that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality;[21] and (2) that a project's consistency with the current AQMP be used to determine its potential cumulative impacts.

Project Specific Impacts

The project area is out of attainment for ozone, PM10, and PM2.5. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air cell will be the incremental addition of pollutants mainly from increased traffic volumes from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant.

Project operations would generate emissions of NOx, ROG, CO, PM10, and PM2.5, which, with incorporation of sustainable design and compliance with regulation, would not exceed the SCAQMD regional or local thresholds and would not be expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Since the project would not introduce any substantial stationary sources of emissions, CO is the benchmark pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. As indicated earlier, no violations of the state and federal CO standards are projected to occur for the project, based on the magnitude of traffic the project is anticipated to create. Therefore, with incorporation of sustainable design and compliance with regulation, operation of the project would not result in a cumulatively considerable net increase for non-attainment of criteria pollutants or ozone precursors. As a result, with incorporation of sustainable design and compliance with regulation, the project would result in a less than significant cumulative impact for operational emissions.

Air Quality Compliance

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

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

[21] South Coast Air Quality Management District, Potential Control Strategies to Address Cumulative Impacts from Air Pollution White Paper, 1993, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

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

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
(2) Whether the project will exceed the assumptions in the AQMP in 2016 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criteria 1 – Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air Analysis, short-term construction impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance. This Air Analysis also found that, with incorporation of sustainable design and compliance with regulation, long-term operations impacts will not result in significant impacts based on the SCAQMD local and regional thresholds of significance.

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

Criteria 2 – Exceed Assumptions in the AQMP?

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

The project site has a County of Riverside Land Use Designation of Light Industrial. The project proposes to develop the site with a 2,627 square foot coffee shop with drive-thru and a 16 fueling position super convenience market/gas station. Per the project applicant, the project is not acquiring an ABC License; therefore, a Zone Change or General Plan Amendment are not required and the proposed commercial uses would be considered allowable uses under the Light Industrial designation. Therefore, the proposed project is consistent with the County's land use designation. Therefore, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, with incorporation of sustainable design and compliance with regulation, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

3. GLOBAL CLIMATE CHANGE ANALYSIS

EXISTING GREENHOUSE GAS ENVIRONMENT

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

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop". The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide (CO_2)

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s. Each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC Fifth Assessment Report, 2014) Emissions of CO_2 from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010. Globally, economic and population growth continued to be the most important drivers of increases in CO_2 emissions from fossil fuel combustion. The contribution of population growth between 2000 and 2010 remained roughly identical to the previous three decades, while the contribution of economic growth has risen sharply.

Methane (CH_4)

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide (N_2O)

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is also commonly used as an aerosol spray propellant, (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and in race cars).

Chlorofluorocarbons (CFC)

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons (HFC)

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons (PFC)

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride (SF_6)

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

Global Warming Potential

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases. A summary of the atmospheric lifetime and the global warming potential of selected gases are summarized in Table 12. As shown in Table 12, the global warming potential of GHGs ranges from 1 to 22,800.

Table 12
Global Warming Potentials and Atmospheric Lifetimes

Gas	Atmospheric Lifetime	Global Warming Potential[1] (100 Year Horizon)
Carbon Dioxide (CO_2)	–[2]	1
Methane (CH_4)	12	28-36
Nitrous Oxide (N2O)	114	265-298
Hydrofluorocarbons (HFCs)	1-270	12-14,800
Perfluorocarbons (PFCs)	2,600-50,000	7,390-12,200
Nitrogen trifluoride (NF_3)	740	17,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Notes:
Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html

(1) Compared to the same quantity of CO_2 emissions.

(2) Carbon dioxide's lifetime is poorly defined because the gas is not destroyed over time, but instead moves among different parts of the ocean–atmosphere–land system. Some of the excess carbon dioxide will be absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments.

GREENHOUSE GAS STANDARDS AND REGULATION

International

Montreal Protocol

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

The Paris Agreement

The Paris Agreement became effective on November 4, 2016. Thirty days after this date at least 55 Parties to the United Nations Framework Convention on Climate Change (Convention), accounting in total for at least an estimated 55 % of the total global GHG emissions, had deposited their instruments of ratification, acceptance, approval or accession with the Depositary.

The Paris Agreement built upon the Convention and – for the first time – attempted to bring all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework. The Trump administration has recently indicated the United States federal government will no longer participate in the Paris agreement. The U.S. withdrew from the Agreement on November 4, 2020.

Federal

The USEPA is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate GHGs, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the

U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other GHGs as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions will not themselves impose any requirements on industry or other entities. However, it is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and Department of Transportation on September 15, 2009.

Clean Air Act

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), the U.S. Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 202 of the federal Clean Air Act (CAA) to regulate GHGs. The court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO2, CH4, N2O, HFCs, PFCs, and SF6) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently with the United States Supreme Court decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Energy Independence Security Act

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs.[22]

Executive Order 13432

In response to the Massachusetts v. Environmental Protection Agency ruling, the President signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. Executive Order 13432 was codified into law by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Light-Duty Vehicle GHG and Corporate Average Fuel Economy Standards.

On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards (CAFE)[23] and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle.[24] In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes CO2- equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[25]

State of California

California Air Resources Board

CARB, a part of the CalEPA, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (CAAQS), compiles emission inventories, develops suggested control measures, and

[22] A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

[23] The Corporate Average Fuel Economy standards are regulations in the United States, first enacted by Congress in 1975, to improve the average fuel economy of cars and light trucks. The U.S Department of Transportation has delegated the National Highway Traffic Safety Administration as the regulatory agency for the Corporate Average Fuel Economy standards.

[24] United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, August 2012, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF.

[25] National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf.

provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2004, the California Air Resources Board (CARB) adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other TACs (Title 13 California Code of Regulations [CCR], Section 2485). 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. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). CARB has also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation, adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. Refer to Section IV.B, *Air Quality*, of this Draft EIR for additional details regarding these regulations. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

Assembly Bill 1493

California Assembly Bill 1493 enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

Executive Order S-3-05

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

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

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

Assembly Bill 32 (California Health and Safety Code, Division 25.5 – California Global Warming Solutions Act of 2006)

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO2, CH4, N2O, HFCs, PFCs, and SF6 and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

Senate Bill 32 and Assembly Bill 197

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, and both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities.

Climate Change Scoping Plan (2008)

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (Health and Safety Code section 38561 (h)). CARB developed an AB 32 Scoping Plan that contains strategies to achieve the 2020 emissions cap. The initial Scoping Plan was approved in 2008, and contains a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 MMTCO2e using the GWP values from the IPCC SAR. CARB also projected the state's 2020 GHG emissions under no-action-taken (NAT) conditions – that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the state's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 MMTCO2e (using GWP values from the IPCC SAR). Therefore, under the original projections, the state must reduce its 2020 NAT emissions by 28.4 percent in order to meet the 1990 target of 427 MMTCO2e.

First Update to the Climate Change Scoping Plan (2014)

The First Update to the Scoping Plan was approved by CARB in May 2014 and builds upon the initial Scoping Plan with new strategies and recommendations. In 2014, CARB revised the target using the GWP values from the IPCC AR4 and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 MMTCO2e. CARB also updated the State's 2020 NAT emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's projected statewide 2020 emissions estimate using the GWP values from the IPCC AR4 is 509.4 MMTCO2e.

2017 Climate Change Scoping Plan

In response to the 2030 GHG reduction target, CARB adopted the 2017 Climate Change Scoping Plan at a public meeting held in December 2017. The 2017 Scoping Plan outlines the strategies the State will implement to achieve the 2030 GHG reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan also

addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The 2017 Scoping Plan considered the Scoping Plan Scenario and four alternatives for achieving the required GHG reductions but ultimately selected the Scoping Plan Scenario.

CARB states that the Scoping Plan Scenario "is the best choice to achieve the State's climate and clean air goals."[26] Under the Scoping Plan Scenario, the majority of the reductions would result from the continuation of the Cap-and-Trade regulation. Additional reductions are achieved from electricity sector standards (i.e., utility providers to supply at least 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the LCFS, implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan. The alternatives were designed to consider various combinations of these programs, as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030. Implementing this Scoping Plan will ensure that California's climate actions continue to promote innovation, drive the generation of new jobs, and achieve continued reductions of smog and air toxics. The ambitious approach draws on a decade of successful programs that address the major sources of climate-changing gases in every sector of the economy:

- More Clean Cars and Trucks: The plan sets out far-reaching programs to incentivize the sale of millions of zero-emission vehicles, drive the deployment of zero-emission trucks, and shift to a cleaner system of handling freight statewide.
- Increased Renewable Energy: California's electric utilities are ahead of schedule meeting the requirement that 33 percent of electricity come from renewable sources by 2020. The Scoping Plan guides utilities to 50 percent renewables, as required under SB 350.
- Slashing Super-Pollutants: The plan calls for a significant cut in super-pollutants such as methane and HFC refrigerants, which are responsible for as much as 40 percent of global warming.
- Cleaner Industry and Electricity: California's renewed cap-and-trade program extends the declining cap on emissions from utilities and industries and the carbon allowance auctions. The auctions will continue to fund investments in clean energy and efficiency, particularly in disadvantaged communities.
- Cleaner Fuels: The Low Carbon Fuel Standard will drive further development of cleaner, renewable transportation fuels to replace fossil fuels.
- Smart Community Planning: Local communities will continue developing plans which will further link transportation and housing policies to create sustainable communities.
- Improved Agriculture and Forests: The Scoping Plan also outlines innovative programs to account for and reduce emissions from agriculture, as well as forests and other natural lands.

The 2017 Scoping Plan also evaluates reductions of smog-causing pollutants through California's climate programs.

SB 32, Pavley. California Global Warming Solutions Act of 2006

(1) The California Global Warming Solutions Act of 2006 designates the State Air Resources Board as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases. The state board is required to approve a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective greenhouse gas emissions reductions. This bill would require the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.
(2) This bill would become operative only if AB 197 of the 2015–16 Regular Session is enacted and becomes effective on or before January 1, 2017. AB 197 requires that the California Air Resources Board, which

[26] California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

directs implementation of emission-reduction programs, should target direct reductions at both stationary and mobile sources. AB 197 of the 2015-2016 Regular Session was approved on September 8, 2016.

Executive Order S-1-07

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

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

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

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to the CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

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

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of

significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.

- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation".
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 375

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

The proposed project is located within the SCAG jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by the CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

Senate Bill X7-7

Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. In addition, SB X7-7 required the DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

Assembly Bill 939 and Senate Bill 1374

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

California Code of Regulations (CCR) Title 24, Part 6

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

The Energy Commission adopted 2008 Standards on April 23, 2008, and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. CalEEMod modeling defaults to 2008 standards. 2013 Standards were approved and have been effective since July 1, 2014. 2016 Standards were adopted January 1, 2017. 2019 standards were published July 1, 2019 and became effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Per Section 100 Scope, the 2019 Title 24, Part 6 Building Code now requires healthcare facilities, such as assisted living facilities, hospitals, and nursing homes, to meet documentation requirements of Title 24, Part 1 Chapter 7 – Safety Standards for Health Facilities. A healthcare facility is defined as any building or portion thereof licensed pursuant to California Health and Safety Code Division 2, Chapter 1, Section 1204 or Chapter 2, Section 1250.

Section 120.1 Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times. The 2019 version of the Code also completely revised the minimum ventilation requirements including DVC airflow rates within Section 120.1 Table 120.1–A. Table 120.1-A now includes air classification and recirculation limitations, these are based on either the number of occupants or the CFM/ft^2 (cubic feet per minute per square foot), whichever is greater.

Section 120.1 Ventilation and Indoor Air Quality also included additions for high-rise residential buildings. Requirements include that mechanical systems must provide air filters that and that air filters must be MERV 13 or use a particle size efficiency rating specified in the Energy Code. Window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to

provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1.

Per Section 120.1(a) healthcare facilities must be ventilated in accordance with Chapter 4 of the California Mechanical Code and are NOT required to meet the ventilations requirements of Title 24, Part 6.

Section 140.4 Space Conditioning Systems included both additions and revisions within the 2019 Code. The changes provided new requirements for cooling tower efficiency, new chilled water cooling system requirements, as well as new formulas for calculating allowed fan power. Section 140.4(n) also provide a new exception for mechanical system shut-offs for high-rise multifamily dwelling units, while Section 140.4(o) added new requirements for conditioned supply air being delivered to space with mechanical exhaust.

Section 120.6 Covered Processes added information in regards to adiabatic chiller requirements that included that all condenser fans for air-cooled converseness, evaporative-cooled condensers, adiabatic condensers, gas coolers, air or water fluid coolers or cooling towers must be continuously variable speed, with the speed of all fans serving a common condenser high side controlled in unison .Further, the mid-condensing setpoint must be 70 degrees Fahrenheit for all of the above mentioned systems.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regard to sunlight provided through skylights and overhangs.

Section 130.2 Outdoor Lighting Controls and Equipment added automatic scheduling controls which included that outdoor lighting power must be reduced by 50 to 90 percent, turn the lighting off during unoccupied times and have at least two scheduling options for each luminaire independent from each other and with a 2-hour override function. Furthermore, motion sensing controls must have the ability to reduce power within 15 minutes of area being vacant and be able to come back on again when occupied. An exception allows for lighting subject to a health or life safety statute, ordinance, or regulation may have a minimum time-out period longer than 15 minutes or a minimum dimming level above 50% when necessary to comply with the applicable law.

California Code of Regulations (CCR) Title 24, Part 11 (California Green Building Standards)

On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011.

2016 CALGreen Code: The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. During the 2016-2017 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2015 Triennial Code Adoption Cycle.

HCD also increased the required construction waste reduction from 50 percent to 65 percent of the total building site waste. This increase aids in meeting CalRecycle's statewide solid waste recycling goal of 75 percent for 2020 as stated in Chapter 476, Statutes of 2011 (AB 341). HCD adopted new regulations requiring recycling areas for multifamily projects of five or more dwelling units. This regulation requires developers to provide readily accessible areas adequate in size to accommodate containers for depositing, storage and collection of non-hazardous materials (including organic waste) for recycling. This requirement assists businesses that were required as of April 1, 2016, to meet the requirements of Chapter 727, Statutes of 2014 (AB 1826).

HCD adopted new regulations to require information on photovoltaic systems and electric vehicle chargers to be included in operation and maintenance manuals. Currently, CALGreen section 4.410.1 Item 2(a) requires operation and maintenance instructions for equipment and appliances. Photovoltaic systems and electric

vehicle chargers are systems that play an important role in many households in California, and their importance is increasing every day. HCD incorporated these two terms in the existing language in order to provide clarity to code users as to additional systems requiring operation and maintenance instructions.

HCD updated the reference to Clean Air Standards of the USEPA applicable to woodstoves and pellet stoves. HCD also adopted a new requirement for woodstoves and pellet stoves to have a permanent label indicating they are certified to meet the emission limits. This requirement provides clarity to the code user and is consistent with the USEPA's New Source Performance Standards. HCD updated the list of standards which can be used for verification of compliance for exterior grade composite wood products. This list now includes four standards from the Canadian Standards Association (CSA): CSA O121, CSA O151, CSA O153 and CSA O325. HCD updated heating and air-conditioning system design references to the ANSI/ACCA 2 Manual J, ANSI/ACCA 1 Manual D, and ANSI/ACCA 3 Manual S to the most recent versions approved by ANSI. HCD adopted a new elective measure for hot water recirculation systems for water conservation. The United States Department of Energy estimates that 3,600 to 12,000 gallons of water per year can be saved by the typical household (with four points of hot water use) if a hot water recirculation system is installed.

2019 CALGreen Code: During the 2019-2020 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle.

HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regard to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regard to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

Executive Order B-30-15

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

Executive Order B-29-15

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

Executive Order B-37-16

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

SBX1 2

Signed into law in April 2011, SBX1 2, requires one-third of the State's electricity to come from renewable sources. The legislation increases California's current 20 percent renewables portfolio standard target in 2010 to a 33 percent renewables portfolio standard by December 31, 2020.

Senate Bill 350

Signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

Energy Sector and CEQA Guidelines Appendix F

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The 2016 update to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several key areas to improve the energy efficiency of renovations and addition to existing buildings as well as newly constructed buildings and renovations and additions to existing buildings. The major efficiency improvements to the residential Standards involve improvements for attics, walls, water heating, and lighting, whereas the major efficiency improvements to the nonresidential Standards include alignment with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national

standards. Furthermore, the 2016 update required that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.[27]

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."[28] As of January 1, 2011, the CALGreen Code is mandatory for all new buildings constructed in the state. The CALGreen Code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2019 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2020.

Regional – South Coast Air Quality Management District

The project is within the South Coast Air Basin, which is under the jurisdiction of SCAQMD.

SCAQMD Regulation XXVII, Climate Change

SCAQMD Regulation XXVII currently includes three rules:

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

A variety of agencies have developed GHG emission thresholds and/or have made recommendations for how to identify a threshold. However, the thresholds for projects in the jurisdiction of the SCAQMD remain in flux. The CAPCOA explored a variety of threshold approaches but did not recommend one approach (2008). The ARB recommended approaches for setting interim significance thresholds (California Air Resources Board 2008b), in which a draft industrial project threshold suggests that non-transportation related emissions under 7,000 MTCO2e per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The SCAQMD is in the process of developing thresholds, as discussed below.

SCAQMD Threshold Development

On December 5, 2008, the SCAQMD Governing Board adopted an interim GHG significance threshold for stationary sources, rules, and plans where the SCAQMD is lead agency (SCAQMD permit threshold). The SCAQMD permit threshold consists of five tiers. However, the SCAQMD is not the lead agency for this project. Therefore, the five permit threshold tiers do not apply to the proposed project.

[27] California Energy Commission, 2016 Building Energy Efficiency Standards, June 2015, http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf

[28] California Building Standards Commission, 2010 California Green Building Standards Code, (2010).

The SCAQMD is in the process of preparing recommended significance thresholds for GHGs for local lead agency consideration ("SCAQMD draft local agency threshold"); however, the SCAQMD Board has not approved the thresholds as of the date of the Notice of Preparation. The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to a project's operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:
  - All land use types: 3,000 MTCO2e per year
  - Based on land use type: residential: 3,500 MTCO2e per year; commercial: 1,400 MTCO2e per year; or mixed use: 3,000 MTCO2e per year.
  - Based on land type: Industrial (where SCAQMD is the lead agency), 10,000 MTCO2e per year.
- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual (BAU) by a certain percentage; this percentage is currently undefined.
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures.
  - Option 3, 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO2e/SP/year for projects and 6.6 MTCO2e/SP/year for plans;
  - Option 3, 2035 target: 3.0 MTCO2e/SP/year for projects and 4.1 MTCO2e/SP/year for plans.
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus stabilizing global climate. Specifically, the Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to a CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact report, which includes analyzing feasible alternatives and imposing feasible mitigation measures. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMTCO2eq/year). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to BACT for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility.

SCAQMD Working Group

Since neither the CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions

thresholds, which recommends a tiered approach that provides a quantitative annual thresholds of 10,000 MTCO2e for industrial uses.

In order to assist local agencies with direction on GHG emissions, the SCAQMD adopted Rules 2700, 2701, 2702, and 3002 which are described below.

SCAQMD Rules 2700 and 2701

The SCAQMD adopted Rules 2700 and 2701 on December 5, 2008, which establishes the administrative structure for a voluntary program designed to quantify GHG emission reductions. Rule 2700 establishes definitions for the various terms used in Regulation XXVII – Global Climate Change. Rule 2701 provides specific protocols for private parties to follow to generate certified GHG emission reductions for projects within the district. Approved protocols include forest projects, urban tree planting, and manure management. The SCAQMD is currently developing additional protocols for other reduction measures. For a GHG emission reduction project to qualify, it must be verified and certified by the SCAQMD Executive Officer, who has 60 days to approve or deny the Plan to reduce GHG emissions. Upon approval of the Plan, the Executive Officer issues required to issue a certified receipt of the GHG emission reductions within 90 days.

SCAQMD Rule 2702

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

SCAQMD Rule 3002

The SCAQMD amended Rule 3002 on November 5, 2010 to include facilities that emit greater than 100,000 tons per year of CO_2e are required to apply for a Title V permit by July 1, 2011. A Title V permit is for facilities that are considered major sources of emissions.

Local – County of Riverside

The County of Riverside's Climate Action Plan Update (CAP) was completed in November 2019. The CAP Update describes Riverside County's GHG emissions for the year 2017, projects how these emissions will increase into 2020, 2030, and 2050, and includes strategies to reduce emissions to a level consistent with the State of California's emissions reduction targets. The CAP Update sets a target to reduce community-wide GHG emission emissions by 15 percent from 2008 levels by 2020, 49 percent by 2030, and 83 percent by 2050.

Appendix D of the Riverside County CAP Update also states that project's that do not exceed the CAP's screening threshold of 3,000 MTCO2e per year are considered to have less than significant GHG emissions and are in compliance with the County's CAP Update. Therefore, to determine whether the project's GHG emissions are significant, this analysis uses the County of Riverside CAP Update screening threshold of 3,000 MTCO2e per year for all land use types. Projects that do not exceed emissions of 3,000 MTCO2e per year are also required to include the following efficiency measures:

- Energy efficiency matching or exceeding the Title 24 requirements in effect as of January 2017, and
- Water conservation measures that matches the California Green Building Code in effect as of January 2017.

Projects that exceed emissions of 3,000 MTCO2e per year are also required to use Screening Tables. Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the County's CAP Update. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions. Those projects that do not garner 100 points using the Screening Tables will need to provide additional analysis to determine the significance of GHG emissions.

SIGNIFICANCE THRESHOLDS

Appendix G of State CEQA Guidelines

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
- The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions[29].

Thresholds of Significance for this Project

To determine whether the project's GHG emissions are significant, this analysis uses the County of Riverside CAP Update screening threshold of 3,000 MTCO2e per year for all land uses.

METHODOLOGY

The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. The following provides the methodology used to calculate the project-related GHG emissions and the project impacts.

CalEEMod Version 2016.3.2 was used to calculate the GHG emissions from the proposed project. The CalEEMod Annual Output for year 2022 is available in Appendix C. Each source of GHG emissions is described in greater detail below.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source emissions.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

[29] The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the TIA into the CalEEMod Model. The program then applies the emission factors for each trip which is provided by the EMFAC2014 model to determine the vehicular traffic pollutant emissions. See Section 2 for details.

Waste

Waste includes the GHG emissions generated from the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. No changes were made to the default waste parameters.

Water

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. No changes were made to the default water usage parameters.

Construction

The construction-related GHG emissions were also included in the analysis and were based on a 30 year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The construction-related GHG emissions were calculated by CalEEMod and in the manner detailed above in Section 2.

PROJECT GREENHOUSE GAS EMISSIONS

The GHG emissions have been calculated based on the parameters described above. A summary of the results are shown below in Table 13 and the CalEEMod Model run for the proposed project is provided in Appendix C. Table 13 shows that the total for the proposed project's emissions (without credit for any reductions from sustainable design and/or regulatory requirements) would be 4,912.05 MTCO2e per year. According to the thresholds of significance established above, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations of the proposed project would exceed the County of Riverside CAP Update threshold of 3,000 $MTCO_2e$ per year for all land uses. Therefore, as the total emissions for the proposed project would exceed the screening threshold of 3,000 MTCO2e per year, emissions reductions are required (see Section 5, Emissions Reduction Measures for details).

The data provided in Table 14 shows that with compliance with regulation and incorporation of sustainable design (compliance with regulation is shown as "mitigation" in the CalEEMod output), the proposed project's total emissions would be reduced to 3,461.18 $MTCO_2e$ per year. The reduction comes from incorporation of the following CAPCOA-based reduction measures and regulatory compliance: utilizing low-flow fixtures that would reduce indoor water demand by 20% per CALGreen Standards, utilizing Energy Star appliances, utilizing water-efficient irrigation systems; and incorporation of the CAPCOA-based land use and site enhancement reduction measures: LUT-1 Increased Density, LUT-4 Improve Destination Accessibility, LUT-5 Increase Transit Accessibility, and SDT-1 Improve Pedestrian Network (see CalEEMod Annual Output in Appendix C for details).

However, even with incorporation of regulatory compliance and credit for reductions due to CAPCOA location-based efficiency measures, as shown in Table 14, the proposed project would still exceed the Riverside County CAP Update screening threshold of 3,000 MTCO2e per year for all land uses.

Per the County's CAP Update, projects that exceed emissions of 3,000 MTCO2e per year are also required to use Screening Tables. Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the County's CAP Update. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions. Therefore, in order for the project to have less than significant individual and cumulative impact for GHG emissions and be consistent with the CAP, the project is required to garner at least 100 points from the County's CAP Screening Tables.

The project will garner: 7 points for windows, 12 points for cool roofs, 8 points for heating/cooling distribution systems, 19 points for water heaters, 14 points for artificial lighting, 2 points for solar-ready roofs, 4 points for water-efficient landscaping, 5 points for water-efficient irrigation systems, 3 points for water-efficient toilets/urinals, 3 points for water -efficient faucets, 5 points for recycled water, 1 point for car/vanpool program, 1 point for employee bicycle/pedestrian programs, 1 point for parking, 8 points for electric vehicle recharging, 2 points for recycling, and 6 points for recycling of construction debris; all of which add up to 101 points. Therefore, the project has accrued at least 100 points from the CAP Screening Tables (as shown in Appendix C) and the proposed project would not create a significant cumulative impact to global climate change.

Table 13
Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[1]	0.00	0.00	0.00	0.00	0.00	0.00
Energy Usage[2]	0.00	115.33	115.33	0.00	0.00	115.87
Mobile Sources[3]	0.00	4,753.74	4,753.74	0.31	0.00	4,761.46
Waste[4]	7.90	0.00	7.90	0.47	0.00	19.57
Water[5]	0.32	4.84	5.16	0.03	0.00	6.23
Construction[6]	0.00	8.89	8.89	0.00	0.00	8.93
Total Emissions	8.22	4,882.80	4,891.02	0.81	0.00	4,912.05
County of Riverside CAP Update Screening Threshold						3,000
Exceeds Threshold?						**Yes**

Notes:

Source: CalEEMod Version 2016.3.2 for Opening Year 2022.

(1) Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.

(2) Energy usage consist of GHG emissions from electricity and natural gas usage.

(3) Mobile sources consist of GHG emissions from vehicles.

(4) Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.

(5) Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

(6) Construction GHG emissions CO2e based on a 30 year amortization rate.

Table 14
Project-Related Greenhouse Gas Emissions With Incorporation of Design Features/Regulation

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[1]	0.00	0.00	0.00	0.00	0.00	0.00
Energy Usage[2]	0.00	105.15	105.15	0.00	0.00	105.63
Mobile Sources[3]	0.00	3,315.19	3,315.19	0.27	0.00	3,321.94
Waste[4]	7.90	0.00	7.90	0.47	0.00	19.57
Water[5]	0.26	4.00	4.25	0.03	0.00	5.11
Construction[6]	0.00	8.89	8.89	0.00	0.00	8.93
Total Emissions	8.16	3,433.22	3,441.38	0.77	0.00	3,461.18
County of Riverside CAP Update Screening Threshold						3,000
Exceeds Threshold?						**Yes**

Notes:

Source: CalEEMod Version 2016.3.2 for Opening Year 2022.

(1) Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.

(2) Energy usage consist of GHG emissions from electricity and natural gas usage.

(3) Mobile sources consist of GHG emissions from vehicles.

(4) Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.

(5) Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

(6) Construction GHG emissions CO2e based on a 30 year amortization rate.

CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

The proposed project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. As stated previously, the County of Riverside has a CAP; therefore, the project and its GHG emissions have been compared to the goals of the County of Riverside CAP Update.

Per the County's CAP Update, the County adopted its first Climate Action Plan (CAP) in 2015 which set a target to reduce emissions back to 1990 levels by the year 2020 as recommended in the AB 32 Scoping Plan. Furthermore, the goals and supporting measures within the County's CAP Update are proposed to reflect and ensure compliance with changes in the local and State policies and regulations such as SB 32 and California's 2017 Climate Change Scoping Plan. Therefore, compliance with the County's CAP in turn reflects consistency with the goals of the CARB Scoping Plan, Assembly Bill (AB) 32 and Senate Bill (SB) 32.

According to the County's CAP Update, projects that do not exceed emissions of 3,000 MTCO2e per year are also required to include the following efficiency measures:

- Energy efficiency matching or exceeding the Title 24 requirements in effect as of January 2017, and
- Water conservation measures that matches the California Green Building Code in effect as of January 2017.

As stated above, even with incorporation of regulatory compliance and credit for reductions due to CAPCOA location-based efficiency measures, the GHG emissions generated by the proposed project would exceed the County of Riverside CAP Update screening threshold of 3,000 metric tons per year of CO2e. Projects that exceed emissions of 3,000 MTCO2e per year are also required to use Screening Tables. Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the County's CAP Update and would be determined to have a less than significant individual and cumulative impact for GHG emissions.

The project accrued 101 points from the CAP Screening Tables (included in Appendix C). Therefore, as the project would comply with the goals of the County of Riverside CAP Update, the project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

CUMULATIVE GREENHOUSE GAS IMPACTS

Although the project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. Therefore, in the case of global climate change, the proximity of the project to other GHG emission generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective."[30] The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

The state has mandated a goal of reducing statewide emissions to 1990 levels by 2020, even though statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions. Currently, the County of Riverside CAP Update's initial screening procedure is to determine if a project will emit 3,000 MTCO2E per year or more. Projects that do not exceed this threshold require no further climate change analysis. Therefore, consistent with CEQA Guidelines Section 15064h(3),[31] the County, as lead agency, has determined that the project's contribution to cumulative GHG emissions and global climate change would be less than significant if the project is consistent with the applicable regulatory plans and policies to reduce GHG emissions.

Table 14 above illustrates that implementation of the project's regulatory requirements, including state mandates, would contribute to GHG reductions. Further, as discussed in the Consistency With Applicable GHG Reduction Plans and Policies section above, with the garnering of 100 points on the County's CAP checklist, the project would be consistent with the goals and objectives of the County of Riverside CAP Update.

Thus, given the project's consistency with the County of Riverside CAP Update emission reduction goals, the project's incremental contribution to GHG emissions and their effects on climate change would not be cumulatively considerable.

[30] Source: California Air Pollution Control Officers Association, CEQA & Climate change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, (2008).

[31] The State CEQA Guidelines were amended in response to SB 97. In particular, the State CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction program renders a cumulative impact insignificant. Per State CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project will comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, [and] plans or regulations for the reduction of greenhouse gas emissions."

4. ENERGY ANALYSIS

EXISTING CONDITIONS

This section provides an overview of the existing energy conditions in the project area and region.

Overview

California's estimated annual energy use as of 2018 included:

- Approximately 194,842 gigawatt hours of electricity;[32]
- Approximately 2,110,829 million cubic feet of natural gas per year[33]; and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015)[34]

As of 2016, the year of most recent data currently available by the United States Energy Information Administration (EIA), energy use in California by demand sector was:

- Approximately 39.8 percent transportation;
- Approximately 23.7 percent industrial;
- Approximately 17.7 percent residential; and
- Approximately 18.9 percent commercial.[35]

California's electricity in-state generation system generates approximately 194,842 gigawatt-hours each year. In 2018, California produced approximately 68 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 14 percent) and the U.S. Southwest (approximately 18 percent). Natural gas is the main source for electricity generation at approximately 46.54 percent of the total in-state electric generation system power as shown in Table 15.

A summary of and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below:

- Excluding federal offshore areas, California was the fourth-largest producer of crude oil among the 50 states in 2017, after Texas, North Dakota, and Alaska, and, as of January 2018, third in oil refining capacity after Texas and Louisiana.
- In 2016, California accounted for one-fifth of the nation's jet fuel consumption.
- California's total energy consumption is the second-highest in the nation, but, in 2016, the State's per capita energy consumption ranked 48th, due in part to its mild climate and its energy efficiency programs.
- In 2017, California ranked second in the nation in conventional hydroelectric generation and first as a producer of electricity from solar, geothermal, and biomass resources.
- In 2017, solar PV and solar thermal installations provided about 16 percent of California's net electricity generation[36].

[32] California Energy Commission. Energy Almanac. Total Electric Generation. [Online] June 24, 2019. http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html.
[33] Natural Gas Consumption by End Use . U.S. Energy Information Administration. [Online] March 29, 2019. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.
[34] California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] April 19, 2018. https://www.energy.ca.gov/assessments/
[35] U.S. Energy Information Administration. California Energy Consumption by End-Use Sector. California State Profile and Energy Estimates.[Online] November 15, 2018 https://www.eia.gov/state/?sid=CA#tabs-2
[36] State Profile and Energy Estimates. Independent Statistics and Analysis. [Online] [Cited: November 15, 2018.] http://www.eia.gov/state/?sid=CA#tabs2.

As indicated above, California is one of the nation's leading energy-producing states, and California per capita energy use is among the nation's most efficient. Given the nature of the proposed project, the remainder of this discussion will focus on the three sources of energy that are most relevant to the project—namely, electricity and natural gas, and transportation fuel for vehicle trips associated with the proposed project.

Electricity

Electricity would be provided to the project by Southern California Edison (SCE). SCE provides electric power to more than 15 million persons, within a service area encompassing approximately 50,000 square miles.[37] SCE derives electricity from varied energy resources including: fossil fuels, hydroelectric generators, nuclear power plants, geothermal power plants, solar power generation, and wind farms. SCE also purchases from independent power producers and utilities, including out-of-state suppliers.[38]

Table 16 identifies SCE's specific proportional shares of electricity sources in 2018. As shown in Table 16, the 2018 SCE Power Mix has renewable energy at 36 percent of the overall energy resources, of which biomass and waste is at 1 percent, geothermal is at 8 percent, eligible hydroelectric is at 1 percent, solar energy is at 13 percent, and wind power is at 13percent; other energy sources include large hydroelectric at 4 percent, natural gas at 17 percent, nuclear at 6 percent and unspecified sources at 37 percent.

Natural Gas

Natural gas would be provided to the project by Southern California Gas (SoCalGas). The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

The CPUC regulates natural gas utility service for approximately 10.8 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers, who accounted for approximately 32 percent of the natural gas delivered by California utilities in 2012. Large consumers, like electric generators and industrial customers, referred to as "noncore" customers, accounted for approximately 68 percent of the natural gas delivered by California utilities in 2012.

The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing.

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2012, California customers received 35 percent of their natural gas supply from basins located in the Southwest, 16 percent from Canada, 40 percent from the Rocky Mountains, and 9 percent from basins located within California. California gas utilities may soon also begin receiving biogas into their pipeline systems."[39]

[37] https://www.sce.com/about-us/who-we-are/leadership/our-service-territory

[38] California Energy Commission. Utility Energy Supply plans from 2015. https://www.energy.ca.gov/almanac/electricity_data/supply_forms.html

[39] California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/

Transportation Energy Resources

The project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. Gasoline (and other vehicle fuels) are commercially-provided commodities and would be available to the project patrons and employees via commercial outlets.

The most recent data available (2016) shows the transportation sector emits 41 percent of the total GHGs in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).[40,41] Petroleum comprises about 92 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.[42]

REGULATORY BACKGROUND

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the USEPA are three federal agencies with substantial influence over energy policies and programs. On the state level, the PUC and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below.

Federal Regulations

Corporate Average Fuel Economy (CAFE) Standards

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and USEPA jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[43]

Intermodal Surface transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values guiding transportation decisions.

The Transportation Equity Act of the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance

[40] CARB. California Greenhouse Gas Emissions Inventory – 2018 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm

[41] CARB. 2016 SIP Emission Projection Data. https://www.arb.ca.gov/app/emsinv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA

[42] US Energy Information Administration. Use of Energy in the United States Explained: Energy Use for Transportation. https://www.eia.gov/energyexplained/?page=us_energy_transportation

[43] https://www.nhtsa.gov/lawsregulations/corporate-average-fuel-economy.

of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

State Regulations

Integrated Energy Policy Report (IEPR)

Senate Bill 1389 requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. The Energy Commission prepares these assessments and associated policy recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The recently-approved 2017 Integrated Energy Policy Report Updated (2017 IEPR) was published in April 2018, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2016 IEPR focuses on a variety of topics such as implementation of Senate Bill 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency.[44]

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

California Building Standards Code (Title 24)

The California Building Standards Code Title 24 was previously discussed in Section 3 of this report.

California Building Energy Efficiency Standards (Title 24, Part 6)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2019 Title 24 standards, which became effective on January 1, 2020. The 2019 Title 24 standards include efficiency improvements to the lighting and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers. For example, window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide

[44] California Energy Commission. Final 2017 Integrated Energy Policy Report. April 16, 2018. https://www.energy.ca.gov/2017_energypolicy/

ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1. Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regard to sunlight provided through skylights and overhangs.

All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

California Building Energy Efficiency Standards (Title 24, Part 11)

The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2020. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

As previously discussed in Section 3 of this report, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regard to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regard to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 350

As previously discussed in Section 3 of this report, Senate Bill 350 (SB 350) was signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the GHG emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce GHG emissions and ramp up the deployment of clean energy resources.

Assembly Bill 32

As discussed in Section 3 of this report, in 2006 the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective. Please see Section 4 for further detail on AB 32.

Assembly Bill 1493/Pavley Regulations

As discussed Section 3 of this report, California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the

"waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

Executive Order S-1-07/Low Carbon Fuel Standard

As discussed Section 3 of this report, Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

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

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

California Air Resources Board

CARB's Advanced Clean Cars Program

Closely associated with the Pavley regulations, the Advanced Clean Cars emissions control program was approved by CARB in 2012. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles for model years 2015–2025.15 The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[45]

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13, California Code of Regulations, Division 3, Chapter 10, Section 2435) was adopted to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. This section applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. Reducing idling of diesel-fueled commercial motor vehicles reduces the amount of petroleum-based fuel used by the vehicle.

[45] California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, form In-Use Heavy-Duty Diesel-Fueled Vehicles

The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles (Title 13, California Code of Regulations, Division 3, Chapter 1, Section 2025) was adopted to reduce emissions of diesel particulate matter, oxides of nitrogen (NOX) and other criteria pollutants from in-use diesel-fueled vehicles. This regulation is phased, with full implementation by 2023. The regulation aims to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. The newer emission controlled models would use petroleum-based fuel in a more efficient manner.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or Senate Bill 375 (SB 375), coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates established in AB 32.

As previously stated in Section 3 of this report, Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the SCAG jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

Evaluation Criteria

In compliance with Appendix G of the State CEQA Guidelines, this report analyzes the project's anticipated energy use to determine if the project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

In addition, Appendix F of the State CEQA Guidelines states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Methodology

Information from the CalEEMod 2016.3.2 Daily and Annual Outputs contained in Appendix B and C, utilized for air quality and GHG analyses in Sections 2 and 3 of this report, were also utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

Construction Energy Demands

The construction schedule is anticipated to occur no sooner than the beginning of September 2020 and the end of March 2021 and be completed in one phase. Even if construction was to occur any time after the respective dates, the analysis represents "worst-case" since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.[46] Staging of construction vehicles and equipment will occur on-site. The approximately seven-month schedule is relatively short and the project site is approximately 2.935 acres.

Construction Equipment Electricity Usage Estimates

As stated previously, Electrical service will be provided by Southern California Edison. The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the proposed project. Based on the 2017 National Construction Estimator, Richard Pray (2017)[47], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.32. The project plans to develop the site with 2,627 square feet of coffee shop with drive-thru and a 16 fueling position super convenience market/gas station use. Based on Table 17, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $164.46.

Construction Equipment Fuel Estimates

Fuel consumed by construction equipment would be the primary energy resource expended over the course of project construction. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of 7 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~6-7 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/day (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region.
- Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input for the air quality and GHG analyses (Sections 2 and 3 of this report), the project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2014 Emissions Factors Tables show that on

[46] As shown in the California Emissions Estimator Model (CalEEMod) User's Guide Version 2016.3.2, Section 4.3 "OFFROAD Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements. The conditions have not changed since October 2020.

[47] Pray, Richard. 2017 National Construction Estimator. Carlsbad : Craftsman Book Company, 2017.

average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. Table 18 shows the results of the analysis of construction equipment.

As presented in Table 18, project construction activities would consume an estimated 20,541 gallons of diesel fuel. As stated previously, project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

Construction Worker Fuel Estimates

It is assumed that all construction worker trips are from light duty autos (LDA) along area roadways. With respect to estimated VMT, the construction worker trips would generate an estimated 113,778 VMT. Data regarding project related construction worker trips were based on CalEEMod 2016.3.2 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality and GHG analyses (Sections 2 and 3 of this report) using information generated using CARB's 2017 EMFAC model (see Appendix C for details). An aggregate fuel efficiency of 29.4 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 19 shows that an estimated 3,870 gallons of fuel would be consumed for construction worker trips.

Construction Vendor/Hauling Fuel Estimates

Tables 20 and 21 show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 20,286 VMT. Data regarding project related construction worker trips were based on CalEEMod 2016.3.2 model defaults.

For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles. Therefore, vendors delivering construction material or hauling debris from the site would use medium to heavy duty vehicles with an average fuel consumption of 8.7 mpg for medium heavy duty trucks and 6.38 for heavy heavy duty trucks (see Appendix C for details). Tables 20 and 21 show that an estimated 2,324 gallons of fuel would be consumed for vendor and/or hauling trips (as applicable).

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately seven-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

The project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other TACs. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption.

Additionally, as required by California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment.

Enforcement of idling limitations is realized through periodic site inspections conducted by County building officials, and/or in response to citizen complaints.

Operational Energy Demands

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

Transportation Fuel Consumption

Using the CalEEMod output from the air quality and GHG analyses (Sections 2 and 3 of this report), it is assumed that an average trip for autos and light trucks was assumed to be 16.6 miles and 3- 4-axle trucks were assumed to travel an average of 6.9 miles.[48] As the project includes the development of the site with a drive-through coffee shop, carwash, and gas station, which are all frequently utilized on weekends, and in order to present a worst-case scenario, it was assumed that vehicles would operate 365 days per year.. Table 22 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.[49]

The proposed project would generate 5,185 trips per day. The vehicle fleet mix was used from the CalEEMod output. Table 22 shows that an estimated 1,433,880 gallons of fuel would be consumed per year for the operation of the proposed project.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by Southern California Edison) and natural gas (provided by Southern California Gas Company). The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and GHG analyses (Sections 2 and 3 of this report) and are provided in Table 23.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.).

RENEWABLE ENERGY AND ENERGY EFFICIENCY PLAN CONSISTENCY

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by Southern California Edison and Southern California Gas Company.

[48] CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 16.6 miles; 6.9 miles for H-O (home-other) or C-O (commercial-other).

[49] Average fuel economy based on aggregate mileage calculated in EMFAC 2017 for opening year (2022). See Appendix C for EMFAC output.

Regarding Pavley (AB 1493) regulations, an individual project does not have the ability to comply or conflict with these regulations because they are intended for agencies and their adoption of procedures and protocols for reporting and certifying GHG emission reductions from mobile sources.

Regarding the State's Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CalGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

The County of Riverside's CAP Update includes GHG reduction measures that focus on different sectors including transportation, energy efficiency, clean energy, water efficiency, advanced measures, and solid waste. The County's CAP states that project's that do not exceed the CAP's screening threshold of 3,000 MTCO2e per year are considered to have less than significant GHG emissions and are in compliance with the County's CAP Update; however, projects that exceed emissions of 3,000 MTCO2e per year are required to garner at least 100 points from Screening Tables in order to be consistent with the reduction quantities anticipated in the County's CAP Update. As shown in Section 3 above, with the garnering of 100 points on the County's checklist, the proposed project would be consistent with the applicable strategies of the County of Riverside CAP Update. Therefore, the project would be anticipated to be consistent with the energy reducing measures identified in the CAP.

CONCLUSIONS

As supported by the preceding analyses, project construction and operations would not result in the inefficient, wasteful or unnecessary consumption of energy. Further, the energy demands of the project can be accommodated within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the State of California. Notwithstanding, the project proposes commercial uses and will not have any long-term effects on an energy provider's future energy development or future energy conservation strategies.

Table 15
Total Electricity System Power (California 2018)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	California Power Mix (GWh)	Percent California Power Mix
Coal	294	0.15%	399	8,740	9,433	3.30%
Large Hydro	22,096	11.34%	7,418	985	30,499	10.68%
Natural Gas	90,691	46.54%	49	8,904	99,644	34.91%
Nuclear	18,268	9.38%	0	7,573	25,841	9.05%
Oil	35	0.02%	0	0	35	0.01%
Other (Petroleum Coke/Waste Heat)	430	0.22%	0	9	439	0.15%
Renewables	63,028	32.35%	14,074	12,400	89,502	31.36%
Biomass	5,909	3.03%	772	26	6,707	2.35%
Geothermal	11,528	5.92%	171	1269	12,968	4.54%
Small Hydro	4,248	2.18%	334	1	4,583	1.61%
Solar	27,265	13.99%	174	5,094	32,533	11.40%
Wind	14,078	7.23%	12,623	6,010	32,711	11.46%
Unspecified Sources of Power	N/A	N/A	17,576	12,519	30,095	10.54%
Total	194,842	100.00%	39,517	51,130	285,488	100.00%

Notes:

(1) Source: California Energy Commission. Total System electric Generation, June 24, 2019. https://www.energy.ca.gov/almanac/electricity_data/total_system_power.html

Table 16
SCE 2018 Power Content Mix

Energy Resources	2018 SCE Power Mix
Eligible Renewable	36%
Biomass & Waste	1%
Geothermal	8%
Eligible Hydroelectric	1%
Solar	13%
Wind	13%
Coal	0%
Large Hydroelectric	4%
Natural Gas	17%
Nuclear	6%
Other	0%
Unspecified Sources of power*	37%
Total	100%

Notes:

(1) https://www.sce.com/sites/default/files/inline-files/2018SCEPCL.pdf

* Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.

Table 17
Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot)	Construction Duration (months)	Total Project Construction Power Cost
$2.32	10.127	7	$164.46

Table 18
Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/day	Total Fuel Consumption (gal diesel fuel)[1]
Grading	6	Graders	1	8	187	0.41	613	199
	6	Rubber Tired Dozers	1	8	247	0.4	790	256
	6	Tractors/Loaders/Backhoes	2	7	97	0.37	502	163
Building Construction	140	Cranes	1	8	231	0.29	536	4,056
	140	Forklifts	3	7	89	0.2	374	2,829
	140	Generator Sets	1	8	84	0.74	497	3,763
	140	Tractors/Loaders/Backhoes	2	6	97	0.37	431	3,259
	140	Welders	4	8	46	0.45	662	5,013
Paving	10	Cement and Mortar Mixers	1	8	9	0.56	40	22
	10	Pavers	1	8	130	0.42	437	236
	10	Paving Equipment	1	8	132	0.36	380	205
	10	Rollers	2	8	80	0.38	486	263
	10	Tractors/Loaders/Backhoes	1	8	97	0.37	287	155
Architectural Coating	10	Air Compressors	1	6	78	0.48	225	121
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								20,541

Notes:

(1) Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp. (Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)

Table 19
Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	6	10	14.7	882	29.40	30
Building Construction	140	53	14.7	109,074	29.40	3,710
Paving	10	15	14.7	2,205	29.40	75
Architectural Coating	10	11	14.7	1,617	29.40	55
Total Construction Worker Fuel Consumption						3,870

Notes:

(1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Table 20
Construction Vendor Fuel Consumption Estimates (MHD Trucks)[1]

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	6	0	6.9	0	8.7	0
Building Construction	140	21	6.9	20,286	8.7	2,324
Paving	10	0	6.9	0	8.7	0
Architectural Coating	10	0	6.9	0	8.7	0
Total Construction Worker Fuel Consumption						2,324

Notes:

(1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Table 21
Construction Hauling Fuel Consumption Estimates (HHD Trucks)[1]

Phase	Number of Days	Hauling Trips	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	6	0	20	0	6.38	0
Building Construction	140	0	20	0	6.38	0
Paving	10	0	20	0	6.38	0
Architectural Coating	10	0	20	0	6.38	0
Total Construction Worker Fuel Consumption						0

Notes:

(1) Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2016.3.2 defaults.

Table 22
Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles)[1]	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	2,828	16.6	46945	30.95	1516.79	553,630
Light Truck	Automobile	191	16.6	3171	13.52	234.51	85,597
Light Truck	Automobile	965	16.6	16019	13.52	1184.84	432,466
Medium Truck	Automobile	598	6.9	4126	9.22	447.53	163,347
Light Heavy Truck	2-Axle Truck	79	6.9	545	9.22	59.12	21,579
Light Heavy Truck 10,000 lbs +	2-Axle Truck	26	6.9	179	9.22	19.46	7,102
Medium Heavy Truck	3-Axle Truck	91	6.9	628	6.69	93.86	34,258
Heavy Heavy Truck	4-Axle Truck	361	6.9	2491	6.69	372.33	135,901
Total		5,185	--	74,104	12.38	3928.44	--
Total Annual Fuel Consumption							1,433,880

Notes:

(1) Based on the size of the site and relative location, trips were assumed to be local rather than regional.

Table 23
Project Annual Operational Energy Demand Summary

Natural Gas Demand	kBTU/year[1,2]
Fast-Food Restaurant with Drive Through	657,115
Gasoline/Service Station	209,115
Total	657,115

Electricity Demand	kWh/year
Fast-Food Restaurant with Drive Through	114,973
Gasoline/Service Station	69,960
Total	184,933

Notes:

(1) Taken from the CalEEMod 2016.3.2 annual output (Appendix C of this report).

(2) "Mitigated" CalEEMod emissions.

5. EMISSIONS REDUCTION MEASURES

CONSTRUCTION MEASURES

Adherence to SCAQMD Rule 403 is required (compliance includes watering three times per day and reduced vehicle speeds on unpaved roadways).

No construction mitigation is required.

OPERATIONAL MEASURES

The measures listed below are either required through regulation (compliance with Title 24, CALGreen for example) and/or part of the project's sustainable design.

Measure 1. The project applicant shall require that all faucets, toilets and showers installed in the proposed structures utilize low-flow fixtures that would reduce indoor water demand by 20% per CALGreen Standards.

Measure 2. As a condition of approval, the project applicant shall provide sidewalks on-site and connecting off-site.

Measure 3. As a condition of approval, the project applicant shall require that ENERGY STAR-compliant appliances are installed wherever appliances are required on-site.

Measure 4. As a condition of approval, the project applicant shall require water-efficient irrigation systems be installed on-site.

Measure 5. Prior to issuance of building permits, and as a condition of approval, the applicant will demonstrate proof that the project would garner at least 100 or more points from the County of Riverside CAP Update Screening Tables.

6. REFERENCES

California Air Pollution Control Officers Association

2009 Health Risk Assessments for Proposed Land Use Projects

California Air Resources Board

2008 Resolution 08-43

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

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

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2013 Almanac of Emissions and Air Quality.
Source: https://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm

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

2017 California's 2017 Climate Change Scoping Plan. November.

2019 Historical Air Quality, Top 4 Summary

County of Riverside

2015 County of Riverside General Plan. December 8.

2019 Southwest Area Plan. Revised April 16.

2019 County of Riverside Climate Action Plan Update. November.

Ganddini Group, Inc.

2020 Winchester at Jean Nicholas Commercial Retail Center Traffic Impact Analysis. June 8.

Governor's Office of Planning and Research

2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2018 CEQA Guideline Sections to be Added or Amended

Intergovernmental Panel on Climate Change (IPCC)

2014 IPCC Fifth Assessment Report, Climate Change 2014: Synthesis Report

Office of Environmental Health Hazard Assessment

2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

South Coast Air Quality Management District

1993 CEQA Air Quality Handbook

2003 Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis

2005 Rule 403 Fugitive Dust

2007 2007 Air Quality Management Plan

2008 Final Localized Significance Threshold Methodology, Revised

2012 Final 2012 Air Quality Management Plan

2015 Final MATES-IV Multiple Air Toxics Exposure Study in the South Coast Air Basin. May.

2016 2016 Air Quality Management Plan

2018 Historical Data by Year. 2013, 2014 and 2015 Air Quality Data Tables.
Source: http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year

Southern California Association of Governments

2016 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy

U.S. Environmental Protection Agency (EPA)

2017 Understanding Global Warming Potentials
(Source: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials)

U.S. Geological Survey

2011 Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California

APPENDICES

Appendix A Glossary of Terms

Appendix B CalEEMod Model Daily Emissions Printouts

Appendix C CalEEMod Model Annual Emissions Printouts and CAP Checklist

APPENDIX A

GLOSSARY OF TERMS

AQMP	Air Quality Management Plan
BACT	Best Available Control Technologies
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
GWP	Global warming potential
HIDPM	Hazard Index Diesel Particulate Matter
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SANBAG	San Bernardino Association of Governments
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SSAB	Salton Sea Air Basin
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
TAC	Toxic air contaminants
VOC	Volatile organic compounds

APPENDIX B

CALEEMOD MODEL DAILY EMISSIONS PRINTOUTS

190221 Winchester at Jean Nicholas Commercial Retail Center

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.48	Acre	1.48	64,468.80	0
Other Non-Asphalt Surfaces	1.23	Acre	1.23	53,578.80	0
Fast Food Restaurant with Drive Thru	2.63	1000sqft	0.06	2,627.00	0
Gasoline/Service Station	16.00	Pump	0.17	7,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

190221 Winchester at Jean Nicholas Commercial Retail Center - Riverside-South Coast County, Summer

Project Characteristics -

Land Use - ~2.935 ac w/ 2,627 SF coffee-shop w/ drive-thru, 16 FP gas station w/ 5,185 SF conv market & 2,315 SF car wash, ~50% (~1.48 ac) site is paving (includes parking lot w/ 68 spcs & 2 loading spcs) & rmdr landscaping/open space/hardscape (~1.23 ac).

Construction Phase - Construction anticipated to begin no sooner than September 2020 and last ~7 months with completion in March 2021. Site is vacant, no demo.

Off-road Equipment - CalEEMod default construction duration for building cosntruction phased decreased by ~36%; therefore, 36% more equipment needed than CalEEMod default list.

Grading - Site anticipated to balance.

Vehicle Trips - Per TIA, 754.85 trips/TSF coffee-shop (w/ 49% AM & 50% PM pass-by reduction) & 200.13 trips/FP gas station (w/62% AM & 56% PM) pass-by reduction). Pass-by trips changed to zero & split between primary/diverted.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Site is ~0.45 miles north of RTA Rte 79 stop Algarve/Cloche & ~6.8 miles SW of dwntwn Winchester. Sidewalks on/off-site. Per Riv Co, 1 emp/500 SF commercial = 10,127sf/500 = ~20 emp/0.23 jb ac (jb ac = buildings only) = ~87 emp/jb ac.

Energy Mitigation - 2019 Title 24 Standards for nonresidential buildings will use about 30 percent less energy than with 2016 Title 24 standards. Energy Star Appliances used on-site.

Water Mitigation - 20% indoor water reduction per CalGreen Standards. Water-efficient irrigation systems.

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

190221 Winchester at Jean Nicholas Commercial Retail Center - Riverside-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	140.00
tblLandUse	LandUseSquareFeet	2,258.80	7,500.00
tblLandUse	LotAcreage	0.05	0.17
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblVehicleTrips	DV_TP	21.00	46.00
tblVehicleTrips	DV_TP	27.00	57.00
tblVehicleTrips	PB_TP	50.00	0.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	29.00	54.00
tblVehicleTrips	PR_TP	14.00	43.00
tblVehicleTrips	ST_TR	722.03	754.85
tblVehicleTrips	ST_TR	168.56	200.13
tblVehicleTrips	SU_TR	542.72	754.85
tblVehicleTrips	SU_TR	168.56	200.13
tblVehicleTrips	WD_TR	496.12	754.85
tblVehicleTrips	WD_TR	168.56	200.13

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.2413	24.0394	21.9390	0.0426	6.6641	1.2354	7.6550	3.3971	1.1805	4.3087	0.0000	4,013.6349	4,013.6349	0.6684	0.0000	4,030.3449
2021	15.8438	32.7648	33.6352	0.0618	0.8946	1.6392	2.5337	0.2403	1.5465	1.7868	0.0000	5,858.5838	5,858.5838	1.1922	0.0000	5,888.3888
Maximum	**15.8438**	**32.7648**	**33.6352**	**0.0618**	**6.6641**	**1.6392**	**7.6550**	**3.3971**	**1.5465**	**4.3087**	**0.0000**	**5,858.5838**	**5,858.5838**	**1.1922**	**0.0000**	**5,888.3888**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.2413	24.0394	21.9390	0.0426	2.6672	1.2354	3.6580	1.3430	1.1805	2.2545	0.0000	4,013.6349	4,013.6349	0.6684	0.0000	4,030.3449
2021	15.8438	32.7648	33.6352	0.0618	0.8946	1.6392	2.5337	0.2403	1.5465	1.7868	0.0000	5,858.5838	5,858.5838	1.1922	0.0000	5,888.3888
Maximum	**15.8438**	**32.7648**	**33.6352**	**0.0618**	**2.6672**	**1.6392**	**3.6580**	**1.3430**	**1.5465**	**2.2545**	**0.0000**	**5,858.5838**	**5,858.5838**	**1.1922**	**0.0000**	**5,888.3888**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**52.88**	**0.00**	**39.23**	**56.47**	**0.00**	**33.70**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2773	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-003
Energy	0.0284	0.2584	0.2171	1.5500e-003		0.0196	0.0196		0.0196	0.0196		310.0731	310.0731	5.9400e-003	5.6800e-003	311.9157
Mobile	8.2373	56.3669	70.5269	0.2977	20.1451	0.1907	20.3358	5.3897	0.1786	5.5683		30,458.3659	30,458.3659	1.8315		30,504.1520
Total	**8.5429**	**56.6253**	**70.7461**	**0.2993**	**20.1451**	**0.2104**	**20.3554**	**5.3897**	**0.1982**	**5.5879**		**30,768.4437**	**30,768.4437**	**1.8374**	**5.6800e-003**	**30,816.0728**

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	0.2773	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-003
Energy	0.0256	0.2327	0.1954	1.4000e-003		0.0177	0.0177		0.0177	0.0177		279.2039	279.2039	5.3500e-003	5.1200e-003	280.8631
Mobile	7.5905	50.4099	50.6507	0.2070	12.4897	0.1305	12.6201	3.3415	0.1221	3.4636		21,230.9919	21,230.9919	1.5845		21,270.6052
Total	**7.8933**	**50.6426**	**50.8483**	**0.2084**	**12.4897**	**0.1482**	**12.6378**	**3.3415**	**0.1398**	**3.4813**		**21,510.2005**	**21,510.2005**	**1.5899**	**5.1200e-003**	**21,551.4732**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**7.60**	**10.57**	**28.13**	**30.36**	**38.00**	**29.57**	**37.91**	**38.00**	**29.49**	**37.70**	**0.00**	**30.09**	**30.09**	**13.47**	**9.86**	**30.06**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	9/1/2020	9/8/2020	5	6	
2	Building Construction	Building Construction	9/9/2020	3/23/2021	5	140	
3	Paving	Paving	3/4/2021	3/17/2021	5	10	
4	Architectural Coating	Architectural Coating	3/18/2021	3/31/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.71

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 15,191; Non-Residential Outdoor: 5,064; Striped Parking Area: 7,083 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	53.00	21.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 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					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110		1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.5523**	**0.9902**	**7.5425**	**3.3675**	**0.9110**	**4.2784**		**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

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	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301
Total	**0.0509**	**0.0301**	**0.4032**	**1.1100e-003**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**110.1595**	**110.1595**	**2.8200e-003**		**110.2301**

3.2 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110	0.0000	1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**2.5554**	**0.9902**	**3.5456**	**1.3133**	**0.9110**	**2.2243**	**0.0000**	**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

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	0.0509	0.0301	0.4032	1.1100e-003	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		110.1595	110.1595	2.8200e-003		110.2301
Total	**0.0509**	**0.0301**	**0.4032**	**1.1100e-003**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**110.1595**	**110.1595**	**2.8200e-003**		**110.2301**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9131	21.7191	19.4067	0.0312		1.2195	1.2195		1.1654	1.1654		2,851.4688	2,851.4688	0.6101		2,866.7203
Total	**2.9131**	**21.7191**	**19.4067**	**0.0312**		**1.2195**	**1.2195**		**1.1654**	**1.1654**		**2,851.4688**	**2,851.4688**	**0.6101**		**2,866.7203**

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	0.0585	2.1607	0.3953	5.4900e-003	0.1345	0.0123	0.1468	0.0387	0.0118	0.0505		578.3209	578.3209	0.0434		579.4054
Worker	0.2697	0.1595	2.1370	5.8600e-003	0.5924	3.5900e-003	0.5960	0.1571	3.3000e-003	0.1604		583.8451	583.8451	0.0150		584.2192
Total	**0.3282**	**2.3202**	**2.5323**	**0.0114**	**0.7269**	**0.0159**	**0.7428**	**0.1958**	**0.0151**	**0.2109**		**1,162.1661**	**1,162.1661**	**0.0584**		**1,163.6246**

3.3 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9131	21.7191	19.4067	0.0312		1.2195	1.2195		1.1654	1.1654	0.0000	2,851.4688	2,851.4688	0.6101		2,866.7203
Total	**2.9131**	**21.7191**	**19.4067**	**0.0312**		**1.2195**	**1.2195**		**1.1654**	**1.1654**	**0.0000**	**2,851.4688**	**2,851.4688**	**0.6101**		**2,866.7203**

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	0.0585	2.1607	0.3953	5.4900e-003	0.1345	0.0123	0.1468	0.0387	0.0118	0.0505		578.3209	578.3209	0.0434		579.4054
Worker	0.2697	0.1595	2.1370	5.8600e-003	0.5924	3.5900e-003	0.5960	0.1571	3.3000e-003	0.1604		583.8451	583.8451	0.0150		584.2192
Total	**0.3282**	**2.3202**	**2.5323**	**0.0114**	**0.7269**	**0.0159**	**0.7428**	**0.1958**	**0.0151**	**0.2109**		**1,162.1661**	**1,162.1661**	**0.0584**		**1,163.6246**

3.3 Building Construction - 2021

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	2.6013	19.9900	18.9988	0.0312		1.0484	1.0484		1.0017	1.0017		2,851.6153	2,851.6153	0.5922		2,866.4207
Total	**2.6013**	**19.9900**	**18.9988**	**0.0312**		**1.0484**	**1.0484**		**1.0017**	**1.0017**		**2,851.6153**	**2,851.6153**	**0.5922**		**2,866.4207**

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	0.0490	1.9433	0.3467	5.4400e-003	0.1345	3.7000e-003	0.1382	0.0387	3.5400e-003	0.0423		573.8272	573.8272	0.0411		574.8534
Worker	0.2513	0.1432	1.9595	5.6600e-003	0.5924	3.4900e-003	0.5959	0.1571	3.2100e-003	0.1603		564.3180	564.3180	0.0135		564.6544
Total	**0.3003**	**2.0865**	**2.3062**	**0.0111**	**0.7269**	**7.1900e-003**	**0.7341**	**0.1958**	**6.7500e-003**	**0.2026**		**1,138.1451**	**1,138.1451**	**0.0545**		**1,139.5078**

3.3 Building Construction - 2021

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	2.6013	19.9900	18.9988	0.0312		1.0484	1.0484		1.0017	1.0017	0.0000	2,851.6153	2,851.6153	0.5922		2,866.4207
Total	**2.6013**	**19.9900**	**18.9988**	**0.0312**		**1.0484**	**1.0484**		**1.0017**	**1.0017**	**0.0000**	**2,851.6153**	**2,851.6153**	**0.5922**		**2,866.4207**

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	0.0490	1.9433	0.3467	5.4400e-003	0.1345	3.7000e-003	0.1382	0.0387	3.5400e-003	0.0423		573.8272	573.8272	0.0411		574.8534
Worker	0.2513	0.1432	1.9595	5.6600e-003	0.5924	3.4900e-003	0.5959	0.1571	3.2100e-003	0.1603		564.3180	564.3180	0.0135		564.6544
Total	**0.3003**	**2.0865**	**2.3062**	**0.0111**	**0.7269**	**7.1900e-003**	**0.7341**	**0.1958**	**6.7500e-003**	**0.2026**		**1,138.1451**	**1,138.1451**	**0.0545**		**1,139.5078**

3.4 Paving - 2021

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	1.0633	10.6478	11.7756	0.0178		0.5826	0.5826		0.5371	0.5371		1,709.1107	1,709.1107	0.5417		1,722.6524
Paving	0.3878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4511**	**10.6478**	**11.7756**	**0.0178**		**0.5826**	**0.5826**		**0.5371**	**0.5371**		**1,709.1107**	**1,709.1107**	**0.5417**		**1,722.6524**

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	0.0711	0.0405	0.5546	1.6000e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		159.7126	159.7126	3.8100e-003		159.8078
Total	**0.0711**	**0.0405**	**0.5546**	**1.6000e-003**	**0.1677**	**9.9000e-004**	**0.1687**	**0.0445**	**9.1000e-004**	**0.0454**		**159.7126**	**159.7126**	**3.8100e-003**		**159.8078**

3.4 Paving - 2021

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	1.0633	10.6478	11.7756	0.0178		0.5826	0.5826		0.5371	0.5371	0.0000	1,709.1107	1,709.1107	0.5417		1,722.6524
Paving	0.3878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4511**	**10.6478**	**11.7756**	**0.0178**		**0.5826**	**0.5826**		**0.5371**	**0.5371**	**0.0000**	**1,709.1107**	**1,709.1107**	**0.5417**		**1,722.6524**

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	0.0711	0.0405	0.5546	1.6000e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		159.7126	159.7126	3.8100e-003		159.8078
Total	**0.0711**	**0.0405**	**0.5546**	**1.6000e-003**	**0.1677**	**9.9000e-004**	**0.1687**	**0.0445**	**9.1000e-004**	**0.0454**		**159.7126**	**159.7126**	**3.8100e-003**		**159.8078**

3.5 Architectural Coating - 2021

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	12.6712					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**12.8901**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.0522	0.0297	0.4067	1.1800e-003	0.1230	7.2000e-004	0.1237	0.0326	6.7000e-004	0.0333		117.1226	117.1226	2.7900e-003		117.1924
Total	**0.0522**	**0.0297**	**0.4067**	**1.1800e-003**	**0.1230**	**7.2000e-004**	**0.1237**	**0.0326**	**6.7000e-004**	**0.0333**		**117.1226**	**117.1226**	**2.7900e-003**		**117.1924**

3.5 Architectural Coating - 2021

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	12.6712					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**12.8901**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.0522	0.0297	0.4067	1.1800e-003	0.1230	7.2000e-004	0.1237	0.0326	6.7000e-004	0.0333		117.1226	117.1226	2.7900e-003		117.1924
Total	**0.0522**	**0.0297**	**0.4067**	**1.1800e-003**	**0.1230**	**7.2000e-004**	**0.1237**	**0.0326**	**6.7000e-004**	**0.0333**		**117.1226**	**117.1226**	**2.7900e-003**		**117.1924**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.5905	50.4099	50.6507	0.2070	12.4897	0.1305	12.6201	3.3415	0.1221	3.4636		21,230.9919	21,230.9919	1.5845		21,270.6052
Unmitigated	8.2373	56.3669	70.5269	0.2977	20.1451	0.1907	20.3358	5.3897	0.1786	5.5683		30,458.3659	30,458.3659	1.8315		30,504.1520

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	1,982.99	1,982.99	1982.99	3,921,938	2,431,547
Gasoline/Service Station	3,202.08	3,202.08	3202.08	5,524,423	3,425,066
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5,185.07	5,185.07	5,185.07	9,446,361	5,856,613

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive	16.60	8.40	6.90	2.20	78.80	19.00	54	46	0
Gasoline/Service Station	16.60	8.40	6.90	2.00	79.00	19.00	43	57	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Gasoline/Service Station	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Non-Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0256	0.2327	0.1954	1.4000e-003		0.0177	0.0177		0.0177	0.0177		279.2039	279.2039	5.3500e-003	5.1200e-003	280.8631
NaturalGas Unmitigated	0.0284	0.2584	0.2171	1.5500e-003		0.0196	0.0196		0.0196	0.0196		310.0731	310.0731	5.9400e-003	5.6800e-003	311.9157

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	1968.02	0.0212	0.1929	0.1621	1.1600e-003		0.0147	0.0147		0.0147	0.0147		231.5316	231.5316	4.4400e-003	4.2400e-003	232.9075
Gasoline/Service Station	667.603	7.2000e-003	0.0655	0.0550	3.9000e-004		4.9700e-003	4.9700e-003		4.9700e-003	4.9700e-003		78.5415	78.5415	1.5100e-003	1.4400e-003	79.0082
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0284**	**0.2584**	**0.2171**	**1.5500e-003**		**0.0196**	**0.0196**		**0.0196**	**0.0196**		**310.0731**	**310.0731**	**5.9500e-003**	**5.6800e-003**	**311.9157**

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	1.80032	0.0194	0.1765	0.1483	1.0600e-003		0.0134	0.0134		0.0134	0.0134		211.8018	211.8018	4.0600e-003	3.8800e-003	213.0605
Gasoline/Service Station	0.572918	6.1800e-003	0.0562	0.0472	3.4000e-004		4.2700e-003	4.2700e-003		4.2700e-003	4.2700e-003		67.4021	67.4021	1.2900e-003	1.2400e-003	67.8026
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0256**	**0.2327**	**0.1954**	**1.4000e-003**		**0.0177**	**0.0177**		**0.0177**	**0.0177**		**279.2039**	**279.2039**	**5.3500e-003**	**5.1200e-003**	**280.8631**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2773	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-003
Unmitigated	0.2773	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-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	lb/day										lb/day					
Architectural Coating	0.0347					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2423					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-003
Total	**0.2773**	**2.0000e-005**	**2.1800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.6700e-003**	**4.6700e-003**	**1.0000e-005**		**4.9800e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0347					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2423					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-003
Total	**0.2773**	**2.0000e-005**	**2.1800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.6700e-003**	**4.6700e-003**	**1.0000e-005**		**4.9800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

190221 Winchester at Jean Nicholas Commercial Retail Center

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.48	Acre	1.48	64,468.80	0
Other Non-Asphalt Surfaces	1.23	Acre	1.23	53,578.80	0
Fast Food Restaurant with Drive Thru	2.63	1000sqft	0.06	2,627.00	0
Gasoline/Service Station	16.00	Pump	0.17	7,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

190221 Winchester at Jean Nicholas Commercial Retail Center - Riverside-South Coast County, Winter

Project Characteristics -

Land Use - ~2.935 ac w/ 2,627 SF coffee-shop w/ drive-thru, 16 FP gas station w/ 5,185 SF conv market & 2,315 SF car wash, ~50% (~1.48 ac) site is paving (includes parking lot w/ 68 spcs & 2 loading spcs) & rmdr landscaping/open space/hardscape (~1.23 ac).

Construction Phase - Construction anticipated to begin no sooner than September 2020 and last ~7 months with completion in March 2021. Site is vacant, no demo.

Off-road Equipment - CalEEMod default construction duration for building cosntruction phased decreased by ~36%; therefore, 36% more equipment needed than CalEEMod default list.

Grading - Site anticipated to balance.

Vehicle Trips - Per TIA, 754.85 trips/TSF coffee-shop (w/ 49% AM & 50% PM pass-by reduction) & 200.13 trips/FP gas station (w/62% AM & 56% PM) pass-by reduction). Pass-by trips changed to zero & split between primary/diverted.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Site is ~0.45 miles north of RTA Rte 79 stop Algarve/Cloche & ~6.8 miles SW of dwntwn Winchester. Sidewalks on/off-site. Per Riv Co, 1 emp/500 SF commercial = 10,127sf/500 = ~20 emp/0.23 jb ac (jb ac = buildings only) = ~87 emp/jb ac.

Energy Mitigation - 2019 Title 24 Standards for nonresidential buildings will use about 30 percent less energy than with 2016 Title 24 standards. Energy Star Appliances used on-site.

Water Mitigation - 20% indoor water reduction per CalGreen Standards. Water-efficient irrigation systems.

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

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	140.00
tblLandUse	LandUseSquareFeet	2,258.80	7,500.00
tblLandUse	LotAcreage	0.05	0.17
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblVehicleTrips	DV_TP	21.00	46.00
tblVehicleTrips	DV_TP	27.00	57.00
tblVehicleTrips	PB_TP	50.00	0.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	29.00	54.00
tblVehicleTrips	PR_TP	14.00	43.00
tblVehicleTrips	ST_TR	722.03	754.85
tblVehicleTrips	ST_TR	168.56	200.13
tblVehicleTrips	SU_TR	542.72	754.85
tblVehicleTrips	SU_TR	168.56	200.13
tblVehicleTrips	WD_TR	496.12	754.85
tblVehicleTrips	WD_TR	168.56	200.13

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.2390	24.0335	21.5983	0.0418	6.6641	1.2355	7.6550	3.3971	1.1806	4.3087	0.0000	3,931.8236	3,931.8236	0.6713	0.0000	3,948.6071
2021	15.8412	32.7543	33.2139	0.0608	0.8946	1.6393	2.5339	0.2403	1.5466	1.7869	0.0000	5,762.5014	5,762.5014	1.1946	0.0000	5,792.3673
Maximum	**15.8412**	**32.7543**	**33.2139**	**0.0608**	**6.6641**	**1.6393**	**7.6550**	**3.3971**	**1.5466**	**4.3087**	**0.0000**	**5,762.5014**	**5,762.5014**	**1.1946**	**0.0000**	**5,792.3673**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.2390	24.0335	21.5983	0.0418	2.6672	1.2355	3.6580	1.3430	1.1806	2.2545	0.0000	3,931.8236	3,931.8236	0.6713	0.0000	3,948.6071
2021	15.8412	32.7543	33.2139	0.0608	0.8946	1.6393	2.5339	0.2403	1.5466	1.7869	0.0000	5,762.5014	5,762.5014	1.1946	0.0000	5,792.3672
Maximum	**15.8412**	**32.7543**	**33.2139**	**0.0608**	**2.6672**	**1.6393**	**3.6580**	**1.3430**	**1.5466**	**2.2545**	**0.0000**	**5,762.5014**	**5,762.5014**	**1.1946**	**0.0000**	**5,792.3672**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**52.88**	**0.00**	**39.23**	**56.47**	**0.00**	**33.70**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2773	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-003
Energy	0.0284	0.2584	0.2171	1.5500e-003		0.0196	0.0196		0.0196	0.0196		310.0731	310.0731	5.9400e-003	5.6800e-003	311.9157
Mobile	6.8606	55.6692	63.9416	0.2736	20.1451	0.1940	20.3390	5.3897	0.1817	5.5714		28,021.9645	28,021.9645	1.9500		28,070.7152
Total	**7.1662**	**55.9276**	**64.1609**	**0.2752**	**20.1451**	**0.2136**	**20.3587**	**5.3897**	**0.2014**	**5.5911**		**28,332.0423**	**28,332.0423**	**1.9560**	**5.6800e-003**	**28,382.6359**

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	0.2773	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-003
Energy	0.0256	0.2327	0.1954	1.4000e-003		0.0177	0.0177		0.0177	0.0177		279.2039	279.2039	5.3500e-003	5.1200e-003	280.8631
Mobile	6.2560	49.4181	48.0646	0.1895	12.4897	0.1337	12.6234	3.3415	0.1252	3.4667		19,443.9779	19,443.9779	1.7205		19,486.9901
Total	**6.5588**	**49.6508**	**48.2622**	**0.1909**	**12.4897**	**0.1514**	**12.6411**	**3.3415**	**0.1429**	**3.4844**		**19,723.1865**	**19,723.1865**	**1.7259**	**5.1200e-003**	**19,767.8582**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**8.48**	**11.22**	**24.78**	**30.63**	**38.00**	**29.12**	**37.91**	**38.00**	**29.04**	**37.68**	**0.00**	**30.39**	**30.39**	**11.77**	**9.86**	**30.35**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	9/1/2020	9/8/2020	5	6	
2	Building Construction	Building Construction	9/9/2020	3/23/2021	5	140	
3	Paving	Paving	3/4/2021	3/17/2021	5	10	
4	Architectural Coating	Architectural Coating	3/18/2021	3/31/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.71

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 15,191; Non-Residential Outdoor: 5,064; Striped Parking Area: 7,083 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	53.00	21.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 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					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110		1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.5523**	**0.9902**	**7.5425**	**3.3675**	**0.9110**	**4.2784**		**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

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	0.0498	0.0311	0.3262	9.9000e-004	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		98.8236	98.8236	2.4500e-003		98.8849
Total	**0.0498**	**0.0311**	**0.3262**	**9.9000e-004**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**98.8236**	**98.8236**	**2.4500e-003**		**98.8849**

3.2 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110	0.0000	1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**2.5554**	**0.9902**	**3.5456**	**1.3133**	**0.9110**	**2.2243**	**0.0000**	**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

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	0.0498	0.0311	0.3262	9.9000e-004	0.1118	6.8000e-004	0.1125	0.0296	6.2000e-004	0.0303		98.8236	98.8236	2.4500e-003		98.8849
Total	**0.0498**	**0.0311**	**0.3262**	**9.9000e-004**	**0.1118**	**6.8000e-004**	**0.1125**	**0.0296**	**6.2000e-004**	**0.0303**		**98.8236**	**98.8236**	**2.4500e-003**		**98.8849**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9131	21.7191	19.4067	0.0312		1.2195	1.2195		1.1654	1.1654		2,851.4688	2,851.4688	0.6101		2,866.7203
Total	**2.9131**	**21.7191**	**19.4067**	**0.0312**		**1.2195**	**1.2195**		**1.1654**	**1.1654**		**2,851.4688**	**2,851.4688**	**0.6101**		**2,866.7203**

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	0.0617	2.1494	0.4628	5.2800e-003	0.1345	0.0124	0.1469	0.0387	0.0119	0.0506		556.5898	556.5898	0.0483		557.7965
Worker	0.2641	0.1650	1.7287	5.2600e-003	0.5924	3.5900e-003	0.5960	0.1571	3.3000e-003	0.1604		523.7650	523.7650	0.0130		524.0902
Total	**0.3259**	**2.3144**	**2.1916**	**0.0105**	**0.7269**	**0.0160**	**0.7429**	**0.1958**	**0.0152**	**0.2110**		**1,080.3548**	**1,080.3548**	**0.0613**		**1,081.8867**

3.3 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9131	21.7191	19.4067	0.0312		1.2195	1.2195		1.1654	1.1654	0.0000	2,851.4688	2,851.4688	0.6101		2,866.7203
Total	**2.9131**	**21.7191**	**19.4067**	**0.0312**		**1.2195**	**1.2195**		**1.1654**	**1.1654**	**0.0000**	**2,851.4688**	**2,851.4688**	**0.6101**		**2,866.7203**

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	0.0617	2.1494	0.4628	5.2800e-003	0.1345	0.0124	0.1469	0.0387	0.0119	0.0506		556.5898	556.5898	0.0483		557.7965
Worker	0.2641	0.1650	1.7287	5.2600e-003	0.5924	3.5900e-003	0.5960	0.1571	3.3000e-003	0.1604		523.7650	523.7650	0.0130		524.0902
Total	**0.3259**	**2.3144**	**2.1916**	**0.0105**	**0.7269**	**0.0160**	**0.7429**	**0.1958**	**0.0152**	**0.2110**		**1,080.3548**	**1,080.3548**	**0.0613**		**1,081.8867**

3.3 Building Construction - 2021

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	2.6013	19.9900	18.9988	0.0312		1.0484	1.0484		1.0017	1.0017		2,851.6153	2,851.6153	0.5922		2,866.4207
Total	**2.6013**	**19.9900**	**18.9988**	**0.0312**		**1.0484**	**1.0484**		**1.0017**	**1.0017**		**2,851.6153**	**2,851.6153**	**0.5922**		**2,866.4207**

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	0.0521	1.9266	0.4102	5.2400e-003	0.1345	3.8100e-003	0.1383	0.0387	3.6400e-003	0.0424		552.2438	552.2438	0.0457		553.3873
Worker	0.2466	0.1480	1.5817	5.0800e-003	0.5924	3.4900e-003	0.5959	0.1571	3.2100e-003	0.1603		506.2526	506.2526	0.0117		506.5450
Total	**0.2987**	**2.0746**	**1.9918**	**0.0103**	**0.7269**	**7.3000e-003**	**0.7342**	**0.1958**	**6.8500e-003**	**0.2027**		**1,058.4963**	**1,058.4963**	**0.0574**		**1,059.9324**

3.3 Building Construction - 2021

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	2.6013	19.9900	18.9988	0.0312		1.0484	1.0484		1.0017	1.0017	0.0000	2,851.6153	2,851.6153	0.5922		2,866.4207
Total	**2.6013**	**19.9900**	**18.9988**	**0.0312**		**1.0484**	**1.0484**		**1.0017**	**1.0017**	**0.0000**	**2,851.6153**	**2,851.6153**	**0.5922**		**2,866.4207**

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	0.0521	1.9266	0.4102	5.2400e-003	0.1345	3.8100e-003	0.1383	0.0387	3.6400e-003	0.0424		552.2438	552.2438	0.0457		553.3873
Worker	0.2466	0.1480	1.5817	5.0800e-003	0.5924	3.4900e-003	0.5959	0.1571	3.2100e-003	0.1603		506.2526	506.2526	0.0117		506.5450
Total	**0.2987**	**2.0746**	**1.9918**	**0.0103**	**0.7269**	**7.3000e-003**	**0.7342**	**0.1958**	**6.8500e-003**	**0.2027**		**1,058.4963**	**1,058.4963**	**0.0574**		**1,059.9324**

3.4 Paving - 2021

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	1.0633	10.6478	11.7756	0.0178		0.5826	0.5826		0.5371	0.5371		1,709.1107	1,709.1107	0.5417		1,722.6524
Paving	0.3878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4511**	**10.6478**	**11.7756**	**0.0178**		**0.5826**	**0.5826**		**0.5371**	**0.5371**		**1,709.1107**	**1,709.1107**	**0.5417**		**1,722.6524**

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	0.0698	0.0419	0.4476	1.4400e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		143.2790	143.2790	3.3100e-003		143.3618
Total	**0.0698**	**0.0419**	**0.4476**	**1.4400e-003**	**0.1677**	**9.9000e-004**	**0.1687**	**0.0445**	**9.1000e-004**	**0.0454**		**143.2790**	**143.2790**	**3.3100e-003**		**143.3618**

3.4 Paving - 2021

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	1.0633	10.6478	11.7756	0.0178		0.5826	0.5826		0.5371	0.5371	0.0000	1,709.1107	1,709.1107	0.5417		1,722.6524
Paving	0.3878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4511**	**10.6478**	**11.7756**	**0.0178**		**0.5826**	**0.5826**		**0.5371**	**0.5371**	**0.0000**	**1,709.1107**	**1,709.1107**	**0.5417**		**1,722.6524**

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	0.0698	0.0419	0.4476	1.4400e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		143.2790	143.2790	3.3100e-003		143.3618
Total	**0.0698**	**0.0419**	**0.4476**	**1.4400e-003**	**0.1677**	**9.9000e-004**	**0.1687**	**0.0445**	**9.1000e-004**	**0.0454**		**143.2790**	**143.2790**	**3.3100e-003**		**143.3618**

3.5 Architectural Coating - 2021

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	12.6712					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**12.8901**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0512	0.0307	0.3283	1.0500e-003	0.1230	7.2000e-004	0.1237	0.0326	6.7000e-004	0.0333		105.0713	105.0713	2.4300e-003		105.1320
Total	**0.0512**	**0.0307**	**0.3283**	**1.0500e-003**	**0.1230**	**7.2000e-004**	**0.1237**	**0.0326**	**6.7000e-004**	**0.0333**		**105.0713**	**105.0713**	**2.4300e-003**		**105.1320**

3.5 Architectural Coating - 2021

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	12.6712					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**12.8901**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0512	0.0307	0.3283	1.0500e-003	0.1230	7.2000e-004	0.1237	0.0326	6.7000e-004	0.0333		105.0713	105.0713	2.4300e-003		105.1320
Total	**0.0512**	**0.0307**	**0.3283**	**1.0500e-003**	**0.1230**	**7.2000e-004**	**0.1237**	**0.0326**	**6.7000e-004**	**0.0333**		**105.0713**	**105.0713**	**2.4300e-003**		**105.1320**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.2560	49.4181	48.0646	0.1895	12.4897	0.1337	12.6234	3.3415	0.1252	3.4667		19,443.9779	19,443.9779	1.7205		19,486.9901
Unmitigated	6.8606	55.6692	63.9416	0.2736	20.1451	0.1940	20.3390	5.3897	0.1817	5.5714		28,021.9645	28,021.9645	1.9500		28,070.7152

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	1,982.99	1,982.99	1982.99	3,921,938	2,431,547
Gasoline/Service Station	3,202.08	3,202.08	3202.08	5,524,423	3,425,066
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5,185.07	5,185.07	5,185.07	9,446,361	5,856,613

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive	16.60	8.40	6.90	2.20	78.80	19.00	54	46	0
Gasoline/Service Station	16.60	8.40	6.90	2.00	79.00	19.00	43	57	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Gasoline/Service Station	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Non-Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0256	0.2327	0.1954	1.4000e-003		0.0177	0.0177		0.0177	0.0177		279.2039	279.2039	5.3500e-003	5.1200e-003	280.8631
NaturalGas Unmitigated	0.0284	0.2584	0.2171	1.5500e-003		0.0196	0.0196		0.0196	0.0196		310.0731	310.0731	5.9400e-003	5.6800e-003	311.9157

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	1968.02	0.0212	0.1929	0.1621	1.1600e-003		0.0147	0.0147		0.0147	0.0147		231.5316	231.5316	4.4400e-003	4.2400e-003	232.9075
Gasoline/Service Station	667.603	7.2000e-003	0.0655	0.0550	3.9000e-004		4.9700e-003	4.9700e-003		4.9700e-003	4.9700e-003		78.5415	78.5415	1.5100e-003	1.4400e-003	79.0082
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0284**	**0.2584**	**0.2171**	**1.5500e-003**		**0.0196**	**0.0196**		**0.0196**	**0.0196**		**310.0731**	**310.0731**	**5.9500e-003**	**5.6800e-003**	**311.9157**

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	1.80032	0.0194	0.1765	0.1483	1.0600e-003		0.0134	0.0134		0.0134	0.0134		211.8018	211.8018	4.0600e-003	3.8800e-003	213.0605
Gasoline/Service Station	0.572918	6.1800e-003	0.0562	0.0472	3.4000e-004		4.2700e-003	4.2700e-003		4.2700e-003	4.2700e-003		67.4021	67.4021	1.2900e-003	1.2400e-003	67.8026
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0256**	**0.2327**	**0.1954**	**1.4000e-003**		**0.0177**	**0.0177**		**0.0177**	**0.0177**		**279.2039**	**279.2039**	**5.3500e-003**	**5.1200e-003**	**280.8631**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2773	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-003
Unmitigated	0.2773	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-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	lb/day										lb/day					
Architectural Coating	0.0347					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2423					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-003
Total	**0.2773**	**2.0000e-005**	**2.1800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.6700e-003**	**4.6700e-003**	**1.0000e-005**		**4.9800e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0347					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2423					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.6700e-003	4.6700e-003	1.0000e-005		4.9800e-003
Total	**0.2773**	**2.0000e-005**	**2.1800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.6700e-003**	**4.6700e-003**	**1.0000e-005**		**4.9800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C

CALEEMOD MODEL ANNUAL EMISSIONS PRINTOUTS, CAP CHECKLIST AND EMFAC DATA

190221 Winchester at Jean Nicholas Commercial Retail Center

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.48	Acre	1.48	64,468.80	0
Other Non-Asphalt Surfaces	1.23	Acre	1.23	53,578.80	0
Fast Food Restaurant with Drive Thru	2.63	1000sqft	0.06	2,627.00	0
Gasoline/Service Station	16.00	Pump	0.17	7,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

190221 Winchester at Jean Nicholas Commercial Retail Center - Riverside-South Coast County, Annual

Project Characteristics -

Land Use - ~2.935 ac w/ 2,627 SF coffee-shop w/ drive-thru, 16 FP gas station w/ 5,185 SF conv market & 2,315 SF car wash, ~50% (~1.48 ac) site is paving (includes parking lot w/ 68 spcs & 2 loading spcs) & rmdr landscaping/open space/hardscape (~1.23 ac).

Construction Phase - Construction anticipated to begin no sooner than September 2020 and last ~7 months with completion in March 2021. Site is vacant, no demo.

Off-road Equipment - CalEEMod default construction duration for building cosntruction phased decreased by ~36%; therefore, 36% more equipment needed than CalEEMod default list.

Grading - Site anticipated to balance.

Vehicle Trips - Per TIA, 754.85 trips/TSF coffee-shop (w/ 49% AM & 50% PM pass-by reduction) & 200.13 trips/FP gas station (w/62% AM & 56% PM) pass-by reduction). Pass-by trips changed to zero & split between primary/diverted.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Site is ~0.45 miles north of RTA Rte 79 stop Algarve/Cloche & ~6.8 miles SW of dwntwn Winchester. Sidewalks on/off-site. Per Riv Co, 1 emp/500 SF commercial = 10,127sf/500 = ~20 emp/0.23 jb ac (jb ac = buildings only) = ~87 emp/jb ac.

Energy Mitigation - 2019 Title 24 Standards for nonresidential buildings will use about 30 percent less energy than with 2016 Title 24 standards. Energy Star Appliances used on-site.

Water Mitigation - 20% indoor water reduction per CalGreen Standards. Water-efficient irrigation systems.

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

190221 Winchester at Jean Nicholas Commercial Retail Center - Riverside-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	140.00
tblLandUse	LandUseSquareFeet	2,258.80	7,500.00
tblLandUse	LotAcreage	0.05	0.17
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblVehicleTrips	DV_TP	21.00	46.00
tblVehicleTrips	DV_TP	27.00	57.00
tblVehicleTrips	PB_TP	50.00	0.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	29.00	54.00
tblVehicleTrips	PR_TP	14.00	43.00
tblVehicleTrips	ST_TR	722.03	754.85
tblVehicleTrips	ST_TR	168.56	200.13
tblVehicleTrips	SU_TR	542.72	754.85
tblVehicleTrips	SU_TR	168.56	200.13
tblVehicleTrips	WD_TR	496.12	754.85
tblVehicleTrips	WD_TR	168.56	200.13

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1378	1.0512	0.9188	1.7900e-003	0.0493	0.0536	0.1029	0.0181	0.0511	0.0692	0.0000	152.9221	152.9221	0.0267	0.0000	153.5882
2021	0.1557	0.7022	0.6823	1.3300e-003	0.0222	0.0340	0.0562	5.9800e-003	0.0324	0.0384	0.0000	113.7254	113.7254	0.0196	0.0000	114.2155
Maximum	**0.1557**	**1.0512**	**0.9188**	**1.7900e-003**	**0.0493**	**0.0536**	**0.1029**	**0.0181**	**0.0511**	**0.0692**	**0.0000**	**152.9221**	**152.9221**	**0.0267**	**0.0000**	**153.5882**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1378	1.0512	0.9188	1.7900e-003	0.0373	0.0536	0.0909	0.0119	0.0511	0.0631	0.0000	152.9219	152.9219	0.0267	0.0000	153.5881
2021	0.1557	0.7022	0.6823	1.3300e-003	0.0222	0.0340	0.0562	5.9800e-003	0.0324	0.0384	0.0000	113.7253	113.7253	0.0196	0.0000	114.2154
Maximum	**0.1557**	**1.0512**	**0.9188**	**1.7900e-003**	**0.0373**	**0.0536**	**0.0909**	**0.0119**	**0.0511**	**0.0631**	**0.0000**	**152.9219**	**152.9219**	**0.0267**	**0.0000**	**153.5881**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**16.77**	**0.00**	**7.54**	**25.58**	**0.00**	**5.72**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2020	11-30-2020	0.8752	0.8752
2	12-1-2020	2-28-2021	0.8280	0.8280
3	3-1-2021	5-31-2021	0.3386	0.3386
		Highest	0.8752	0.8752

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	0.0506	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004
Energy	5.1900e-003	0.0472	0.0396	2.8000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	115.3328	115.3328	3.6300e-003	1.4900e-003	115.8668
Mobile	1.2470	10.3225	11.8205	0.0512	3.6065	0.0349	3.6414	0.9662	0.0327	0.9989	0.0000	4,753.7437	4,753.7437	0.3087	0.0000	4,761.4603
Waste						0.0000	0.0000		0.0000	0.0000	7.8984	0.0000	7.8984	0.4668	0.0000	19.5679
Water						0.0000	0.0000		0.0000	0.0000	0.3207	4.8350	5.1557	0.0331	8.2000e-004	6.2282
Total	**1.3028**	**10.3697**	**11.8604**	**0.0515**	**3.6065**	**0.0385**	**3.6450**	**0.9662**	**0.0363**	**1.0025**	**8.2191**	**4,873.9120**	**4,882.1311**	**0.8122**	**2.3100e-003**	**4,903.1237**

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	0.0506	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004
Energy	4.6700e-003	0.0425	0.0357	2.5000e-004		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	105.1491	105.1491	3.3200e-003	1.3500e-003	105.6345
Mobile	1.1351	9.1703	8.7697	0.0356	2.2360	0.0240	2.2600	0.5991	0.0224	0.6215	0.0000	3,315.1897	3,315.1897	0.2702	0.0000	3,321.9439
Waste						0.0000	0.0000		0.0000	0.0000	1.9746	0.0000	1.9746	0.1167	0.0000	4.8920
Water						0.0000	0.0000		0.0000	0.0000	0.2566	3.9963	4.2529	0.0265	6.6000e-004	5.1113
Total	**1.1903**	**9.2128**	**8.8056**	**0.0359**	**2.2360**	**0.0272**	**2.2632**	**0.5991**	**0.0257**	**0.6247**	**2.2311**	**3,424.3356**	**3,426.5667**	**0.4167**	**2.0100e-003**	**3,437.5823**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**8.63**	**11.16**	**25.76**	**30.32**	**38.00**	**29.35**	**37.91**	**38.00**	**29.27**	**37.69**	**72.85**	**29.74**	**29.81**	**48.70**	**12.99**	**29.89**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	9/1/2020	9/8/2020	5	6	
2	Building Construction	Building Construction	9/9/2020	3/23/2021	5	140	
3	Paving	Paving	3/4/2021	3/17/2021	5	10	
4	Architectural Coating	Architectural Coating	3/18/2021	3/31/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.71

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 15,191; Non-Residential Outdoor: 5,064; Striped Parking Area: 7,083 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	53.00	21.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 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					
Fugitive Dust					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	**5.7700e-003**	**0.0640**	**0.0298**	**6.0000e-005**	**0.0197**	**2.9700e-003**	**0.0226**	**0.0101**	**2.7300e-003**	**0.0128**	**0.0000**	**5.4333**	**5.4333**	**1.7600e-003**	**0.0000**	**5.4773**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2759	0.2759	1.0000e-005	0.0000	0.2761
Total	**1.4000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2759**	**0.2759**	**1.0000e-005**	**0.0000**	**0.2761**

3.2 Grading - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.6700e-003	0.0000	7.6700e-003	3.9400e-003	0.0000	3.9400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	**5.7700e-003**	**0.0640**	**0.0298**	**6.0000e-005**	**7.6700e-003**	**2.9700e-003**	**0.0106**	**3.9400e-003**	**2.7300e-003**	**6.6700e-003**	**0.0000**	**5.4333**	**5.4333**	**1.7600e-003**	**0.0000**	**5.4773**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.0000e-004	1.0300e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2759	0.2759	1.0000e-005	0.0000	0.2761
Total	**1.4000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2759**	**0.2759**	**1.0000e-005**	**0.0000**	**0.2761**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1194	0.8905	0.7957	1.2800e-003		0.0500	0.0500		0.0478	0.0478	0.0000	106.0592	106.0592	0.0227	0.0000	106.6264
Total	**0.1194**	**0.8905**	**0.7957**	**1.2800e-003**		**0.0500**	**0.0500**		**0.0478**	**0.0478**	**0.0000**	**106.0592**	**106.0592**	**0.0227**	**0.0000**	**106.6264**

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	2.4500e-003	0.0896	0.0175	2.2000e-004	5.4400e-003	5.1000e-004	5.9400e-003	1.5700e-003	4.8000e-004	2.0500e-003	0.0000	21.1709	21.1709	1.6900e-003	0.0000	21.2132
Worker	9.9900e-003	7.0000e-003	0.0747	2.2000e-004	0.0239	1.5000e-004	0.0240	6.3400e-003	1.4000e-004	6.4800e-003	0.0000	19.9827	19.9827	5.0000e-004	0.0000	19.9953
Total	**0.0124**	**0.0966**	**0.0922**	**4.4000e-004**	**0.0293**	**6.6000e-004**	**0.0300**	**7.9100e-003**	**6.2000e-004**	**8.5300e-003**	**0.0000**	**41.1537**	**41.1537**	**2.1900e-003**	**0.0000**	**41.2085**

3.3 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1194	0.8905	0.7957	1.2800e-003		0.0500	0.0500		0.0478	0.0478	0.0000	106.0590	106.0590	0.0227	0.0000	106.6263
Total	**0.1194**	**0.8905**	**0.7957**	**1.2800e-003**		**0.0500**	**0.0500**		**0.0478**	**0.0478**	**0.0000**	**106.0590**	**106.0590**	**0.0227**	**0.0000**	**106.6263**

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	2.4500e-003	0.0896	0.0175	2.2000e-004	5.4400e-003	5.1000e-004	5.9400e-003	1.5700e-003	4.8000e-004	2.0500e-003	0.0000	21.1709	21.1709	1.6900e-003	0.0000	21.2132
Worker	9.9900e-003	7.0000e-003	0.0747	2.2000e-004	0.0239	1.5000e-004	0.0240	6.3400e-003	1.4000e-004	6.4800e-003	0.0000	19.9827	19.9827	5.0000e-004	0.0000	19.9953
Total	**0.0124**	**0.0966**	**0.0922**	**4.4000e-004**	**0.0293**	**6.6000e-004**	**0.0300**	**7.9100e-003**	**6.2000e-004**	**8.5300e-003**	**0.0000**	**41.1537**	**41.1537**	**2.1900e-003**	**0.0000**	**41.2085**

3.3 Building Construction - 2021

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	0.0754	0.5797	0.5510	9.1000e-004		0.0304	0.0304		0.0291	0.0291	0.0000	75.0213	75.0213	0.0156	0.0000	75.4108
Total	**0.0754**	**0.5797**	**0.5510**	**9.1000e-004**		**0.0304**	**0.0304**		**0.0291**	**0.0291**	**0.0000**	**75.0213**	**75.0213**	**0.0156**	**0.0000**	**75.4108**

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	1.4500e-003	0.0568	0.0109	1.6000e-004	3.8500e-003	1.1000e-004	3.9500e-003	1.1100e-003	1.0000e-004	1.2100e-003	0.0000	14.8580	14.8580	1.1300e-003	0.0000	14.8863
Worker	6.5900e-003	4.4400e-003	0.0484	1.5000e-004	0.0169	1.0000e-004	0.0170	4.4900e-003	9.0000e-005	4.5800e-003	0.0000	13.6616	13.6616	3.2000e-004	0.0000	13.6695
Total	**8.0400e-003**	**0.0612**	**0.0593**	**3.1000e-004**	**0.0207**	**2.1000e-004**	**0.0209**	**5.6000e-003**	**1.9000e-004**	**5.7900e-003**	**0.0000**	**28.5195**	**28.5195**	**1.4500e-003**	**0.0000**	**28.5558**

3.3 Building Construction - 2021

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	0.0754	0.5797	0.5510	9.1000e-004		0.0304	0.0304		0.0291	0.0291	0.0000	75.0212	75.0212	0.0156	0.0000	75.4107
Total	**0.0754**	**0.5797**	**0.5510**	**9.1000e-004**		**0.0304**	**0.0304**		**0.0291**	**0.0291**	**0.0000**	**75.0212**	**75.0212**	**0.0156**	**0.0000**	**75.4107**

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	1.4500e-003	0.0568	0.0109	1.6000e-004	3.8500e-003	1.1000e-004	3.9500e-003	1.1100e-003	1.0000e-004	1.2100e-003	0.0000	14.8580	14.8580	1.1300e-003	0.0000	14.8863
Worker	6.5900e-003	4.4400e-003	0.0484	1.5000e-004	0.0169	1.0000e-004	0.0170	4.4900e-003	9.0000e-005	4.5800e-003	0.0000	13.6616	13.6616	3.2000e-004	0.0000	13.6695
Total	**8.0400e-003**	**0.0612**	**0.0593**	**3.1000e-004**	**0.0207**	**2.1000e-004**	**0.0209**	**5.6000e-003**	**1.9000e-004**	**5.7900e-003**	**0.0000**	**28.5195**	**28.5195**	**1.4500e-003**	**0.0000**	**28.5558**

3.4 Paving - 2021

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	5.3200e-003	0.0532	0.0589	9.0000e-005		2.9100e-003	2.9100e-003		2.6900e-003	2.6900e-003	0.0000	7.7524	7.7524	2.4600e-003	0.0000	7.8138
Paving	1.9400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.2600e-003**	**0.0532**	**0.0589**	**9.0000e-005**		**2.9100e-003**	**2.9100e-003**		**2.6900e-003**	**2.6900e-003**	**0.0000**	**7.7524**	**7.7524**	**2.4600e-003**	**0.0000**	**7.8138**

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	3.2000e-004	2.2000e-004	2.3600e-003	1.0000e-005	8.2000e-004	0.0000	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6666	0.6666	2.0000e-005	0.0000	0.6670
Total	**3.2000e-004**	**2.2000e-004**	**2.3600e-003**	**1.0000e-005**	**8.2000e-004**	**0.0000**	**8.3000e-004**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6666**	**0.6666**	**2.0000e-005**	**0.0000**	**0.6670**

3.4 Paving - 2021

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	5.3200e-003	0.0532	0.0589	9.0000e-005		2.9100e-003	2.9100e-003		2.6900e-003	2.6900e-003	0.0000	7.7524	7.7524	2.4600e-003	0.0000	7.8138
Paving	1.9400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.2600e-003**	**0.0532**	**0.0589**	**9.0000e-005**		**2.9100e-003**	**2.9100e-003**		**2.6900e-003**	**2.6900e-003**	**0.0000**	**7.7524**	**7.7524**	**2.4600e-003**	**0.0000**	**7.8138**

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	3.2000e-004	2.2000e-004	2.3600e-003	1.0000e-005	8.2000e-004	0.0000	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6666	0.6666	2.0000e-005	0.0000	0.6670
Total	**3.2000e-004**	**2.2000e-004**	**2.3600e-003**	**1.0000e-005**	**8.2000e-004**	**0.0000**	**8.3000e-004**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6666**	**0.6666**	**2.0000e-005**	**0.0000**	**0.6670**

3.5 Architectural Coating - 2021

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	0.0634					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	**0.0645**	**7.6300e-003**	**9.0900e-003**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.6000e-004	1.7300e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4889	0.4889	1.0000e-005	0.0000	0.4892
Total	**2.4000e-004**	**1.6000e-004**	**1.7300e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4889**	**0.4889**	**1.0000e-005**	**0.0000**	**0.4892**

3.5 Architectural Coating - 2021

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	0.0634					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	**0.0645**	**7.6300e-003**	**9.0900e-003**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.6000e-004	1.7300e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4889	0.4889	1.0000e-005	0.0000	0.4892
Total	**2.4000e-004**	**1.6000e-004**	**1.7300e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4889**	**0.4889**	**1.0000e-005**	**0.0000**	**0.4892**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive 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	1.1351	9.1703	8.7697	0.0356	2.2360	0.0240	2.2600	0.5991	0.0224	0.6215	0.0000	3,315.1897	3,315.1897	0.2702	0.0000	3,321.9439
Unmitigated	1.2470	10.3225	11.8205	0.0512	3.6065	0.0349	3.6414	0.9662	0.0327	0.9989	0.0000	4,753.7437	4,753.7437	0.3087	0.0000	4,761.4603

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	1,982.99	1,982.99	1982.99	3,921,938	2,431,547
Gasoline/Service Station	3,202.08	3,202.08	3202.08	5,524,423	3,425,066
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5,185.07	5,185.07	5,185.07	9,446,361	5,856,613

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive	16.60	8.40	6.90	2.20	78.80	19.00	54	46	0
Gasoline/Service Station	16.60	8.40	6.90	2.00	79.00	19.00	43	57	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Gasoline/Service Station	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965
Other Non-Asphalt Surfaces	0.545527	0.036856	0.186032	0.115338	0.015222	0.004970	0.017525	0.069528	0.001397	0.001160	0.004547	0.000932	0.000965

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive 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	58.9237	58.9237	2.4300e-003	5.0000e-004	59.1345
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	63.9967	63.9967	2.6400e-003	5.5000e-004	64.2256
NaturalGas Mitigated	4.6700e-003	0.0425	0.0357	2.5000e-004		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	46.2253	46.2253	8.9000e-004	8.5000e-004	46.5000
NaturalGas Unmitigated	5.1900e-003	0.0472	0.0396	2.8000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	51.3361	51.3361	9.8000e-004	9.4000e-004	51.6412

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	718327	3.8700e-003	0.0352	0.0296	2.1000e-004		2.6800e-003	2.6800e-003		2.6800e-003	2.6800e-003	0.0000	38.3327	38.3327	7.3000e-004	7.0000e-004	38.5605
Gasoline/Service Station	243675	1.3100e-003	0.0119	0.0100	7.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	13.0034	13.0034	2.5000e-004	2.4000e-004	13.0807
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**5.1800e-003**	**0.0472**	**0.0396**	**2.8000e-004**		**3.5900e-003**	**3.5900e-003**		**3.5900e-003**	**3.5900e-003**	**0.0000**	**51.3361**	**51.3361**	**9.8000e-004**	**9.4000e-004**	**51.6412**

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	657115	3.5400e-003	0.0322	0.0271	1.9000e-004		2.4500e-003	2.4500e-003		2.4500e-003	2.4500e-003	0.0000	35.0662	35.0662	6.7000e-004	6.4000e-004	35.2746
Gasoline/Service Station	209115	1.1300e-003	0.0103	8.6100e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.1592	11.1592	2.1000e-004	2.0000e-004	11.2255
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.6700e-003**	**0.0425**	**0.0357**	**2.5000e-004**		**3.2300e-003**	**3.2300e-003**		**3.2300e-003**	**3.2300e-003**	**0.0000**	**46.2253**	**46.2253**	**8.8000e-004**	**8.4000e-004**	**46.5000**

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	124730	39.7416	1.6400e-003	3.4000e-004	39.8838
Gasoline/Service Station	76125	24.2551	1.0000e-003	2.1000e-004	24.3418
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**63.9967**	**2.6400e-003**	**5.5000e-004**	**64.2256**

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	114973	36.6330	1.5100e-003	3.1000e-004	36.7640
Gasoline/Service Station	69960	22.2908	9.2000e-004	1.9000e-004	22.3705
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**58.9237**	**2.4300e-003**	**5.0000e-004**	**59.1345**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0506	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004
Unmitigated	0.0506	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.3400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0442					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004
Total	**0.0506**	**0.0000**	**2.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.3000e-004**	**5.3000e-004**	**0.0000**	**0.0000**	**5.6000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.3400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0442					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.3000e-004	5.3000e-004	0.0000	0.0000	5.6000e-004
Total	**0.0506**	**0.0000**	**2.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.3000e-004**	**5.3000e-004**	**0.0000**	**0.0000**	**5.6000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.2529	0.0265	6.6000e-004	5.1113
Unmitigated	5.1557	0.0331	8.2000e-004	6.2282

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	0.798294 / 0.0509549	3.7456	0.0262	6.4000e-004	4.5914
Gasoline/Service Station	0.21251 / 0.130248	1.4101	6.9800e-003	1.7000e-004	1.6368
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**5.1557**	**0.0331**	**8.1000e-004**	**6.2282**

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	0.638635 / 0.0509549	3.0325	0.0209	5.2000e-004	3.7093
Gasoline/Service Station	0.170008 / 0.130248	1.2203	5.5900e-003	1.4000e-004	1.4020
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**4.2529**	**0.0265**	**6.6000e-004**	**5.1113**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.9746	0.1167	0.0000	4.8920
Unmitigated	7.8984	0.4668	0.0000	19.5679

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	30.29	6.1486	0.3634	0.0000	15.2329
Gasoline/Service Station	8.62	1.7498	0.1034	0.0000	4.3350
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**7.8984**	**0.4668**	**0.0000**	**19.5679**

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	7.5725	1.5372	0.0908	0.0000	3.8082
Gasoline/Service Station	2.155	0.4375	0.0259	0.0000	1.0838
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**1.9746**	**0.1167**	**0.0000**	**4.8920**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Table 2: Screening Table for GHG Implementation Measures for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Implementation Measure IM E5: Energy Efficiency for Commercial/Public Development			
E5.A Building Envelope			
E5.A.1 Insulation	Baseline standard(walls R-13; roof/attic R-30) Modestly Enhanced Insulation (walls R-13, roof/attic R-38) Enhanced Insulation (rigid wall insulation R-13, roof/attic R-38) Greatly Enhanced Insulation (spray foam insulated walls R-15 or higher, roof/attic R-38 or higher)	0 points 15 points 18 points 20 points	0 points
E5.A.2 Windows	Baseline standard (required) Modestly Enhanced Window Insulation (5% > Title 24) Enhanced Window Insulation (15%> Title 24) Greatly Enhanced Window Insulation (20%> Title 24)	0 points 7 points 8 points 12 points	7 points
E5.A.3 Cool Roofs	Modest Cool Roof (CRRC Rated 0.15 aged solar reflectance, 0.75 thermal emittance) Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance) Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)	12 points 14 points 16 points	12 points
E5.A.4 Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage. Air barrier applied to exterior walls, calking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent) Blower Door HERS Verified Envelope Leakage or equivalent Title 24 standard (required) Modest Building Envelope Leakage (5% > Title 24) Reduced Building Envelope Leakage (15%> Title 24) Minimum Building Envelope Leakage (20% > Title 24)	12 points 10 points 0 points 4 points 8 points 12 points	0 points
E5.A.5 Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls. Modest Thermal Mass (10% of floor or 10% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood or other insulating materials) Enhanced Thermal Mass (20% of floor or 20% of walls 12" or more thick exposed concrete or masonry with no permanently installed	4 points 6 points	N/A

Feature	Description	Assigned Point Values	Project Points
	floor covering such as carpet, linoleum, wood or other insulating materials)		
E5.B Indoor Space Efficiencies			
E5.B.1 Heating/ Cooling Distribution System	Minimum Duct Insulation (R-4.2 required) Modest Duct insulation (R-6) Enhanced Duct Insulation (R-8) Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)	0 points 8 points 10 points 14 points	8 points
E5.B.2 Space Heating/ Cooling Equipment	Baseline HVAC Efficiency (EER 13/60% AFUE or 7.7 HSPF) Improved Efficiency HVAC (EER 14/65% AFUE or 8 HSPF) High Efficiency HVAC (EER 15/72% AFUE or 8.5 HSPF) Very High Efficiency HVAC (EER 16/80% AFUE or 9 HSPF)	0 points 7 points 8 points 12 points	0 points
E5.B.3 Commercial Heat Recovery Systems	Heat recovery strategies employed with commercial laundry, cooking equipment, and other commercial heat sources for reuse in HVAC air intake or other appropriate heat recovery technology. Point values for these types of systems will be determined based upon design and engineering data documenting the energy savings.	TBD	
E5.B.4 Water Heaters	2008 Minimum Efficiency (0.57 Energy Factor) Improved Efficiency Water Heater (0.675 Energy Factor) High Efficiency Water Heater (0.72 Energy Factor) Very High Efficiency Water Heater (0.92 Energy Factor) Solar Pre-heat System (0.2 Net Solar Fraction) Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)	0 points 14 points 16 points 19 points 4 points 8 points	19 points
E5.B.5 Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours. All peripheral rooms within building have at least one window or skylight All rooms within building have daylight (through use of windows, solar tubes, skylights, etc.) All rooms daylighted	 1 point 5 points 7 points	N/A
E5.B.6 Artificial Lighting	Baseline standard (required) Efficient Lights (25% of in-unit fixtures considered high efficacy. High efficacy is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40watt) High Efficiency Lights (50% of in-unit fixtures are high efficacy)	0 points 9 points 12 points 14 points	14 points

Feature	Description	Assigned Point Values	Project Points
	Very High Efficiency Lights (100% of in-unit fixtures are high efficacy)		
E5.B.7 Appliances	Star Commercial Refrigerator (new) Energy Star Commercial Dish Washer (new) Energy Star Commercial Cloths Washing	4 points 4 points 4 points	
E5.C Miscellaneous Commercial Building Efficiencies			
E5.C.1 Building Placement	North/South alignment of building or other building placement such that the orientation of the buildings optimizes conditions for natural heating, cooling, and lighting.	6 points	N/A
Shading	At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on Jun 21st.	6 Points	N/A
E5.C.2 Other	This allows innovation by the applicant to provide design features that increases the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
E5.C.3 Existing Commercial building Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing residential dwelling units to further the point value of their project. Retrofitting existing commercial buildings within the unincorporated County is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case by case basis and must have the approval of the Riverside County Planning Department. The decision to allow applicants to participate in this program will be evaluated based upon, but not limited to the following: Will the energy efficiency retrofit project benefit low income or disadvantaged communities? Does the energy efficiency retrofit project provide co-benefits important to the County? Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.	TBD	
Implementation Measure IM E6: New Commercial/Industrial Renewable Energy			
E6.A.1 Photovoltaic	Solar Photovoltaic panels installed on commercial buildings or in collective arrangements within a commercial development such that the total power[3] provided augments: Solar Ready Roofs (sturdy roof and electric hookups) 10 percent of the power needs of the project 20 percent of the power needs of the project 30 percent of the power needs of the project	 2 points 8 points 14 points 20 points	2 points

[3] Ibid.

Feature	Description	Assigned Point Values	Project Points
	40 percent of the power needs of the project	26 points	
	50 percent of the power needs of the project	32 points	
	60 percent of the power needs of the project	38 points	
	70 percent of the power needs of the project	44 points	
	80 percent of the power needs of the project	50 points	
	90 percent of the power needs of the project	56 points	
	100 percent of the power needs of the project	62 points	
E6.A.2 Wind turbines	Some areas of the County lend themselves to wind turbine applications. Analysis of the areas capability to support wind turbines should be evaluated prior to choosing this feature. Wind turbines as part of the commercial development such that the total power[4] provided augments:		N/A
	10 percent of the power needs of the project	8 points	
	20 percent of the power needs of the project	14 points	
	30 percent of the power needs of the project	20 points	
	40 percent of the power needs of the project	26 points	
	50 percent of the power needs of the project	32 points	
	60 percent of the power needs of the project	38 points	
	70 percent of the power needs of the project	44 points	
	80 percent of the power needs of the project	50 points	
	90 percent of the power needs of the project	56 points	
	100 percent of the power needs of the project	62 points	
E6.A.3 Off-site renewable energy project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing residential or existing commercial/industrial. These off-site renewable energy retrofit project proposals will be determined on a case by case basis accompanied by a detailed plan documenting the quantity of renewable energy the proposal will generate. Point values will be based upon the energy generated by the proposal.	TBD	
E6.A.4 Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD	
Implementation Measure IM W1: Water Use Reduction Initiative			
W1.C Irrigation and Landscaping			
W1.C.1 Water Efficient Landscaping	Limit conventional turf to < 20% of each lot (required)	0 points	4 points
	Eliminate conventional turf from landscaping	3 points	
	Eliminate turf and only provide drought tolerant plants	4 points	

[4] Ibid.

Feature	Description	Assigned Point Values	Project Points
	Only California Native landscape that requires no or only supplemental irrigation	8 points	
W1.C.2 Water Efficient irrigation systems	Low precipitation spray heads< .75"/hr or drip irrigation Weather based irrigation control systems combined with drip irrigation (demonstrate 20 reduced water use)	1 point 5 points	5 points
W1.C.3 Storm water Reuse Systems	Innovative on-site stormwater collection, filtration and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
W1.D Potable Water			
W1.D.1 Showers	Water Efficient Showerheads (2.0 gpm)Title 24 standard (required)	3 points	N/A
W1.D.2 Toilets	Water Efficient Toilets/Urinals (1.5gpm) Waterless Urinals (note that commercial buildings having both waterless urinals and high efficiency toilets will have a combined point value of 6 points)	3 points 4 points	3 points
W1.D.3 Faucets	Water Efficient faucets (1.28gpm)	3 points	3 points
W1.D.4 Commercial Dishwashers	Water Efficient dishwashers (20% water savings)	4 points	N/A
W1.D.5 Commercial Laundry Washers	Water Efficient laundry (15% water savings) High Efficiency laundry Equipment that captures and reuses rinse water (30% water savings)	3 points 6 points	N/A
W1.D.6 Commercial Water Operations Program	Establish an operational program to reduce water loss from pools, water features, etc., by covering pools, adjusting fountain operational hours, and using water treatment to reduce draw down and replacement of water. Point values for these types of plans will be determined based upon design and engineering data documenting the water savings.	TBD	
Implementation Measure IM W2: Increase Reclaimed Water Use			
W2.A.1 Recycled Water	Graywater (purple pipe) irrigation system on site	5 points	5 points

Feature	Description	Assigned Point Values	Project Points
Implementation Measure IM T1: Employment Based Trip and VMT Reduction Policy			
T1.A.1 Alternative Scheduling	Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks. Provide flexibility in scheduling such that at least 30% of employees participate in 9/80 work week, 4-day/40-hour work week, or telecommuting 1.5 days/week.	5 points	
T1.A.2 Car/Vanpools	Car/vanpool program Car/vanpool program with preferred parking Car/vanpool with guaranteed ride home program Subsidized employee incentive car/vanpool program Combination of all the above	1 point 2 points 3 points 5 points 6 points	1 point
T1.A.3 Employee Bicycle/ Pedestrian Programs	Complete sidewalk to residential within ½ mile Complete bike path to residential within 3 miles Bike lockers and secure racks Showers and changing facilities Subsidized employee walk/bike program Note: combine all applicable points for total value	1 point 1 point 1 point 2 points 3 points	1 point
T1.A.4 Shuttle/Transit Programs	Local transit within ¼ mile Light rail transit within ½ mile Shuttle service to light rail transit station Guaranteed ride home program Subsidized Transit passes Note: combine all applicable points for total value	1 point 3 points 5 points 1 points 2 points	N/A
T1.A.5 CTR	Employer based Commute Trip Reduction (CTR). CTRs apply to commercial, offices, or industrial projects that include a reduction of vehicle trip or VMT goal using a variety of employee commutes trip reduction methods. The point value will be determined based upon a TIA that demonstrates the trip/VMT reductions. Suggested point ranges: Incentive based CTR Programs (1-8 points) Mandatory CTR programs (5-20 points)	TBD	
T1.A.6 Other Trip Reduction Measures	Point values for other trip or VMT reduction measures not listed above may be calculated based on a TIA and/or other traffic data supporting the trip and/or VMT reductions.	TBD	
Implementation Measure IM T3: Mixed Use Development			
T3.B.1 Mixed Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed use projects will be	TBD	

Feature	Description	Assigned Point Values	Project Points
	determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled		
T3.B.2 Local Retail Near Residential (Commercial only Projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.	TBD	
Implementation Measure IM T4: Preferential Parking			
T4.A.1 Parking	Provide reserved preferential parking spaces for car-share, carpool, and ultra-low or zero emission vehicles. Provide larger parking spaces that can accommodate vans used for ride-sharing programs and reserve them for vanpools and include adequate passenger waiting/loading areas.	1 point 1 point	1 point
Implementation Measure IM T5: Signal Synchronization and Intelligent Traffic Systems			
T5.B.1 Signal improvements	Techniques for improving traffic flow include: traffic signal coordination to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds. Synchronize signals along arterials used by project. Connect signals along arterials to existing ITS.	1 point/signal 3 points/ signal	
Implementation Measure IM T6: Bicycle and Pedestrian Infrastructure			
T6.B.1 Sidewalks	Provide sidewalks on one side of the street (required) Provide sidewalks on both sides of the street Provide pedestrian linkage between commercial and residential land uses within 1 mile	0 points 1 point 3 points	
T6.B.2 Bicycle paths	Provide bicycle paths within project boundaries Provide bicycle path linkages between commercial and other land uses Provide bicycle path linkages between commercial and transit	TBD 2 points 5 points	
Implementation Measure IM T7: Electric Vehicle Use			
T7.B.1 Electric Vehicle Recharging	Provide circuit and capacity in garages/parking areas for installation of electric vehicle charging stations. Install electric vehicle charging stations in garages/parking areas	2 points/area 8 pts/station	8 points
Implementation Measure IM T8: Anti-Idling Enforcement			
T8.A.1 Commercial	All commercial vehicles are restricted to 5-minutes or less per trip on site and at loading docks.	2 points Required of	

Feature	Description	Assigned Point Values	Project Points
Vehicle Idling Restriction		all Commercial	
Implementation Measure IM T9: Increase Public Transit			
T9.B.1 Public Transit	The point value of a projects ability to increase public transit use will be determined based upon a Transportation Impact Analysis (TIA) demonstrating decreased use of private vehicles and increased use of public transportation. Increased transit accessibility (1-15 points)	TBD	
Implementation Measure IM L2: Prohibit Gas-Powered Landscaping Equipment			
L2.B.1 Landscaping Equipment	Electric lawn equipment including lawn mowers, leaf blowers and vacuums, shredders, trimmers, and chain saws are available. When electric landscape equipment is used in place of conventional gas-powered equipment, direct GHG emissions from natural gas combustion are replaced with indirect GHG emissions associated with the electricity used to power the equipment. Project provides electrical outlets on the exterior of all buildings so that electric landscaping equipment is compatible with all built facilities.	2 points	
Implementation Measure IM SW1: 80 Percent Solid Waste Diversion Program			
SW1.B.1 Recycling	County initiated recycling program diverting 80% of waste requires coordination with commercial development to realize this goal. The following recycling features will help the County fulfill this goal: Provide separated recycling bins within each commercial building/floor and provide large external recycling collection bins at central location for collection truck pick-up Provide commercial/industrial recycling programs that fulfills an on-site goal of 80% diversion of solid waste	2 points 5 points	2 points
Implementation Measure IM SW2: Construction and Demolition Debris Diversion Program			
SW2.B.1 Recycling of Construction/ Demolition Debris	Recycle 2% of debris (required) Recycle 5% of debris Recycle 8 % of debris Recycle 10% of debris Recycle 12% of debris Recycle 15% of debris Recycle 20% of debris	0 points 1 point 2 points 3 points 4 points 5 points 6 points	6 points

Feature	Description	Assigned Point Values	Project Points
Implementation Measure IM O1: Other GHG Reduction Feature Implementation			
O1.A1 Other GHG Emissions Reduction Features	This allows innovation by the applicant to provide commercial design features that the GHG emissions from construction and/or operation of the project not provided in the table. Note that engineering data will be required documenting the GHG reduction amount and point values given based upon emission reductions calculations using approved models, methods and protocols.	TBD	
Total Points Earned by Commercial/Industrial Project:			**101**

Source: EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Categor	Model Year	Speed	Fuel	Population	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	**Miles Per Gallon**	Vehicle Class
South Coast	2020	HHDT	Aggregate	Aggregate	Gasoline	87.06695208	1742.035577	1.924993227	1924.993227	1768700.915	7544.942	11291189	**6.38**	HHD
South Coast	2020	HHDT	Aggregate	Aggregate	Diesel	94401.00533	946656.7187	1766.775921	1766775.921		11283644			
South Coast	2020	LDA	Aggregate	Aggregate	Gasoline	6178149.091	29171004.02	8365.832232	8365832.232	8410106.641	2.45E+08	247292982	**29.40**	LDA
South Coast	2020	LDA	Aggregate	Aggregate	Diesel	49858.7341	236026.4765	44.27440932	44274.40932		2047192			
South Coast	2020	LDA	Aggregate	Aggregate	Electricity	89063.98818	446754.7836	0	0		3493456			
South Coast	2020	LDT1	Aggregate	Aggregate	Gasoline	673575.0448	3092733.338	1009.703307	1009703.307	1010171.081	25456837	25467145.5	**25.21**	LDT1
South Coast	2020	LDT1	Aggregate	Aggregate	Diesel	436.3696382	1529.802184	0.467774015	467.7740154		10308.35			
South Coast	2020	LDT1	Aggregate	Aggregate	Electricity	2427.188659	11955.91972	0	0		91067.68			
South Coast	2020	LDT2	Aggregate	Aggregate	Gasoline	2108549.59	9872322.883	3534.790518	3534790.518	3549608.318	81418835	81917716.6	**23.08**	LDT2
South Coast	2020	LDT2	Aggregate	Aggregate	Diesel	11074.63811	54951.16625	14.81780046	14817.80046		498881.7			
South Coast	2020	LDT2	Aggregate	Aggregate	Electricity	12230.90008	62115.07939	0	0		414287.6			
South Coast	2020	LHDT1	Aggregate	Aggregate	Gasoline	173614.6174	2586599.113	612.6252653	612625.2653	816588.3158	6333811	10610163.3	**12.99**	LHDT1
South Coast	2020	LHDT1	Aggregate	Aggregate	Diesel	103329.3828	1299753.648	203.9630505	203963.0505		4276353			
South Coast	2020	LHDT2	Aggregate	Aggregate	Gasoline	28771.81583	428657.1859	113.1501167	113150.1167	199942.9802	1018932	2663621.9	**13.32**	LHDT2
South Coast	2020	LHDT2	Aggregate	Aggregate	Diesel	40572.86872	510355.6479	86.79286353	86792.86353		1644690			
South Coast	2020	MCY	Aggregate	Aggregate	Gasoline	269351.1059	538702.2118	52.6214956	52621.4956	52621.4956	1916380	1916380.23	**36.42**	MCY
South Coast	2020	MDV	Aggregate	Aggregate	Gasoline	1509432.595	6970807.909	2902.923832	2902923.832	2946531.527	54618604	55745588	**18.92**	MDV
South Coast	2020	MDV	Aggregate	Aggregate	Diesel	26705.37886	131705.0331	43.60769552	43607.69552		1126984			
South Coast	2020	MDV	Aggregate	Aggregate	Electricity	3852.020312	19750.85971	0	0		134619.1			
South Coast	2020	MH	Aggregate	Aggregate	Gasoline	35045.56901	3505.958724	66.05937563	66059.37563	76992.39574	331213.3	444314.047	**5.77**	MH
South Coast	2020	MH	Aggregate	Aggregate	Diesel	11453.97402	1145.397402	10.93302012	10933.02012		113100.7			
South Coast	2020	MHDT	Aggregate	Aggregate	Gasoline	24612.44595	492445.8185	269.6494288	269649.4288	993457.9129	1335069	8673793.91	**8.73**	MHDT
South Coast	2020	MHDT	Aggregate	Aggregate	Diesel	116761.6622	1166319.153	723.8084841	723808.4841		7338725			
South Coast	2020	OBUS	Aggregate	Aggregate	Gasoline	5846.82319	116983.2384	51.34879326	51348.79326	88795.67488	252354.2	553148.373	**6.23**	OBUS
South Coast	2020	OBUS	Aggregate	Aggregate	Diesel	4066.240591	39836.26959	37.44688162	37446.88162		300794.1			
South Coast	2020	SBUS	Aggregate	Aggregate	Gasoline	2268.162807	9072.651228	10.43507716	10435.07716	37057.74149	93420.86	291623.905	**7.87**	SBUS
South Coast	2020	SBUS	Aggregate	Aggregate	Diesel	6271.332305	72370.30532	26.62266433	26622.66433		198203			
South Coast	2020	UBUS	Aggregate	Aggregate	Gasoline	938.2571472	3753.028589	18.36430248	18364.30248	18661.09867	88202.73	90080.1773	**4.83**	UBUS
South Coast	2020	UBUS	Aggregate	Aggregate	Diesel	18.19691831	72.78767323	0.296796191	296.7961907		1877.446			
South Coast	2020	UBUS	Aggregate	Aggregate	Electricity	12.11693886	48.46775545	0	0		1072.907			

Source: https://arb.ca.gov/emfac/emissions-inventory

Source: EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Ye	Vehicle Cat	Model Year	Speed	Fuel	Population	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	**Miles Per Gallon**	Vehicle Class
South Coas	2022	HHDT	Aggregate	Aggregate	Gasoline	77.1958085	1544.53374	1.875688287	1875.688287	1764862.223	7790.40352	11802909.59	**6.69**	HHD
South Coas	2022	HHDT	Aggregate	Aggregate	Diesel	98507.932	994224.528	1762.986535	1762986.535		11795119.18			
South Coas	2022	LDA	Aggregate	Aggregate	Gasoline	6370883.06	30101253.3	7989.700531	7989700.531	8037092.123	246404319.3	248708455.5	**30.95**	LDA
South Coas	2022	LDA	Aggregate	Aggregate	Diesel	57442.9993	272823.03	47.39159146	47391.59146		2304136.238			
South Coas	2022	LDA	Aggregate	Aggregate	Electricity	124563.241	622091.77	0	0		5056199.364			
South Coas	2022	LDT1	Aggregate	Aggregate	Gasoline	716397.352	3305300.59	1003.18171	1003181.71	1003572.883	26563674.69	26572483.79	**26.48**	LDT1
South Coas	2022	LDT1	Aggregate	Aggregate	Diesel	378.120922	1319.1108	0.391172549	391.1725485		8809.098622			
South Coas	2022	LDT1	Aggregate	Aggregate	Electricity	5221.44407	26193.6719	0	0		216448.2738			
South Coas	2022	LDT2	Aggregate	Aggregate	Gasoline	2182001.6	10234301	3339.886942	3339886.942	3356537.651	82381240.23	82973883.19	**24.72**	LDT2
South Coas	2022	LDT2	Aggregate	Aggregate	Diesel	13854.2049	68308.9514	16.65070839	16650.70839		592642.9638			
South Coas	2022	LDT2	Aggregate	Aggregate	Electricity	22002.5787	111325.319	0	0		715814.4362			
South Coas	2022	LHDT1	Aggregate	Aggregate	Gasoline	171358.639	2552988.4	583.2281345	583228.1345	800341.5364	6138928.512	10820375.97	**13.52**	LHDT1
South Coas	2022	LHDT1	Aggregate	Aggregate	Diesel	115788.87	1456478.32	217.1134019	217113.4019		4681447.455			
South Coas	2022	LHDT2	Aggregate	Aggregate	Gasoline	29049.2899	432791.136	110.1260053	110126.0053	203012.615	1009215.767	2818408.059	**13.88**	LHDT2
South Coas	2022	LHDT2	Aggregate	Aggregate	Diesel	45909.3209	577481.503	92.8866097	92886.6097		1809192.293			
South Coas	2022	MCY	Aggregate	Aggregate	Gasoline	288756.335	577512.67	54.92216124	54922.16124	54922.16124	1994249.265	1994249.265	**36.31**	MCY
South Coas	2022	MDV	Aggregate	Aggregate	Gasoline	1530646.04	7077024.4	2704.447563	2704447.563	2752250.891	54105469.86	55411342.79	**20.13**	MDV
South Coas	2022	MDV	Aggregate	Aggregate	Diesel	32417.6069	158948.689	47.80332863	47803.32863		1305872.927			
South Coas	2022	MDV	Aggregate	Aggregate	Electricity	11342.4458	58009.4593	0	0		381474.0008			
South Coas	2022	MH	Aggregate	Aggregate	Gasoline	34090.7562	3410.43925	62.96118679	62961.18679	74081.4227	324253.0827	441741.3507	**5.96**	MH
South Coas	2022	MH	Aggregate	Aggregate	Diesel	12198.8394	1219.88394	11.12023591	11120.23591		117488.268			
South Coas	2022	MHDT	Aggregate	Aggregate	Gasoline	24783.3353	495864.972	259.391887	259391.887	979552.16	1316472.619	9032506.745	**9.22**	MHDT
South Coas	2022	MHDT	Aggregate	Aggregate	Diesel	119795.984	1201941.57	720.1602731	720160.2731		7716034.126			
South Coas	2022	OBUS	Aggregate	Aggregate	Gasoline	5832.05071	116687.671	47.77312679	47773.12679	85232.30668	240794.901	557199.216	**6.54**	OBUS
South Coas	2022	OBUS	Aggregate	Aggregate	Diesel	4149.67413	40441.5798	37.45917989	37459.17989		316404.315			
South Coas	2022	SBUS	Aggregate	Aggregate	Gasoline	2563.07261	10252.2904	11.26572543	11265.72543	37683.19883	102707.6059	303493.9216	**8.05**	SBUS
South Coas	2022	SBUS	Aggregate	Aggregate	Diesel	6354.46494	73329.6444	26.4174734	26417.4734		200786.3158			
South Coas	2022	UBUS	Aggregate	Aggregate	Gasoline	952.146028	3808.58411	18.40085629	18400.85629	18647.65249	89255.99818	90734.08386	**4.87**	UBUS
South Coas	2022	UBUS	Aggregate	Aggregate	Diesel	14.1414183	56.5656732	0.246796198	246.7961984		1478.085683			
South Coas	2022	UBUS	Aggregate	Aggregate	Electricity	12.1169389	48.4677555	0	0		1072.906717			

Source: https://arb.ca.gov/emfac/emissions-inventory

GANDDINI GROUP, INC.
550 Parkcenter Drive, Suite 202, Santa Ana, CA 92705
714.795.3100 | www.ganddini.com