BORON BEYOND FOOD MART AIR QUALITY, GLOBAL CLIMATE CHANGE, AND ENERGY IMPACT ANALYSIS

County of San Bernardino

March 31, 2020

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

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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 Boron Beyond Food Mart 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 Mojave Desert Air Quality Management District (MDAQMD).

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

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

OPERATIONAL-SOURCE EMISSIONS

The project operational-sourced emissions would not exceed applicable regional thresholds of significance established by the MDAQMD. 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.

The project's emissions meet MDAQMD 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 reductions from the removal of existing uses, the net project-related GHG emissions do not exceed the County of San Bernardino GHG Reduction Plan threshold of 3,000 MTCO2e per year or the MDAQMD thresholds of 100,000 MTCO2e per year and 548,000 pounds per year of CO2e. GHG emissions are considered to be less than significant.

Furthermore, as the project's GHG emissions do not exceed the MDAQMD draft screening threshold (based on EO S-3-05), the project would not conflict with the goals of SB-32 or the County of San Bernardino GHG Reduction Plan; therefore, the project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and impacts are considered to be less than significant

1. INTRODUCTION

This section describes the purpose of this air quality, global climate change, 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
- analysis of the conformity of the proposed project with the MDAQMD Attainment Plans
- recommendations for mitigation measures

The County of San Bernardino is the lead agency for this air quality, greenhouse gas, and energy analysis, in accordance with the California Environmental Quality Act 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 Highway 395 and State Route 58 in unincorporated San Bernardino County. The existing uses at the project site include 11,285 square feet of general light industrial uses, one single-family detached residential dwelling unit, an automobile care center with one bay, a gasoline service station with four vehicle fueling positions, and a fast-food restaurant with drive-through.[1] A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The project proposes to demolish and remove the existing uses and develop the approximately 2.82-acre project site (scope of work area) with a 7,250 square foot convenience market with drive-through window and gasoline fuel station with 28 vehicle fueling positions. Figure 2 illustrates the proposed site plan.

PHASING AND TIMING

The proposed project is anticipated for opening in 2021. The project is anticipated to be built in one phase with project construction anticipated to start no sooner than November 2020 and take approximately eight months to complete.

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 MDAQMD considers a sensitive receptor to be residences, schools, daycare centers, playgrounds and medical facilities (Mojave Desert Air Quality Management District 2016).

1 Per the *Previous Land Use Trip Generation Comparison*, provided in Table 3 of the traffic study prepared for the proposed project (Ganddini Group, Inc., 2020).

The nearest sensitive receptor to the project site is the single-family residential dwelling unit located approximately 820 feet (~250 meters) southeast of the project site. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.

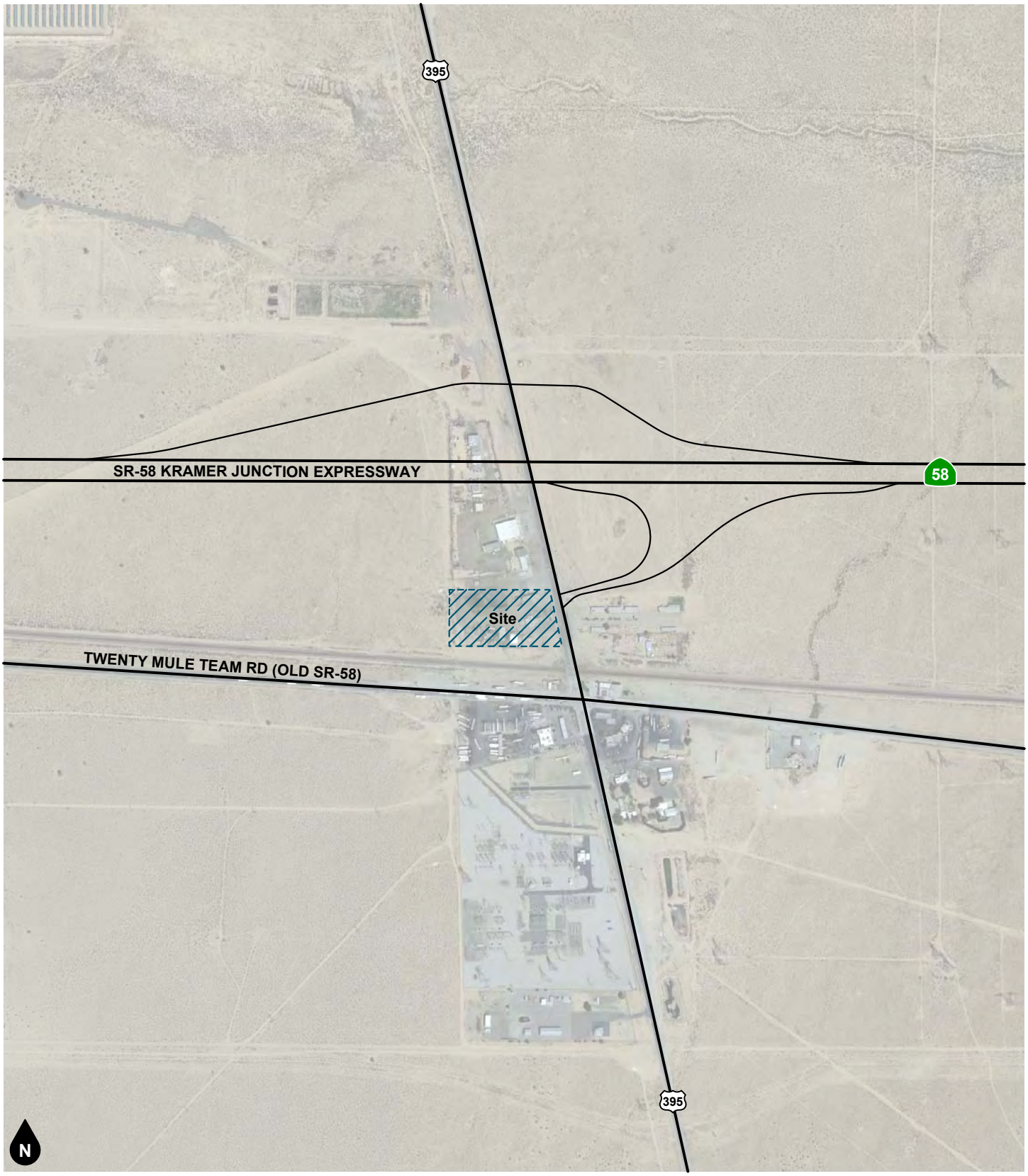

Figure 1
Project Location Map

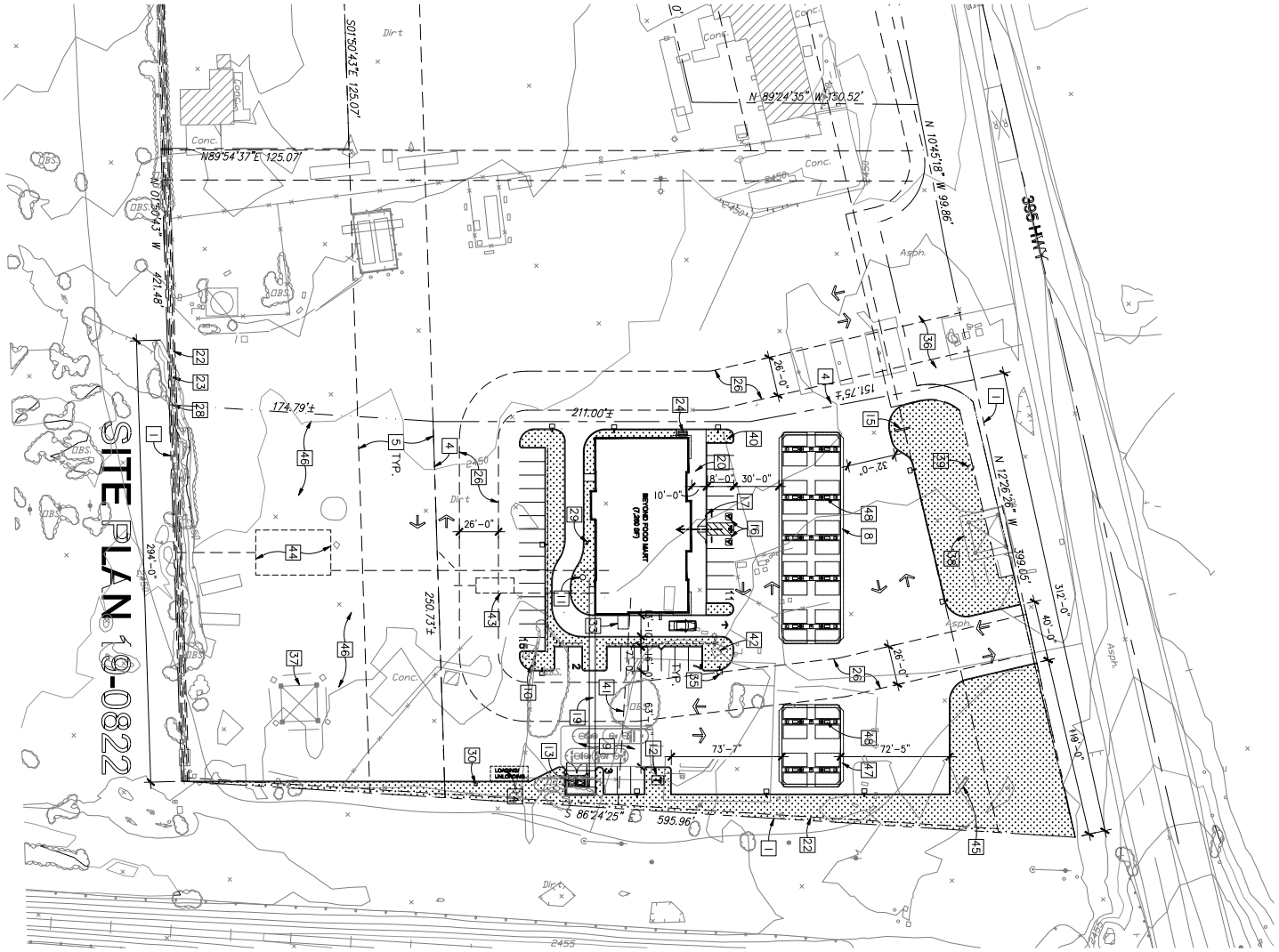

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Figure 2
Site Plan

2. AIR QUALITY ANALYSIS

EXISTING AIR QUALITY CONDITIONS

Local Air Quality

The project site is located within the western portion of San Bernardino County, which is part of the Mojave Desert Air Basin (MDAB). The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses. The Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevada's in the north by the Tehachapi Pass (3,800 foot elevation). The Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 feet). The Mojave Desert is bordered in the southwest by the San Bernardino Mountains, separated from the San Gabriel's by the Cajon Pass (4,200 feet). A lesser channel lies between the San Bernardino Mountains and the Little San Bernardino Mountains (the Morongo Valley).

The Palo Verde Valley portion of the Mojave Desert lies in the low desert, at the eastern end of a series of valleys (notably the Coachella Valley) whose primary channel is the San Gorgonio Pass (2,300 feet) between the San Bernardino and San Jacinto Mountains.

During the summer the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time the reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inches of precipitation). The MDAB is classified as a dry-hot desert climate (BWh), with portions classified as dry-very hot desert (BWhh), to indicate at least three months have maximum average temperatures over 100.4° F.

The temperature and precipitation levels for the Mojave area, closest monitoring station to the project site, are shown below in Table 1. Table 1 shows that July 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	58.1	61.3	66.8	72.7	81.2	90.6	96.8	96.3	89.6	78.7	63.9	57.2
Avg. Min. Temperature	34.1	37.5	41.9	47	55.3	64	69	67.5	60.8	50.7	39.6	33.6
Avg. Total Precipitation (in.)	1.09	1.45	0.93	0.27	0.09	0.03	0.19	0.35	0.23	0.29	0.48	0.76

Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5756

Data from the Mojave, CA station (045756).

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 ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone 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 ozone precursors, the health effects associated with ozone 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 [SO2]) 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 ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of toxic air contaminants 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 toxic air contaminants. The most important of these toxic air contaminants, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to toxic air contaminants can result from emissions from normal operations as well as from accidental releases. Health effects of toxic air contaminants include cancer, birth defects, neurological damage, and death.

Toxic air contaminants 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 toxic air contaminants with varying degrees of toxicity. Sources of toxic air contaminants 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 toxic air contaminants 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 toxic air contaminant 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 toxic air contaminant 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 San Bernardino 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 (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (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 National Ambient Air Quality Standards (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 MDAB has been designated by the EPA as a non-attainment area for ozone (O3) and suspended particulates (PM10). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO2), nitrogen dioxide (NO2) and particulate matter (PM2.5).

State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP). The California Ambient Air Quality Standards (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. It also sets fuel specifications to further reduce vehicular emissions.

The MDAQMD-portion of the Mojave Desert Air Basin (MDAB) has been designated by the CARB as a nonattainment area for ozone, PM10 and PM2.5. Currently, the MDAB is in attainment with the ambient air quality standards for CO, lead, SO_2, NO_2, 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 projects 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 toxic air contaminants. 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 Mojave Desert 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 toxic air contaminants for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of criteria air pollutants and toxic air contaminants, 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 toxic air contaminants 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

Regional Air Quality Planning Framework. The 1976 Lewis Air Quality Management Act established the MDAQMD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state.

The ARB is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for EPA approval. Significant authority for air quality control within them has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

California is divided geographically into air basins for the purpose of managing the air resources of the State on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The State is currently divided into 15 air basins. The proposed project site is located within the Mojave Desert Air Basin (MDAB). The MDAQMD includes the desert portion of the San Bernardino County. The MDAQMD is responsible for controlling emissions primarily from stationary sources within the MDAQMD and also maintains air quality monitoring stations to document historical and current levels of air quality within the District. The MDAQMD is also responsible for developing, updating, and implementing the Ozone Attainment Plan (MDAQMD 2004) which establishes a plan to implement, maintain, and enforce a program of emission control measures to attain and maintain the federal ozone air quality standards. Attainment plans prepared by the various air pollution control districts throughout the state are used to develop the SIP for the State of

California. The proposed project is located within the MDAQMD and, thus, is subject to the rules and regulations of the MDAQMD.

Regional Air Quality Management Plan. The MDAQMD and SCAG are responsible for formulating and implementing the air quality attainment plan (AQAP) for the Basin. Regional AQAPs were adopted in 1991, 1994, and 1997. The following SIP and AQAP are the currently approved plans for the Basin region:

- 1997 SIP for O_3, PM10, and NO_2
- 1995 Mojave Desert Planning Area Federal PM10 Attainment Plan; no formal action by the EPA

The MDAQMD completed the MDAQMD 2004 Ozone Attainment Plan (State and federal) in April 2004, which has been approved by the EPA.

MDAQMD. The MDAQMD is downwind of the Los Angeles basin and the San Joaquin Valley. Prevailing winds transport ozone and ozone precursors from both regions into and through the MDAB during the summer ozone season. These transport couplings have been officially recognized by the CARB. Local MDAQMD emissions contribute to exceedances of both the NAAQS and CAAQS for ozone, but photochemical ozone modeling conducted by the MDAQMD and CARB indicates that the MDAB would be in attainment of both standards without the influence of this transported air pollution from upwind regions. Therefore, emissions reductions in the upwind area are critical to the attainment demonstration.

The following includes, but is not limited to, the MDAQMD rules that are applicable to the proposed project:

- Rule 201 (Permit to Construct) - requires written authorization to build, erect, install, alter, or replace any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants. With respect to the proposed project, this rule would apply to any stationary equipment that is not otherwise exempt from this rule as an insignificant source of air pollutants (see Rule 219).

- Rule 203 (Permit to Operate) - requires written authorization to operate any equipment, the use of which may cause the issuance of air pollutants, or the use of which may reduce or control the issuance of air contaminants. With respect to the proposed project, this rule would apply to any stationary equipment that is not otherwise exempt from this rule as an insignificant source of air pollutants (see Rule 219).

- Rule 219 (Equipment Not Requiring A Written Permit Pursuant to Regulation II) - specifies stationary sources that the MDAQMD considers to be insignificant sources of air pollutants that are exempt from Rules 201 and 202. With respect to the proposed project, the following sources would be exempt from permit requirements:

    - Comfort air conditioning or ventilating systems which are not designed or used to remove air contaminants generated by, or released from, specific equipment units;
    - Space heaters;
    - Equipment used exclusively for steam cleaning;

- Rule 402 (Nuisance) - This rule specifies that a person may 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 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.

- Rule 403.2 (Fugitive Dust Control for the Mojave Desert Planning Area) - This rule requires owners or operators of a construction or demolition fugitive dust source to implement the fugitive dust control measures listed in Rule 403.2. These measures include periodic watering for short-term stabilization of

disturbed surface area to minimize visible dust emissions, stabilization of graded surfaces if no development is planned within 30 days, reducing non-essential earth moving activity under high wind conditions, and more. In addition, for sites over 100 acres such as the proposed project, the control measures in Rule 403.2 must also be implemented. The additional control measures include preparing and submitting a dust control plan to the MDAQMD prior to commencing earth-moving activities. The dust control plan must describe all applicable dust control measures that will be implemented at the project site. Other additional control measures to minimize visible fugitive dust for sites over 100 acres include stabilizing access routes, maintaining natural topography to the extent possible, and constructing paved roads and parking lots first where feasible.

- Rule 1113 (Architectural Coatings) - This rule requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

- Rule 1160 (Internal Combustion Engines) - This rule establishes limits for VOC, NOx, and CO emissions associated with stationary internal combustion engines. However, the provisions of the rule do not apply to the following engines:

    - All internal combustion engines rated at less than 500 brake horsepower;
    - All internal combustion engines operated less than 100 hours within any continuous four consecutive calendar quarter period; and
    - Emergency internal combustion engines.

Regulation XIII (New Source Review) - For new and modified stationary sources subject to permitting requirements (see Rule 201), this series of rules prescribes the use of Best Available Control Technology and the provision of emission offsets (i.e., mitigation) for equipment whose emissions exceed specified thresholds. The applicability of these requirements would be determined upon submittal of an application for permit to construct under Rule 201.

To assist in the establishment of a quantitative determination of what is considered "significant," the MDAQMD has published significance thresholds that apply to new projects constructed or operated within the MDAQMD.

Thresholds. The MDAQMD recommends that lead agencies apply these thresholds in determining whether a proposed project would result in a significant air quality impact. If the lead agency finds that a proposed project has the potential to exceed these air pollution thresholds, the project would be considered significant. The MDAQMD has defined thresholds for NOx, VOC, SOx, CO, and PM10, hereinafter referred to as "criteria" pollutants, and for health risk in terms of cancer and non-cancer risk (MDAQMD 2009). Any project is significant if it:

1. Generates total emissions (direct and indirect) in excess of the thresholds given in Table 5; and/or

2. Generates a violation of any ambient air quality standard when added to the local background*; and/or

3. Does not conform with the applicable attainment or maintenance plan(s)*[2]; and/or

[2] A project is deemed to not exceed this threshold, and hence not be significant, if it is consistent with the existing land use plan. Zoning changes, specific plans, general plan amendments and similar land use plan changes which do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to not exceed this threshold.

4. Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in one million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to one*.

*These significance thresholds are not applicable to all projects. In general, the emissions comparison (criteria number 1) is sufficient.

Air Quality Guidance Documents

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 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.

Local – County of San Bernardino

Local jurisdictions, such as the County of San Bernardino, 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 and MDAQMD Attainment Plans. 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.

In accordance with the CEQA requirements, the County does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the County and region will meet federal and state standards. Instead, the County relies on the expertise of the SCAQMD and MDAQMD and utilizes the SCAQMD CEQA Handbook and MDAQMD California Environmental Quality Act (CEQA) And Federal Conformity Guidelines (depending on the location/jurisdiction of the project) as guidance documents for the environmental review of plans and development proposals within its jurisdiction.

The County of San Bernardino General Plan contains the following air quality-related goals and policies that are applicable to the proposed project:

Goal CO 4: The County will ensure good air quality for its residents, businesses, and visitors to reduce impacts on human health and the economy.

CO 4.1 Because developments can add to the wind hazard (due to increased dust, the removal of wind breaks, and other factors), the County will require either as mitigation measures in the appropriate environmental analysis required by the County for the development proposal or as conditions of approval if no environmental document is required, that developments in areas identified as susceptible to wind hazards to address site-specific analysis of:

a. Grading restrictions and/or controls on the basis of soil types, topography or season.
b. Landscaping methods, plant varieties, and scheduling to maximize successful revegetation.
c. Dust-control measures during grading, heavy truck travel, and other dust generating activities.

CO 4.2 Coordinate air quality improvement technologies with the South Coast Air Quality Management District (SCAQMD) and the Mojave Desert Air Quality Management District (MDAQMD) to improve air quality through reductions in pollutants from the region.

CO 4.4 Because congestion resulting from growth is expected to result in a significant increase in the air quality degradation, the County may manage growth by insuring the timely provision of infrastructure to serve new development.

Programs

1. Consistent with the land use designations in the Land Use Policy Map (see the Land Use Element) that will improve growth management at a sub-regional level in relation to major activity centers, review new development to encourage new intensified development around transit nodes and along transit corridors.

2. Locate and design new development in a manner that will minimize direct and indirect emission of air contaminants through such means as:

    a. Promoting mixed-use development to reduce the length and frequency of vehicle trips;
    b. Providing for increased intensity of development along existing and proposed transit corridors; and
    c. Providing for the location of ancillary employee services (including but not limited to child care, restaurants, banking facilities, convenience markets) at major employment centers for the purpose of reducing midday vehicle trips.
    d. The County shall comply, to the extent feasible, with the recommendations on siting new sensitive land uses, as recommended in California Air Resources Board's Air Quality and Land Use Handbook: A Community Health Perspective, which includes the following:
    Notable siting recommendations include avoiding siting new sensitive land uses within:

        - 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day;
        - 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration

units per day, or where transport refrigeration units exceed 300 hours per week);
- 1,000 feet of a chrome plater;
- 300 feet of any dry cleaning operation; and 300 feet of a large gas station (defined as a facility with a through put of 3.6 million gallons per year or greater); a 50 foot separation is recommended for typical gas dispensing facilities.

3. Incorporate phasing policies and requirements in the General Plan and development plans to achieve timely provision of infrastructure (particularly transportation facilities) to serve development through:

    a. Tying growth to Level of Service (LOS) standards; and
    b. Using phasing areas to manage growth.

County of San Bernardino Development Code

83.01.040 - Air Quality.

(a) Equipment permit and Inspection Requirements. Required permits shall be obtained from either the Mojave Air Pollution Management District or the South Coast Air Quality Management District depending on the location of the subject property and equipment for equipment that may cause air pollution. Before the equipment may be constructed, plans and specifications shall be submitted to the appropriate District for approval.

(b) Permits from Air Quality Management Districts. Permits shall be obtained from either the Mojave Air Pollution Management District or the South Coast Air Quality Management District depending on the location of the subject property and equipment. If requested by the Director, uses, activities, or processes that require Air Quality Management District approval to operate shall file a copy of the permit with the Department within 30 days of its approval.

(c) Diesel Exhaust Emissions Control Measures. The following emissions control measures shall apply to all discretionary land use projects approved by the County on or after January 15, 2009:

1. On-Road Diesel Vehicles. On-road diesel vehicles are regulated by the State of California Air Resources Board.

2. Off-Road Diesel Vehicle/Equipment Operations. All business establishments and contractors that use off-road diesel vehicle/equipment as part of their normal business operations shall adhere to the following measures during their operations in order to reduce diesel particulate matter emissions from diesel fueled engines:

    a. Off-road vehicles/equipment shall not be left idling on site for periods in excess of five minutes. The idling limit does not apply to:

        i. Idling when queuing,
        ii. Idling to verify that the vehicle is in safe operating condition,
        iii. Idling for testing, servicing, repairing, or diagnostic purposes,
        iv. Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane),
        v. Idling required to bring the machine system to operating temperature, and
        vi. Idling necessary to ensure safe operation of the vehicle

b. Use reformulated ultra-low sulfur diesel fuel in equipment and use equipment certified by the U.S. Environmental Protection Agency (EPA) or that pre-dates EPA regulations.
c. Maintain engines in good working order to reduce emissions.
d. Signs shall be posted requiring vehicle drivers to turn off engines when parked.
e. Any requirements or standards subsequently adopted by the South Coast Air Quality Management District, the Mojave Air Quality Management District, or the California Air Resources Board.
f. Provide temporary traffic control during all phases of construction.
g. Onsite electrical power connections shall be provided for electric construction tools to eliminate the need for diesel-powered electric generators, where feasible.
h. Maintain construction equipment engines in good working order to reduce emissions. The developer shall have each contractor certify that all construction equipment is properly serviced and maintained in good operating condition.
i. Contractors shall use ultra-low sulfur diesel fuel for stationary construction equipment as required by Air Quality Management District (AQMD) Rules 431.1 and 431.2 to reduce the release of undesirable emissions.
j. Substitute electric and gasoline-powered equipment for diesel-powered equipment, where feasible.

3. Project Design. Distribution centers, warehouses, truck stops and other facilities with loading docks where diesel trucks may reside overnight or for periods in excess of three hours shall be designed to enable any vehicle using these facilities to utilize on-site electrical connections to power the heating and air conditioning of the cabs of such trucks, instead of operating the diesel engines and diesel refrigeration units of such trucks and trailers for these purposes. This requirement shall also apply to Recreational Vehicle Parks (as defined in Section 810.01.200(k) of this title) and other development projects where diesel engines may reasonably be expected to operate on other than an occasional basis.

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
Attainment Status of MDAQMD[1]-Portion of Mojave Desert Air Basin[2]

Pollutant	Federal Designation	State Designation
1-Hour Ozone	--	Nonattainment
8-Hour Ozone	Nonattainment	Nonattainment
CO	Unclassified/Attainment	Attainment
PM10	Nonattainment	Nonattainment
PM2.5	Unclassified/Attainment	Nonattainment
Lead	Unclassified/Attainment	Attainment
SO_2	Unclassified/Attainment	Attainment
NO_2	Unclassified/Attainment	Attainment

Notes:

(1) MDAQMD = Mojave Desert Air Quality Management District

(2) Source: California Air Resources Board (2019) (https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations) and MDAQMD (https://www.mdaqmd.ca.gov/air-quality/mdaqmd-attaiment-status).

MONITORED AIR QUALITY

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

The MDAQMD maintains an air-monitoring network that measures levels of several air pollutants throughout the air basin. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the project site have been used. The nearest air monitoring station to the project site is the Barstow monitoring station (Barstow Station) located approximately 30.06 miles southwest of the project site at 200 E. Buena Vista, Barstow. The next nearest monitoring station to the project site is the Victorville-14306 Park Avenue monitoring station (Victorville Station) located approximately 35.46 miles southeast of the project site at 14306 Park Avenue, Victorville. Table 5 presents the monitored pollutant levels from the Barstow and Victorville Stations. However, it should be noted that due to the air monitoring station distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site.

The monitoring data presented in Table 4 shows that ozone and particulate matter (PM10 and PM2.5) are the air pollutants of primary concern in the project area, which are detailed below.

Ozone

During the 2016 to 2018 monitoring period, the State 1-hour concentration standard for ozone was not exceeded in 2016 and 2017 and was exceeded for only five days in 2018 at the Barstow Station. The State 8-hour ozone standard has been exceeded between 10 and 51 days each year over the past three years at the Barstow Station. The Federal 8-hour ozone standard was exceeded between nine and 49 days each year over the past three years at the Barstow Station.

Carbon Monoxide

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

Nitrogen Dioxide

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

Particulate Matter

There was insufficient data over the last three years for the State 24-hour concentration standards for PM10 at the Barstow Station. Over the past three years, the Federal 24-hour standards for PM10 were exceeded between one and two days each year during 2016 and 2017 and were not exceeded in 2018 at the Barstow Station.

Over the past three years, the Federal 24 hour standard for PM2.5 were exceeded for only one day in 2016 at the Victorville 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		
		2016	2017	2018
Ozone:	Maximum 1-Hour Concentration (ppm)	0.089	0.084	0.126
	Days > CAAQS (0.09 ppm)	0	0	5
	Maximum 8-Hour Concentration (ppm)	0.084	0.077	0.105
	Days > NAAQS (0.070 ppm)	25	9	49
	Days > CAAQS (0.070 ppm)	27	10	51
Carbon Monoxide:	Maximum 8-Hour Concentration (ppm)	*	*	*
	Days > CAAQS (9 ppm)	0	0	0
	Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:	Maximum 1-Hour Concentration (ppm)	0.067	0.061	0.059
	Days > CAAQS (0.18 ppm)	0	0	0
Inhalable Particulates (PM10):	Maximum 24-Hour Concentration (µg/m^3)	246.9	206.9	1013.0
	Days > NAAQS (150 µg/m3)	2	1	0
	Days > CAAQS (50 µg/m3)	*	*	*
	Annual Average (µg/m3)	27.1	26.4	27.3
Ultra-Fine Particulates (PM2.5):[2]	Maximum 24-Hour Concentration (µg/m3)	41.5	29.3	33.2
	Days > NAAQS (35 µg/m3)	1	0	0
	Annual Average (µg/m3)	7.4	8.7	7.9

Notes:
Source: http://www.arb.ca.gov/adam/topfour/topfour1.php. Data from the Barstow 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 Victorville - 14306 Park Avenue 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 MDAQMD in their CEQA Guidelines.[3]

Regional Air Quality

According to the MDAQMD, a project is non-conforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable MDAQMD rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and it is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan).

Violation of Air Quality Standards or Substantial Contribution to Air Quality Violations. The MDAQMD currently recommends that projects with construction-related and/or operational emissions that exceed any of the following emissions thresholds should be considered significant:

- 25 tons per year or 137 pounds per day pounds per day of VOC
- 25 tons per year or 137 pounds per day of NOx
- 100 tons per year or 548 pounds per day of CO
- 25 tons per year or 137 pounds per day of SOx
- 15 tons per year or 82 pounds per day of PM10
- 15 tons per year or 82 pounds per day of PM2.5

For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the MDAQMD significance thresholds identified above and in Table 5.

Toxic Air Contaminants

According to the MDAQMD CEQA Guidelines, any project that has the potential to expose the public to toxic air contaminants in excess of the following thresholds would be considered to have a significant air quality impact:

[3] MDAQMD. California Environmental Quality Act (CEQA) and Federal Conformity Guidelines, August 2016.

- If the Maximum Incremental Cancer Risk is 10 in one million or greater; or
- Toxic air contaminants from the proposed project would result in a Hazard Index increase of 1 or greater.

Residences, schools, daycare centers, playgrounds and medical facilities are considered sensitive receptor land uses. The following project types proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use must be evaluated using significance threshold criteria number 4 (refer to the significance threshold discussion in the Regulatory Section above).

Table 5
MDAQMD Air Quality Significance Thresholds

Pollutant	Annual Thresholds (tons/year)	Daily Thresholds (lbs/day)
NOx	25	137
VOC	25	137
PM10	15	82
PM2.5	15	82
SOx	25	137
CO	100	548
Lead	0.6	3
Greenhouse Gases (CO2e)	100,000	548,000

Source: http://www.mdaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=2910

SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the proposed project would have the potential to generate air emissions, toxic air contaminant 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: demolition of approximately 2,200 square feet of existing commercial uses; site preparation of approximately 40 percent of the project area (~1.13 acres) to remove existing asphalt surfaces and hardscape; grading of approximately 2.82 acres; construction of a 7,250 square foot convenience market with drive-through and 28 vehicle fueling positions and landscaping of approximately 23,824 square feet; paving of approximately 2.18 acres (includes a parking lot with 38 spaces with 28 of the parking spaces located under the gas station canopy); and application of architectural coatings. See Appendix B for more details.

The proposed project is anticipated to start construction no sooner than November 2020 and take approximately eight months to complete. The project will be operational in 2021.

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.

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 MDAQMD portion of San Bernardino 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 MDAQMD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emission calculations are provided in Appendix B.

Per MDAQMD Rule 1113 as amended on April 23, 2012, the architectural coatings that would be applied after January 1, 2013 will be limited to an average of 150 grams per liter or less.

The phases of the construction activities which have been analyzed below for each phase are: (1) demolition, (2) site preparation, (3) grading, (4) construction, (5) paving, and (6) application of architectural coatings. Site preparation was needed over approximately 40 percent of the site to remove existing asphalt surfaces/hardscape only. 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 analyzed criteria pollutants would exceed the MDAQMD daily emissions thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Construction-Related Toxic Air Contaminant Impacts

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to MDAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of "individual cancer risk". "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 30-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 30 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

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. Therefore, impacts from TACs during construction would be less than significant.

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
Demolition	On-Site[1]	2.13	20.95	14.66	0.02	1.20	1.08
	Off-Site[2]	0.08	0.18	0.68	0.00	0.18	0.05
	Subtotal	2.21	21.12	15.34	0.03	1.37	1.13
Site Preparation	On-Site[1]	0.18	1.84	1.99	0.00	0.27	0.12
	Off-Site[2]	0.05	0.03	0.41	0.00	0.10	0.03
	Subtotal	0.23	1.88	2.40	0.00	0.38	0.15
Grading	On-Site[1]	1.92	21.34	9.94	0.02	3.55	2.22
	Off-Site[2]	0.06	0.04	0.51	0.00	0.13	0.03
	Subtotal	1.98	21.38	10.44	0.02	3.67	2.26
Building Construction	On-Site[1]	2.91	21.72	19.41	0.03	1.22	1.17
	Off-Site[2]	0.38	2.39	3.06	0.01	0.81	0.23
	Subtotal	3.29	24.11	22.47	0.04	2.03	1.39
Paving	On-Site[1]	1.63	10.65	11.78	0.02	0.58	0.54
	Off-Site[2]	0.08	0.06	0.70	0.00	0.19	0.05
	Subtotal	1.72	10.70	12.48	0.02	0.78	0.59
Architectural Coating	On-Site[1]	25.28	1.53	1.82	0.00	0.09	0.09
	Off-Site[2]	0.06	0.04	0.47	0.00	0.13	0.03
	Subtotal	25.34	1.56	2.28	0.00	0.22	0.13
Total for overlapping phases[3]		30.35	36.38	37.23	0.07	3.02	2.11
MDAQMD Thresholds		137	137	548	137	82	82
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 demolition, site prepartion, and grading PM-10 and PM-2.5 emissions show mitigated values for fugitive dust for compliance with MDAQMD Rule 403.

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

(3) 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 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 air quality impacts created by vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the Boron Beyond Food Mart Traffic Impact Analysis (TIA) (prepared by Ganddini Group, Inc., 2020), for year 2021 into the CalEEMod Model. The TIA found that the proposed project will generate approximately 5,417 total trips (includes pass-by trip reduction) and 4,060 net total trips with the additional reduction of existing uses. A trip generation rate of 193.46 trips per fuel pump per weekday was used for the 28 vehicle fueling position gasoline service station with convenience market, which took into consideration the approximately 10.8 percent pass-by reduction[4]. The TIA also found that the existing uses to be demolished include a general light industrial use that generates 59 total weekday trips with a weekday trip generation rate of 4.96 trips per thousand square foot per day, a single-family detached residential dwelling unit that generates approximately 9 total weekday trips with a weekday trip generation rate of 9.44 trips per dwelling unit, an automobile care center with one bay that generates approximately 18 total weekday trips with a weekday trip generation rate of 17.9 trips per bay (converted to 9.94 trips per thousand square foot as there is no per bay provided in CalEEMod for the Automobile Care Center land use), a gasoline/service station with four vehicle fueling pumps that generates approximately 640 total daily weekday trips with a weekday trip generation rate of 160 trips per fuel pump (includes a pass-by reduction), and a 1,450 square foot fast-food restaurant with drive through that generates approximately 631 total daily weekday trips with a weekday trip generation rate of 435.17 trips per thousand square foot (includes a pass-by reduction). The 10th Edition ITE trip generation manual was utilized for weekend, Saturday and Sunday, trip generation rates as weekend rates were not provided in the TIA for any of the above mentioned land uses. The daily operations emissions printouts from the CalEEMod model are provided in Appendix B, the annual emissions are provided in Appendix C.

The CalEEMod model has standardized emission rates for electrical usage, natural gas appliances, landscape maintenance equipment, and architectural coatings. The program then multiplies these rates by the number of square feet proposed for the project being analyzed.

Per MDAQMD Rule 1113 as amended on April 23, 2012, the architectural coatings that would be applied after January 1, 2014 will be limited to an average of 150 grams per liter or less.

The annual VOC, NOx, CO, SO_x, PM10, and PM2.5 emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table 7. The data provided in Table 7 shows that even without subtracting the emissions from existing uses (which will be demolished), none of the analyzed criteria pollutants would exceed the above mentioned MDAQMD regional emissions thresholds. Emissions are even lower once those existing uses are subtracted. Therefore, operation of the proposed project would not create a significant regional impact from operational emissions.

[4] Pass-by and internal capture reductions were incorporated into the trip generation rates as an error in CalEEMod does not provide credit for reduction in trips if only the pass-by and/or internal capture percentages are changed (modified) within the model.

Operations-Related Toxic Air Contaminant Impacts

MDAQMD recommends avoiding siting new sensitive land uses such as residences, schools, daycare centers, playgrounds, or medical facilities within 300 feet of a gasoline dispensing facility. The proposed project involves the construction of a gasoline service station with other amenities (fast food etc.).

The nearest existing sensitive receptor to the project site is the single-family detached residential dwelling unit located approximately 820 feet (~250 meters) southeast of the project site.

Therefore, as the closest receptor to the gasoline dispensing facility is well over 300 feet from the project boundary, a project-specific health risk assessment is not required or warranted. Impacts to nearby sensitive receptors are considered to be less than significant.

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, gasoline fueling stations, and trash storage areas. As the project is that of a commercial use and the nearest sensitive receptors are located at least 820 feet from the project boundaries, no significant impact related to odors are anticipated to occur during the on-going operations of the proposed project.

Table 7
Regional Operational Pollutant Emissions

Activity	Pollutant Emissions (tons/year)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Area Sources[1]	0.05	0.00	0.00	0.00	0.00	0.00
Energy Usage[2]	0.00	0.01	0.01	0.00	0.00	0.00
Mobile Sources[3]	1.41	10.14	12.55	0.04	2.86	0.79
Subtotal Emissions	**1.46**	**10.14**	**12.55**	**0.04**	**2.86**	**0.79**
-Existing uses to be removed	-0.58	-2.99	-4.10	0.01	-0.89	-0.26
Total Emissions	**0.89**	**7.15**	**8.45**	**0.06**	**1.97**	**0.53**
MDAQMD Annual Thresholds	25	25	100	25	15	15
Exceeds Threshold?	No	No	No	No	No	No

Notes:
Source: CalEEMod Version 2016.3.2. Annual Emissions (see Appendic C for annual 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.

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.

Project Specific Impacts

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

Project operations would generate emissions of NOx, ROG, CO, PM10, and PM2.5, which would not exceed the MDAQMD regional thresholds and would not be expected to result in ground level concentrations that exceed the NAAQS or CAAQS. Therefore, 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, the project would result in a less than significant cumulative impact for operational emissions.

Air Quality Compliance

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). According to the MDAQMD, a project is non-conforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan.

A project is conforming if it complies with all applicable District rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). Conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast. An example of a non-conforming project would be one that increases the gross number of dwelling units, increases the number of trips, and/or increases the overall vehicle miles traveled in an affected area (relative to the applicable land use plan). The "one map approach" is employed by the County of San Bernardino, as it permits the use of a single map showing both General Plan land use designations and zoning classifications. The one-map approach assures that there will always be land use consistency between the County's General Plan and its Zoning Code.

The project site is located within unincorporated San Bernardino County. The proposed project includes a convenience market with drive-through and gasoline service stations and per the County's Land Use Zoning District map – Kramer Junction EH04A, the current land use zoning district is Rural Commercial (CR). As shown by the results of this air analysis, the project's emissions do not exceed any MDAQMD thresholds during either short-term construction or long-term operation of the project. Therefore, as the project is a commercial use, the proposed project is not anticipated to exceed the Attainment Plan assumptions for the project site.

Based on the above, the proposed project would not conflict with implementation of the MDAQMD Attainment Plans, impacts are considered to be less than significant.

3. GLOBAL CLIMATE CHANGE ANALYSIS

EXISTING GREENHOUSE GAS ENVIRONMENT

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and nitrous oxide (NOx) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases 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 8. As shown in Table 8, the global warming potential of GHGs ranges from 1 to 22,800.

Table 8
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 (NO)	114	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 greenhouse gas 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. However, the U.S. cannot technically withdraw from the Agreement until November 4, 2020.

Federal

The United States Environmental Protection Agency (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

greenhouse gases, 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 greenhouse gases 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.[5]

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 Greenhouse Gas 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)[6] 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.[7] In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

In August 2018, the USEPA and NHTSA proposed the Safer Affordable Fuel-Efficient Vehicles Rule that would, if adopted, 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. The proposal, if adopted, would also exclude CO2- equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[8]

State of California

California Air Resources Board

CARB, 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, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards [CAAQS]), compiles emission inventories, develops suggested control measures, and provides oversight of

[5] 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.
[6] 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.
[7] 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.
[8] 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.

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

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."[9] 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

[9] 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 Southern California Association of Governments (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.

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 ari 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 regulation 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 regards 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

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

The Energy Commission adopted 2008 Standards on April 23, 2008, and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. 2013 Standards were approved and were effective 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 greenhouse gas emissions.

California Green Building Standards

2016 CALGreen Code: During the 2016-2017 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2015 Triennial Code Adoption Cycle. HCD adopted three new definitions related to electric vehicle charging regulations. These definitions provided clarity to the code user as to the differences between an electric vehicle charging space and an electric vehicle charging station. HCD replaced the term "electric vehicle charging stations" with "electric vehicle charging spaces" since

the term "electric vehicle charging space" better describes a space available for future installation of electric vehicle supply equipment, but with no electric vehicle charger installed.

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 United States Environmental Protection Agency 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 United States Environmental Protection Agency'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 regards 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 regards 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 regards to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regards 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 requires that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.[10]

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."11 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 2016 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2017.

Regional – Mojave Desert Air Quality Management District

The project is within the Mojave Desert Air Basin, which is under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD).

As shown in Table 5, the MDAQMD has identified thresholds of 100,000 tons per year or 548,000 pounds per day of CO2e emissions for individual projects.

Local – County of San Bernardino

The County of San Bernardino adopted its "Greenhouse Gas Emissions Reduction Plan" in December 2011. The purpose of the GHG Reduction Plan is to reduce the County's internal and external GHG emissions by 15 percent below current (2011) levels by year 2020. The GHG Reduction Plan includes a two-tiered development review procedure to determine if a project could result in a significant impact related greenhouse gas emissions or otherwise comply with the Plan pursuant to Section 15183.5 of the state CEQA Guidelines.

The initial screening procedure is to determine if a project will emit 3,000 metric tons of carbon dioxide equivalents (MTCO2e) per year or more. Projects that do not exceed this threshold require no further climate change analysis. Projects exceeding this threshold must meet a minimum 31 percent emissions reduction in

[10] 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
[11] California Building Standards Commission, 2010 California Green Building Standards Code, (2010).

order to garner a less than significant determination. This can be met by either (1) achieving 100 points from a menu of mitigation options provided in the GHG Plan or (2) quantifying proposed reduction measures. Projects failing to meet the 31 percent reduction threshold would have a potentially significant impact related to climate change and greenhouse gas emissions.

In addition, the County of San Bernardino General Plan contains the following greenhouse gas related policies and programs that are applicable to the proposed project

CO 4.5 Reduce emissions through reduced energy consumption.

Programs

1. Implement programs to phase in energy conservation improvements through the annual budget process.

CO 4.6 Provide incentives such as preferential parking for alternative-fuel vehicles (e.g., CNG or hydrogen).

CO 4.10 Support the development of alternative fuel infrastructure that is publicly accessible.

CO 4.12 Provide incentives to promote siting or use of clean air technologies (e.g., fuel cell technologies, renewable energy sources, UV coatings, and hydrogen fuel).

CO 4.13 Reduce Greenhouse Gas (GHG) emissions within the County boundaries.

Programs

1. Emission Inventories. The County will prepare GHG emissions inventories including emissions produced by: (1) the County's operational activities, services and facilities, over which the County has direct responsibility and control, and (2) private industry and development, that is located within the area subject to the County's discretionary land use authority.

    a) Establish an inventory of existing GHG emissions.
    b) Establish a projected inventory for year 2020.

2 GHG Emissions Reduction Plan. The County will adopt a GHG Emissions Reduction Plan that includes:

    a) Measures to reduce GHG emissions attributable to the County's operational activities, services and facilities, over which the County has direct responsibility and control; and,
    b) Measures to reduce GHG emissions produced by private industry and development that is located within the area subject to the County's discretionary land use authority and ministerial building permit authority; and,
    c) Implementation and monitoring procedures to provide periodic review of the plan's progress and allow for adjustments overtime to ensure fulfillment of the plan's objectives.

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[12].

Thresholds of Significance for this Project

The GHG Reduction Plan threshold of 3,000 MTCO2e per year and the MDAQMD thresholds of 100,000 MTCO2e per year and 548,000 pounds per year of CO2e are used as thresholds of significance in this analysis.

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 2021 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.

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. AB 341 requires that 75 percent of waste be diverted from landfills by 2020, reductions for this are shown in the mitigated CalEEMod output values. No other 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.

[12] 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.

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 using the methodology as detailed above in Section 2 of this report.

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 9 and the CalEEMod Model run for the proposed project is provided in Appendix C. Table 9 shows that the subtotal for the proposed project would result in annual emissions of 4,084.44 MT CO2e per year (without the addition of amortized construction emissions which would add an additional 9.37 MT CO2e per year; see Appendix C CalEEMod Annual Output for details). Furthermore, as shown in Table 9, the project's total net emissions (once the operational emissions associated with the existing uses are deducted) would be 2,762.90 MTCO2e per year (without the addition of amortized construction emissions). This level of emissions (2,762.9 MT plus 9.37 MT gives a total of 2,772.27 MT CO2e) does not exceed the screening threshold of 3,000 metric tons per year of CO2e. As shown in Table 9, the project's total GHG emissions also do not exceed the MDAQMD annual threshold of 100,000 MTCO2e or the daily threshold of 548,000 pounds of CO2e.

According to the San Bernardino County thresholds of significance established above, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations would exceed 3,000 metric tons per year of CO2e. Therefore, as the project's total net emissions do not exceed 3,000 metric tons per year of CO2e, operation of the proposed project would not create a significant cumulative impact to global climate change.

As mentioned above, the project is subject to the Performance Standards outlined in the County of San Bernardino Greenhouse Gas Emissions Reduction Plan and the requirements of the California Green Building Standards Code. The Performance Standards for commercial and industrial projects are included in Appendix C.

Table 9
Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)						(lbds/day)
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e	CO2e
Area Sources[1]	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Energy Usage[2]	0.00	11.95	11.95	0.00	0.00	12.01	39.49
Mobile Sources[3]	0.00	4,054.65	4,054.65	0.29	0.00	4,061.98	26,833.90
Waste[4]	3.06	0.00	3.06	0.18	0.00	7.59	-
Water[5]	0.12	2.35	2.47	0.01	0.00	2.86	-
Construction[6]	0.00	9.33	9.33	0.00	0.00	9.37	337.55
Subtotal Emissions	3.18	4,078.29	4,081.47	0.49	0.00	4,084.44	26,873.40
-Existing uses to be removed	-10.58	-1,292.39	-1,302.97	-0.70	0.00	-1,321.54	-9,833.01
Total Net Emissions	-7.40	2,785.90	2,778.50	-0.21	0.00	2,762.90	17,040.39
MDAQMD GHG Thresholds						100,000.00	548,000
County of San Bernardino GHG Emissions Reduction Plan Threshold						**3,000**	-
Exceeds Threshold?						**No**	No

Notes:
Source: CalEEMod Version 2016.3.2 for Opening Year 2021.

(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 greenhouse gases.

According to the *County of San Bernardino Greenhouse Gas Emissions Reduction Plan*, "all development projects, including those otherwise determined to be exempt from CEQA will be subject to applicable Development Code provisions, including the GHG performance standards, and state requirements, such as the California Building Code requirements for energy efficiency. With the application of the GHG performance standards, projects that are exempt from CEQA and small projects that do not exceed 3,000 MTCO2e per year will be considered to be consistent with the Plan and determined to have a less than significant individual and cumulative impact for GHG emissions." The Reduction Plan also states that "the 3,000 MTCO2e per year value was chosen as the medial value and is used in defining small projects that must include the Performance Standards as described in Attachment B (of the *County of San Bernardino Greenhouse Gas Emissions Reduction Plan*), but do not need to use the Screening Tables or alternative GHG mitigation analysis described in Attachment D (of the *County of San Bernardino Greenhouse Gas Emissions Reduction Plan*)."

The project's total net operational GHG emissions, (with reduction of the operational emissions associated with the existing uses), do not exceed the County's screening threshold of 3,000 MTCO2E per year. Therefore, the project does not need to accrue points using the screening tables and is consistent with the GHG Plan pursuant to Section 15183.5 of the State CEQA Guidelines. As mentioned above, the project is expected to comply with the performance standards for commercial uses as detailed in the *County of San Bernardino Greenhouse Gas Emissions Reduction Plan* (see Appendix C for details on the performance standards for commercial projects). The proposed project will not result in substantial emissions of greenhouse gases and will not conflict with the Green County initiatives.

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."[13] 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 San Bernardino Greenhouse Gas Emissions Reduction Plan's initial screening procedure is to determine if a project will emit 3,000 metric tons of carbon dioxide equivalents (MTCO2E) per year or more. Projects that do not exceed this threshold require no further climate change analysis. Therefore, consistent

[13] 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).

with CEQA Guidelines Section 15064h(3),[14] 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.

As discussed in the Consistency With Applicable Greenhouse Gas Reduction Plans and Policies section above, the project is consistent with the goals and objectives of the County of San Bernardino Greenhouse Gas Emissions Reduction Plan. Therefore, the project's incremental contribution to greenhouse gas emissions and their effects on climate change would not be cumulatively considerable.

[14] 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;[15]
- Approximately 2,110,829 million cubic feet of natural gas per year[16]; and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015)[17]

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.[18]

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 10.

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[19].

[15] California Energy Commission. Energy Almanac. Total Electric Generation. [Online] June 24, 2019. http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html.
[16] 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.
[17] California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] April 19, 2018. https://www.energy.ca.gov/assessments/
[18] 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
[19] 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, 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.[20] 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.[21]

Table 11 identifies SCE's specific proportional shares of electricity sources in 2017. As shown in Table 11, the 2017 SCE Power Mix has renewable energy at 29 percent of the overall energy resources, of which biomass and waste is at 2 percent, geothermal is at 4 percent, small hydroelectric is at 3 percent, solar energy is at 10 percent, and wind power is at 10 percent; other energy sources include coal at 4 percent, large hydroelectric at 15 percent, natural gas at 34 percent, nuclear at 9 percent and unspecified sources at 9 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."[22]

[20] https://www.sce.com/about-us/who-we-are/leadership/our-service-territory
[21] California Energy Commission. Utility Energy Supply plans from 2015. https://www.energy.ca.gov/almanac/electricity_data/supply_forms.html
[22] 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 greenhouse gases in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).[23,24] Petroleum comprises about 92 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.[25]

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 United States Environmental Protection Agency 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 U.S. Environmental Protection Agency (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.[26]

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

[23] CARB. California Greenhouse Gas Emissions Inventory – 2018 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm
[24] 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
[25] 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
[26] 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.[27]

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 2 Air Quality Analysis 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

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

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. 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 regulation 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 regards 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 greenhouse gas 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 regards 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 regards 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 regards to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regards 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 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 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.

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.[28]

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.

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.

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

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 Southern California Association of Governments (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 greenhouse gas 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 between the beginning of November 2020 and the end of June 2021 and be completed in one phase. Staging of construction vehicles and equipment will occur on-site. The approximately eight-month schedule is relatively short and the project site is relatively small at approximately 2.8 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)[29], 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 a 7,250 square foot convenience market with drive-through window and gasoline fuel station with 28 vehicle fueling positions. Based on Table 12, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $134.56.

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 8 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 greenhouse gas 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 average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. Table 13 shows the results of the analysis of construction equipment.

As presented in Table 13, project construction activities would consume an estimated 21,797 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 125,042 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 greenhouse gas analyses (Sections 2 and 3 of this report) using information generated using CARB's EMFAC model. An aggregate fuel efficiency of 28.57 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 14 shows that an estimated 4,386 gallons of fuel would be consumed for construction worker trips.

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

Construction Vendor/Hauling Fuel Estimates

Tables 15 and 16 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 22,295 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 during grading would use medium to heavy duty vehicles with an average fuel consumption of 8.5 mpg. Tables 15 and 16 show that an estimated 2,623 gallons of fuel would be consumed for vendor and hauling trips.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately eight-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 Toxic Air Contaminants. 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 greenhouse gas analyses (Sections 2 and 3 of this report), it is assumed that an average trip for autos and light trucks was assumed to be 14.7 miles and 3- 4-axle trucks were assumed to travel an average of 6.6 miles[30]. To present a worst-case scenario, it was assumed that vehicles would operate 365 days per year rather than the more likely 253 days (excluding weekends and up to 8 holidays). Table 17 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.

[30] CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 14.7 miles; 6.6 miles for H-O (home-other) or C-O (commercial-other).

The proposed project would generate 5,417 trips per day. The vehicle fleet mix was used from the CalEEMod output. Table 17 shows that an estimated 1,404,611 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 greenhouse gas analyses (Sections 2 and 3 of this report) and are provided in Table 18.

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.

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.

As shown in Section 3 above, the proposed project is consistent with the applicable strategies of the County of San Bernardino Greenhouse Gas Emissions Reduction Plan.

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 10
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 11
SCE 2017 Power Content Mix

Energy Resources	2017 SCE Power Mix
Eligible Renewable	29%
Biomass & Waste	2%
Geothermal	4%
Small Hydroelectric	3%
Solar	10%
Wind	10%
Coal	4%
Large Hydroelectric	15%
Natural Gas	34%
Nuclear	9%
Other	<1%
Unspecified Sources of power*	9%
Total	100%

Notes:

(1) https://www.sce.com/sites/default/files/inline-files/2017PCL_0.pdf

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

Table 12
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	7.25	8	$134.56

Table 13
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]
Demolition	20	Concrete/Industrial Saw	1	8	81	0.73	473.04	511
	20	Rubber Tired Dozers	1	8	247	0.4	790	854
	20	Tractors/Loaders/Backhoes	3	8	97	0.37	861	931
Site Preparation	3	Tractors/Loaders/Backhoes	1	7	97	0.37	251	41
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	132	Cranes	1	8	231	0.29	536	3,824
	132	Forklifts	3	7	89	0.2	374	2,667
	132	Generator Sets	1	8	84	0.74	497	3,548
	132	Tractors/Loaders/Backhoes	2	6	97	0.37	431	3,073
	132	Welders	4	8	46	0.45	662	4,726
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)								21,797

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 14
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)
Demolition	20	13	16.8	4,368	28.57	153
Site Preparation	3	8	16.8	403	28.57	14
Grading	6	10	16.8	1,008	28.57	35
Building Construction	132	52	16.8	115,315	28.57	4,036
Paving	10	15	16.8	2,520	28.57	88
Architectural Coating	10	10	16.8	1,680	28.57	59
Total Construction Worker Fuel Consumption						4,386

Notes:

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

Table 15
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)
Demolition	20	0	6.6	0	8.5	0
Site Preparation	3	0	6.6	0	8.5	0
Grading	6	0	6.6	0	8.5	0
Building Construction	132	21	6.6	18,295	8.5	2,152
Paving	10	0	6.6	0	8.5	0
Architectural Coating	10	0	6.6	0	8.5	0
Total Construction Worker Fuel Consumption						2,152

Notes:

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

Table 16
Construction Hauling Fuel Consumption Estimates (HHD Trucks)[1]

Phase	Number of Days	Hauling Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	10	20	4,000	8.5	471
Site Preparation	3	0	20	0	8.5	0
Grading	6	0	20	0	8.5	0
Building Construction	132	0	20	0	8.5	0
Paving	10	0	20	0	8.5	0
Architectural Coating	10	0	20	0	8.5	0
Total Construction Worker Fuel Consumption						471

Notes:

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

Table 17
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	2,979	14.7	43791	28.57	1532.77	559,462
Light Truck	Automobile	201	14.7	2955	14.08	209.85	76,596
Light Truck	Automobile	973	14.7	14303	14.08	1015.85	370,783
Medium Truck	Automobile	648	6.6	4277	8.5	503.15	183,651
Light Heavy Truck	2-Axle Truck	93	6.6	614	8.5	72.21	26,357
Light Heavy Truck 10,000 lbs +	2-Axle Truck	29	6.6	191	8.5	22.52	8,219
Medium Heavy Truck	3-Axle Truck	97	6.6	640	5.85	109.44	39,944
Heavy Heavy Truck	4-Axle Truck	339	6.6	2237	5.85	382.46	139,598
Total		5,417	--	69,009	11.74	3848.25	--
Total Annual Fuel Consumption							1,404,611

Notes:

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

Table 18
Project Annual Operational Energy Demand Summary[1]

Natural Gas Demand	kBTU/year
Gasoline/Service Station	121,800
Total	121,800

Electricity Demand	kWh/year
Gasoline/Service Station	17,110
Total	17,110

Notes:

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

5. EMISSIONS REDUCTION MEASURES

CONSTRUCTION MEASURES

The project applicant shall ensure that all applicable MDAQMD Rules and Regulations (as detailed in Sections 2 above) are complied with during construction.

No mitigation measures required.

OPERATIONAL MEASURES

To reduce GHG emissions to the maximum extent feasible, the project shall comply with the performance standards for commercial projects as detailed in the *County of San Bernardino Greenhouse Gas Emissions Reduction Plan (see Appendix C).*

No mitigation measures are required.

6. REFERENCES

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 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.

2020 Historical Air Quality, Top 4 Summary

County of San Bernardino

2011 County of San Bernardino Greenhouse Gas Emissions Reduction Plan. September.

2007 County of San Bernardino 2007 General Plan

2007 County of San Bernardino 2007 Development Code. March 13.

Ganddini Group, Inc.

2020 Boron Beyond Food Mart Traffic Impact Analysis. March 30.

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

Mojave Desert Air Quality Management District (MDAQMD)

2011 California Environmental Quality Act (CEQA) And Federal Conformity Guidelines. February

Office of Environmental Health Hazard Assessment

2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

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

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

19223 Boron Beyond Food Mart

San Bernardino-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.18	Acre	2.18	94,960.80	0
Other Non-Asphalt Surfaces	23.82	1000sqft	0.55	23,824.00	0
Gasoline/Service Station	28.00	Pump	0.09	7,250.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2021
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

19223 Boron Beyond Food Mart - San Bernardino-Mojave Desert County, Summer

Project Characteristics -

Land Use - Project area is ~2.82 acres w/ a 7,250 sf convenience store with drive-through and 28 fuel pumps, 23,824 sf landscaping, & remainder is paving (includes parking lot w/ 38 spaces (28 under canopy).

Construction Phase - Construction anticipated to start November 2020 and take approximately 8 months.

Off-road Equipment - CalEEMod default timing for building construction phase decreased by ~40%; therefore, ~40% more equipment added to CalEEmod default list for building construction phase.

Off-road Equipment - Site prep of only ~40% of site to remove existing asphalt surfaces/hardscape.

Trips and VMT -

Demolition - Demolition of an ~2,200 sf existing commercial building.

Grading - Site prep of only ~40% of site (~1.13 ac) to remove exsiting asphalt surface/hardscape. Site anticipated to balance.

Vehicle Trips - Per TIA, 193.46 trips/FP/weekday (w/ pass-by ~10.8% daily rdxn). Per ITE 10th Ed Manual (ITE 960), 700 trips/TSF Saturday = 181.25 trips/FP. CalEEMod default rate used for Sunday. Pass-by changed to 0 & split between primary/diverted.

Sequestration - ~6 new trees to be planted.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Sidewalks provided on-site.

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

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

19223 Boron Beyond Food Mart - San Bernardino-Mojave Desert County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	132.00
tblGrading	AcresOfGrading	0.00	1.13
tblLandUse	LandUseSquareFeet	3,952.90	7,250.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSequestration	NumberOfNewTrees	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblVehicleTrips	DV_TP	27.00	57.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	14.00	43.00
tblVehicleTrips	ST_TR	168.56	181.25
tblVehicleTrips	WD_TR	168.56	193.46

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	3.2879	24.1088	22.4697	0.0435	6.6801	1.2336	7.6711	3.4014	1.1788	4.3131	0.0000	4,104.0373	4,104.0373	0.6691	0.0000	4,120.7650
2021	25.3351	32.8747	34.2797	0.0630	0.9845	1.6398	2.6242	0.2640	1.5470	1.8110	0.0000	5,975.9235	5,975.9235	1.1950	0.0000	6,005.7986
Maximum	**25.3351**	**32.8747**	**34.2797**	**0.0630**	**6.6801**	**1.6398**	**7.6711**	**3.4014**	**1.5470**	**4.3131**	**0.0000**	**5,975.9235**	**5,975.9235**	**1.1950**	**0.0000**	**6,005.7986**

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	3.2879	24.1088	22.4697	0.0435	2.6831	1.2336	3.6741	1.3472	1.1788	2.2589	0.0000	4,104.0373	4,104.0373	0.6691	0.0000	4,120.7650
2021	25.3351	32.8747	34.2797	0.0630	0.9845	1.6398	2.6242	0.2640	1.5470	1.8110	0.0000	5,975.9235	5,975.9235	1.1950	0.0000	6,005.7986
Maximum	**25.3351**	**32.8747**	**34.2797**	**0.0630**	**2.6831**	**1.6398**	**3.6741**	**1.3472**	**1.5470**	**2.2589**	**0.0000**	**5,975.9235**	**5,975.9235**	**1.1950**	**0.0000**	**6,005.7986**

	ROG	NOx	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**	**52.15**	**0.00**	**38.82**	**56.04**	**0.00**	**33.54**	**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	0.2664	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126
Energy	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920
Mobile	9.6507	56.7420	74.0525	0.2619	16.2745	0.1787	16.4533	4.3551	0.1674	4.5225		26,789.2628	26,789.2628	1.7855		26,833.8999
Total	**9.9207**	**56.7748**	**74.0855**	**0.2621**	**16.2745**	**0.1813**	**16.4558**	**4.3551**	**0.1699**	**4.5250**		**26,828.5333**	**26,828.5333**	**1.7863**	**7.2000e-004**	**26,873.4044**

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	0.2664	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126
Energy	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920
Mobile	9.6321	56.5919	73.5368	0.2599	16.1118	0.1773	16.2891	4.3116	0.1661	4.4776		26,585.1155	26,585.1155	1.7785		26,629.5774
Total	**9.9021**	**56.6246**	**73.5698**	**0.2601**	**16.1118**	**0.1798**	**16.2916**	**4.3116**	**0.1686**	**4.4801**		**26,624.3859**	**26,624.3859**	**1.7793**	**7.2000e-004**	**26,669.0819**

	ROG	NOx	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	**0.19**	**0.26**	**0.70**	**0.77**	**1.00**	**0.79**	**1.00**	**1.00**	**0.79**	**0.99**	**0.00**	**0.76**	**0.76**	**0.39**	**0.00**	**0.76**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2020	11/27/2020	5	20	
2	Site Preparation	Site Preparation	11/28/2020	12/2/2020	5	3	
3	Grading	Grading	12/3/2020	12/10/2020	5	6	
4	Building Construction	Building Construction	12/11/2020	6/14/2021	5	132	
5	Paving	Paving	6/3/2021	6/16/2021	5	10	
6	Architectural Coating	Architectural Coating	6/17/2021	6/30/2021	5	10	

Acres of Grading (Site Preparation Phase): 1.13

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.73

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 10,875; Non-Residential Outdoor: 3,625; Striped Parking Area: 7,127 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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
Demolition	5	13.00	0.00	10.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	52.00	21.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					0.1096	0.0000	0.1096	0.0166	0.0000	0.0166			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761		2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**0.1096**	**1.1525**	**1.2621**	**0.0166**	**1.0761**	**1.0927**		**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.1100e-003	0.1232	0.0182	3.9000e-004	8.7500e-003	3.7000e-004	9.1200e-003	2.4000e-003	3.5000e-004	2.7500e-003		41.6354	41.6354	2.2500e-003		41.6916
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	0.0781	0.0514	0.6597	1.6800e-003	0.1661	1.0800e-003	0.1671	0.0440	9.9000e-004	0.0450		167.4701	167.4701	5.0800e-003		167.5971
Total	**0.0812**	**0.1745**	**0.6778**	**2.0700e-003**	**0.1748**	**1.4500e-003**	**0.1763**	**0.0464**	**1.3400e-003**	**0.0478**		**209.1055**	**209.1055**	**7.3300e-003**		**209.2887**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0428	0.0000	0.0428	6.4700e-003	0.0000	6.4700e-003			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761	0.0000	2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**0.0428**	**1.1525**	**1.1952**	**6.4700e-003**	**1.0761**	**1.0826**	**0.0000**	**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.1100e-003	0.1232	0.0182	3.9000e-004	8.7500e-003	3.7000e-004	9.1200e-003	2.4000e-003	3.5000e-004	2.7500e-003		41.6354	41.6354	2.2500e-003		41.6916
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	0.0781	0.0514	0.6597	1.6800e-003	0.1661	1.0800e-003	0.1671	0.0440	9.9000e-004	0.0450		167.4701	167.4701	5.0800e-003		167.5971
Total	**0.0812**	**0.1745**	**0.6778**	**2.0700e-003**	**0.1748**	**1.4500e-003**	**0.1763**	**0.0464**	**1.3400e-003**	**0.0478**		**209.1055**	**209.1055**	**7.3300e-003**		**209.2887**

3.3 Site Preparation - 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					0.3995	0.0000	0.3995	0.0431	0.0000	0.0431			0.0000			0.0000
Off-Road	0.1833	1.8420	1.9947	2.7200e-003		0.1165	0.1165		0.1072	0.1072		263.1724	263.1724	0.0851		265.3003
Total	**0.1833**	**1.8420**	**1.9947**	**2.7200e-003**	**0.3995**	**0.1165**	**0.5159**	**0.0431**	**0.1072**	**0.1503**		**263.1724**	**263.1724**	**0.0851**		**265.3003**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0481	0.0316	0.4059	1.0400e-003	0.1022	6.6000e-004	0.1029	0.0271	6.1000e-004	0.0277		103.0585	103.0585	3.1300e-003		103.1367
Total	**0.0481**	**0.0316**	**0.4059**	**1.0400e-003**	**0.1022**	**6.6000e-004**	**0.1029**	**0.0271**	**6.1000e-004**	**0.0277**		**103.0585**	**103.0585**	**3.1300e-003**		**103.1367**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1558	0.0000	0.1558	0.0168	0.0000	0.0168			0.0000			0.0000
Off-Road	0.1833	1.8420	1.9947	2.7200e-003		0.1165	0.1165		0.1072	0.1072	0.0000	263.1724	263.1724	0.0851		265.3003
Total	**0.1833**	**1.8420**	**1.9947**	**2.7200e-003**	**0.1558**	**0.1165**	**0.2723**	**0.0168**	**0.1072**	**0.1240**	**0.0000**	**263.1724**	**263.1724**	**0.0851**		**265.3003**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0481	0.0316	0.4059	1.0400e-003	0.1022	6.6000e-004	0.1029	0.0271	6.1000e-004	0.0277		103.0585	103.0585	3.1300e-003		103.1367
Total	**0.0481**	**0.0316**	**0.4059**	**1.0400e-003**	**0.1022**	**6.6000e-004**	**0.1029**	**0.0271**	**6.1000e-004**	**0.0277**		**103.0585**	**103.0585**	**3.1300e-003**		**103.1367**

3.4 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**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0395	0.5074	1.2900e-003	0.1277	8.3000e-004	0.1286	0.0339	7.6000e-004	0.0346		128.8232	128.8232	3.9100e-003		128.9208
Total	**0.0601**	**0.0395**	**0.5074**	**1.2900e-003**	**0.1277**	**8.3000e-004**	**0.1286**	**0.0339**	**7.6000e-004**	**0.0346**		**128.8232**	**128.8232**	**3.9100e-003**		**128.9208**

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**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0395	0.5074	1.2900e-003	0.1277	8.3000e-004	0.1286	0.0339	7.6000e-004	0.0346		128.8232	128.8232	3.9100e-003		128.9208
Total	**0.0601**	**0.0395**	**0.5074**	**1.2900e-003**	**0.1277**	**8.3000e-004**	**0.1286**	**0.0339**	**7.6000e-004**	**0.0346**		**128.8232**	**128.8232**	**3.9100e-003**		**128.9208**

3.5 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**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0624	2.1841	0.4244	5.5300e-003	0.1287	9.7800e-003	0.1385	0.0371	9.3500e-003	0.0464		582.6882	582.6882	0.0387		583.6564
Worker	0.3124	0.2055	2.6386	6.7300e-003	0.6642	4.3000e-003	0.6685	0.1761	3.9600e-003	0.1801		669.8804	669.8804	0.0203		670.3883
Total	**0.3748**	**2.3896**	**3.0630**	**0.0123**	**0.7929**	**0.0141**	**0.8070**	**0.2132**	**0.0133**	**0.2265**		**1,252.5685**	**1,252.5685**	**0.0591**		**1,254.0447**

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**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0624	2.1841	0.4244	5.5300e-003	0.1287	9.7800e-003	0.1385	0.0371	9.3500e-003	0.0464		582.6882	582.6882	0.0387		583.6564
Worker	0.3124	0.2055	2.6386	6.7300e-003	0.6642	4.3000e-003	0.6685	0.1761	3.9600e-003	0.1801		669.8804	669.8804	0.0203		670.3883
Total	**0.3748**	**2.3896**	**3.0630**	**0.0123**	**0.7929**	**0.0141**	**0.8070**	**0.2132**	**0.0133**	**0.2265**		**1,252.5685**	**1,252.5685**	**0.0591**		**1,254.0447**

3.5 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**

3.5 Building Construction - 2021

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	0.0533	1.9994	0.3748	5.4900e-003	0.1287	3.3400e-003	0.1320	0.0371	3.1900e-003	0.0402		579.5840	579.5840	0.0375		580.5212
Worker	0.2909	0.1843	2.4296	6.5100e-003	0.6642	4.2000e-003	0.6684	0.1761	3.8700e-003	0.1800		648.5358	648.5358	0.0183		648.9944
Total	**0.3442**	**2.1837**	**2.8044**	**0.0120**	**0.7929**	**7.5400e-003**	**0.8004**	**0.2132**	**7.0600e-003**	**0.2203**		**1,228.1199**	**1,228.1199**	**0.0558**		**1,229.5156**

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**

3.5 Building Construction - 2021

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	0.0533	1.9994	0.3748	5.4900e-003	0.1287	3.3400e-003	0.1320	0.0371	3.1900e-003	0.0402		579.5840	579.5840	0.0375		580.5212
Worker	0.2909	0.1843	2.4296	6.5100e-003	0.6642	4.2000e-003	0.6684	0.1761	3.8700e-003	0.1800		648.5358	648.5358	0.0183		648.9944
Total	**0.3442**	**2.1837**	**2.8044**	**0.0120**	**0.7929**	**7.5400e-003**	**0.8004**	**0.2132**	**7.0600e-003**	**0.2203**		**1,228.1199**	**1,228.1199**	**0.0558**		**1,229.5156**

3.6 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	0.5712					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6345**	**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**

3.6 Paving - 2021

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	0.0839	0.0532	0.7009	1.8800e-003	0.1916	1.2100e-003	0.1928	0.0508	1.1200e-003	0.0519		187.0776	187.0776	5.2900e-003		187.2099
Total	**0.0839**	**0.0532**	**0.7009**	**1.8800e-003**	**0.1916**	**1.2100e-003**	**0.1928**	**0.0508**	**1.1200e-003**	**0.0519**		**187.0776**	**187.0776**	**5.2900e-003**		**187.2099**

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	0.5712					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6345**	**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**

3.6 Paving - 2021

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	0.0839	0.0532	0.7009	1.8800e-003	0.1916	1.2100e-003	0.1928	0.0508	1.1200e-003	0.0519		187.0776	187.0776	5.2900e-003		187.2099
Total	**0.0839**	**0.0532**	**0.7009**	**1.8800e-003**	**0.1916**	**1.2100e-003**	**0.1928**	**0.0508**	**1.1200e-003**	**0.0519**		**187.0776**	**187.0776**	**5.2900e-003**		**187.2099**

3.7 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	25.0603					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	**25.2792**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

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	0.0559	0.0354	0.4672	1.2500e-003	0.1277	8.1000e-004	0.1285	0.0339	7.4000e-004	0.0346		124.7184	124.7184	3.5300e-003		124.8066
Total	**0.0559**	**0.0354**	**0.4672**	**1.2500e-003**	**0.1277**	**8.1000e-004**	**0.1285**	**0.0339**	**7.4000e-004**	**0.0346**		**124.7184**	**124.7184**	**3.5300e-003**		**124.8066**

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	25.0603					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	**25.2792**	**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**

3.7 Architectural Coating - 2021

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	0.0559	0.0354	0.4672	1.2500e-003	0.1277	8.1000e-004	0.1285	0.0339	7.4000e-004	0.0346		124.7184	124.7184	3.5300e-003		124.8066
Total	**0.0559**	**0.0354**	**0.4672**	**1.2500e-003**	**0.1277**	**8.1000e-004**	**0.1285**	**0.0339**	**7.4000e-004**	**0.0346**		**124.7184**	**124.7184**	**3.5300e-003**		**124.8066**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.6321	56.5919	73.5368	0.2599	16.1118	0.1773	16.2891	4.3116	0.1661	4.4776		26,585.1155	26,585.1155	1.7785		26,629.5774
Unmitigated	9.6507	56.7420	74.0525	0.2619	16.2745	0.1787	16.4533	4.3551	0.1674	4.5225		26,789.2628	26,789.2628	1.7855		26,833.8999

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Gasoline/Service Station	5,416.88	5,075.00	4719.68	7,423,934	7,349,694
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5,416.88	5,075.00	4,719.68	7,423,934	7,349,694

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
Gasoline/Service Station	14.70	6.60	6.60	2.00	79.00	19.00	43	57	0
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	14.70	6.60	6.60	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
Gasoline/Service Station	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Other Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Other Non-Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920
NaturalGas Unmitigated	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920

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					
Gasoline/Service Station	333.699	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920
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		**3.6000e-003**	**0.0327**	**0.0275**	**2.0000e-004**		**2.4900e-003**	**2.4900e-003**		**2.4900e-003**	**2.4900e-003**		**39.2587**	**39.2587**	**7.5000e-004**	**7.2000e-004**	**39.4920**

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					
Gasoline/Service Station	0.333699	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920
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		**3.6000e-003**	**0.0327**	**0.0275**	**2.0000e-004**		**2.4900e-003**	**2.4900e-003**		**2.4900e-003**	**2.4900e-003**		**39.2587**	**39.2587**	**7.5000e-004**	**7.2000e-004**	**39.4920**

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	0.2664	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126
Unmitigated	0.2664	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126

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	0.0687					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1972					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.2000e-004	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126
Total	**0.2664**	**5.0000e-005**	**5.5400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0118**	**0.0118**	**3.0000e-005**		**0.0126**

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	0.0687					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1972					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.2000e-004	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126
Total	**0.2664**	**5.0000e-005**	**5.5400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0118**	**0.0118**	**3.0000e-005**		**0.0126**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

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

19223 Boron Beyond Food Mart

San Bernardino-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.18	Acre	2.18	94,960.80	0
Other Non-Asphalt Surfaces	23.82	1000sqft	0.55	23,824.00	0
Gasoline/Service Station	28.00	Pump	0.09	7,250.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2021
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

19223 Boron Beyond Food Mart - San Bernardino-Mojave Desert County, Winter

Project Characteristics -

Land Use - Project area is ~2.82 acres w/ a 7,250 sf convenience store with drive-through and 28 fuel pumps, 23,824 sf landscaping, & remainder is paving (includes parking lot w/ 38 spaces (28 under canopy).

Construction Phase - Construction anticipated to start November 2020 and take approximately 8 months.

Off-road Equipment - CalEEMod default timing for building construction phase decreased by ~40%; therefore, ~40% more equipment added to CalEEmod default list for building construction phase.

Off-road Equipment - Site prep of only ~40% of site to remove existing asphalt surfaces/hardscape.

Trips and VMT -

Demolition - Demolition of an ~2,200 sf existing commercial building.

Grading - Site prep of only ~40% of site (~1.13 ac) to remove exsiting asphalt surface/hardscape. Site anticipated to balance.

Vehicle Trips - Per TIA, 193.46 trips/FP/weekday (w/ pass-by ~10.8% daily rdxn). Per ITE 10th Ed Manual (ITE 960), 700 trips/TSF Saturday = 181.25 trips/FP. CalEEMod default rate used for Sunday. Pass-by changed to 0 & split between primary/diverted.

Sequestration - ~6 new trees to be planted.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Sidewalks provided on-site.

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

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

19223 Boron Beyond Food Mart - San Bernardino-Mojave Desert County, Winter

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	132.00
tblGrading	AcresOfGrading	0.00	1.13
tblLandUse	LandUseSquareFeet	3,952.90	7,250.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSequestration	NumberOfNewTrees	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblVehicleTrips	DV_TP	27.00	57.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	14.00	43.00
tblVehicleTrips	ST_TR	168.56	181.25
tblVehicleTrips	WD_TR	168.56	193.46

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	3.2943	24.1000	22.0567	0.0426	6.6801	1.2337	7.6711	3.4014	1.1789	4.3131	0.0000	4,011.6472	4,011.6472	0.6707	0.0000	4,028.4143
2021	25.3358	32.8642	33.7680	0.0619	0.9845	1.6399	2.6243	0.2640	1.5471	1.8111	0.0000	5,866.5762	5,866.5762	1.1962	0.0000	5,896.4798
Maximum	**25.3358**	**32.8642**	**33.7680**	**0.0619**	**6.6801**	**1.6399**	**7.6711**	**3.4014**	**1.5471**	**4.3131**	**0.0000**	**5,866.5762**	**5,866.5762**	**1.1962**	**0.0000**	**5,896.4798**

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	3.2943	24.1000	22.0567	0.0426	2.6831	1.2337	3.6741	1.3472	1.1789	2.2589	0.0000	4,011.6472	4,011.6472	0.6707	0.0000	4,028.4143
2021	25.3358	32.8642	33.7680	0.0619	0.9845	1.6399	2.6243	0.2640	1.5471	1.8111	0.0000	5,866.5762	5,866.5762	1.1962	0.0000	5,896.4798
Maximum	**25.3358**	**32.8642**	**33.7680**	**0.0619**	**2.6831**	**1.6399**	**3.6741**	**1.3472**	**1.5471**	**2.2589**	**0.0000**	**5,866.5762**	**5,866.5762**	**1.1962**	**0.0000**	**5,896.4798**

	ROG	NOx	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**	**52.15**	**0.00**	**38.82**	**56.04**	**0.00**	**33.54**	**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	0.2664	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126
Energy	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920
Mobile	8.2647	55.9709	69.4700	0.2401	16.2745	0.1818	16.4563	4.3551	0.1704	4.5255		24,567.8491	24,567.8491	1.8877		24,615.0413
Total	**8.5347**	**56.0036**	**69.5030**	**0.2403**	**16.2745**	**0.1844**	**16.4589**	**4.3551**	**0.1729**	**4.5280**		**24,607.1196**	**24,607.1196**	**1.8885**	**7.2000e-004**	**24,654.5459**

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	0.2664	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126
Energy	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920
Mobile	8.2471	55.8133	69.0507	0.2382	16.1118	0.1804	16.2922	4.3116	0.1690	4.4806		24,378.5116	24,378.5116	1.8811		24,425.5402
Total	**8.5171**	**55.8461**	**69.0837**	**0.2384**	**16.1118**	**0.1829**	**16.2947**	**4.3116**	**0.1715**	**4.4831**		**24,417.7821**	**24,417.7821**	**1.8819**	**7.2000e-004**	**24,465.0448**

	ROG	NOx	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	**0.21**	**0.28**	**0.60**	**0.77**	**1.00**	**0.78**	**1.00**	**1.00**	**0.78**	**0.99**	**0.00**	**0.77**	**0.77**	**0.35**	**0.00**	**0.77**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2020	11/27/2020	5	20	
2	Site Preparation	Site Preparation	11/28/2020	12/2/2020	5	3	
3	Grading	Grading	12/3/2020	12/10/2020	5	6	
4	Building Construction	Building Construction	12/11/2020	6/14/2021	5	132	
5	Paving	Paving	6/3/2021	6/16/2021	5	10	
6	Architectural Coating	Architectural Coating	6/17/2021	6/30/2021	5	10	

Acres of Grading (Site Preparation Phase): 1.13

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.73

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 10,875; Non-Residential Outdoor: 3,625; Striped Parking Area: 7,127 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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
Demolition	5	13.00	0.00	10.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	52.00	21.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					0.1096	0.0000	0.1096	0.0166	0.0000	0.0166			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761		2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**0.1096**	**1.1525**	**1.2621**	**0.0166**	**1.0761**	**1.0927**		**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.2500e-003	0.1238	0.0208	3.8000e-004	8.7500e-003	3.7000e-004	9.1200e-003	2.4000e-003	3.6000e-004	2.7500e-003		40.5498	40.5498	2.4400e-003		40.6107
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	0.0788	0.0541	0.5392	1.5100e-003	0.1661	1.0800e-003	0.1671	0.0440	9.9000e-004	0.0450		150.2007	150.2007	4.4400e-003		150.3118
Total	**0.0821**	**0.1779**	**0.5600**	**1.8900e-003**	**0.1748**	**1.4500e-003**	**0.1763**	**0.0464**	**1.3500e-003**	**0.0478**		**190.7505**	**190.7505**	**6.8800e-003**		**190.9225**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0428	0.0000	0.0428	6.4700e-003	0.0000	6.4700e-003			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761	0.0000	2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**0.0428**	**1.1525**	**1.1952**	**6.4700e-003**	**1.0761**	**1.0826**	**0.0000**	**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.2500e-003	0.1238	0.0208	3.8000e-004	8.7500e-003	3.7000e-004	9.1200e-003	2.4000e-003	3.6000e-004	2.7500e-003		40.5498	40.5498	2.4400e-003		40.6107
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	0.0788	0.0541	0.5392	1.5100e-003	0.1661	1.0800e-003	0.1671	0.0440	9.9000e-004	0.0450		150.2007	150.2007	4.4400e-003		150.3118
Total	**0.0821**	**0.1779**	**0.5600**	**1.8900e-003**	**0.1748**	**1.4500e-003**	**0.1763**	**0.0464**	**1.3500e-003**	**0.0478**		**190.7505**	**190.7505**	**6.8800e-003**		**190.9225**

3.3 Site Preparation - 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					0.3995	0.0000	0.3995	0.0431	0.0000	0.0431			0.0000			0.0000
Off-Road	0.1833	1.8420	1.9947	2.7200e-003		0.1165	0.1165		0.1072	0.1072		263.1724	263.1724	0.0851		265.3003
Total	**0.1833**	**1.8420**	**1.9947**	**2.7200e-003**	**0.3995**	**0.1165**	**0.5159**	**0.0431**	**0.1072**	**0.1503**		**263.1724**	**263.1724**	**0.0851**		**265.3003**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0485	0.0333	0.3318	9.3000e-004	0.1022	6.6000e-004	0.1029	0.0271	6.1000e-004	0.0277		92.4312	92.4312	2.7300e-003		92.4996
Total	**0.0485**	**0.0333**	**0.3318**	**9.3000e-004**	**0.1022**	**6.6000e-004**	**0.1029**	**0.0271**	**6.1000e-004**	**0.0277**		**92.4312**	**92.4312**	**2.7300e-003**		**92.4996**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1558	0.0000	0.1558	0.0168	0.0000	0.0168			0.0000			0.0000
Off-Road	0.1833	1.8420	1.9947	2.7200e-003		0.1165	0.1165		0.1072	0.1072	0.0000	263.1724	263.1724	0.0851		265.3003
Total	**0.1833**	**1.8420**	**1.9947**	**2.7200e-003**	**0.1558**	**0.1165**	**0.2723**	**0.0168**	**0.1072**	**0.1240**	**0.0000**	**263.1724**	**263.1724**	**0.0851**		**265.3003**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0485	0.0333	0.3318	9.3000e-004	0.1022	6.6000e-004	0.1029	0.0271	6.1000e-004	0.0277		92.4312	92.4312	2.7300e-003		92.4996
Total	**0.0485**	**0.0333**	**0.3318**	**9.3000e-004**	**0.1022**	**6.6000e-004**	**0.1029**	**0.0271**	**6.1000e-004**	**0.0277**		**92.4312**	**92.4312**	**2.7300e-003**		**92.4996**

3.4 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**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0606	0.0416	0.4148	1.1600e-003	0.1277	8.3000e-004	0.1286	0.0339	7.6000e-004	0.0346		115.5390	115.5390	3.4200e-003		115.6245
Total	**0.0606**	**0.0416**	**0.4148**	**1.1600e-003**	**0.1277**	**8.3000e-004**	**0.1286**	**0.0339**	**7.6000e-004**	**0.0346**		**115.5390**	**115.5390**	**3.4200e-003**		**115.6245**

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**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0606	0.0416	0.4148	1.1600e-003	0.1277	8.3000e-004	0.1286	0.0339	7.6000e-004	0.0346		115.5390	115.5390	3.4200e-003		115.6245
Total	**0.0606**	**0.0416**	**0.4148**	**1.1600e-003**	**0.1277**	**8.3000e-004**	**0.1286**	**0.0339**	**7.6000e-004**	**0.0346**		**115.5390**	**115.5390**	**3.4200e-003**		**115.6245**

3.5 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**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0659	2.1647	0.4932	5.3100e-003	0.1287	9.9100e-003	0.1386	0.0371	9.4800e-003	0.0465		559.3755	559.3755	0.0429		560.4468
Worker	0.3153	0.2162	2.1568	6.0300e-003	0.6642	4.3000e-003	0.6685	0.1761	3.9600e-003	0.1801		600.8029	600.8029	0.0178		601.2472
Total	**0.3813**	**2.3809**	**2.6500**	**0.0113**	**0.7929**	**0.0142**	**0.8071**	**0.2132**	**0.0134**	**0.2266**		**1,160.1784**	**1,160.1784**	**0.0606**		**1,161.6940**

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**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0659	2.1647	0.4932	5.3100e-003	0.1287	9.9100e-003	0.1386	0.0371	9.4800e-003	0.0465		559.3755	559.3755	0.0429		560.4468
Worker	0.3153	0.2162	2.1568	6.0300e-003	0.6642	4.3000e-003	0.6685	0.1761	3.9600e-003	0.1801		600.8029	600.8029	0.0178		601.2472
Total	**0.3813**	**2.3809**	**2.6500**	**0.0113**	**0.7929**	**0.0142**	**0.8071**	**0.2132**	**0.0134**	**0.2266**		**1,160.1784**	**1,160.1784**	**0.0606**		**1,161.6940**

3.5 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**

3.5 Building Construction - 2021

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	0.0566	1.9767	0.4396	5.2700e-003	0.1287	3.4300e-003	0.1321	0.0371	3.2800e-003	0.0403		556.3702	556.3702	0.0416		557.4098
Worker	0.2942	0.1938	1.9822	5.8400e-003	0.6642	4.2000e-003	0.6684	0.1761	3.8700e-003	0.1800		581.6860	581.6860	0.0161		582.0871
Total	**0.3508**	**2.1705**	**2.4217**	**0.0111**	**0.7929**	**7.6300e-003**	**0.8005**	**0.2132**	**7.1500e-003**	**0.2204**		**1,138.0562**	**1,138.0562**	**0.0576**		**1,139.4969**

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**

3.5 Building Construction - 2021

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	0.0566	1.9767	0.4396	5.2700e-003	0.1287	3.4300e-003	0.1321	0.0371	3.2800e-003	0.0403		556.3702	556.3702	0.0416		557.4098
Worker	0.2942	0.1938	1.9822	5.8400e-003	0.6642	4.2000e-003	0.6684	0.1761	3.8700e-003	0.1800		581.6860	581.6860	0.0161		582.0871
Total	**0.3508**	**2.1705**	**2.4217**	**0.0111**	**0.7929**	**7.6300e-003**	**0.8005**	**0.2132**	**7.1500e-003**	**0.2204**		**1,138.0562**	**1,138.0562**	**0.0576**		**1,139.4969**

3.6 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	0.5712					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6345**	**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**

3.6 Paving - 2021

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	0.0849	0.0559	0.5718	1.6800e-003	0.1916	1.2100e-003	0.1928	0.0508	1.1200e-003	0.0519		167.7940	167.7940	4.6300e-003		167.9098
Total	**0.0849**	**0.0559**	**0.5718**	**1.6800e-003**	**0.1916**	**1.2100e-003**	**0.1928**	**0.0508**	**1.1200e-003**	**0.0519**		**167.7940**	**167.7940**	**4.6300e-003**		**167.9098**

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	0.5712					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6345**	**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**

3.6 Paving - 2021

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	0.0849	0.0559	0.5718	1.6800e-003	0.1916	1.2100e-003	0.1928	0.0508	1.1200e-003	0.0519		167.7940	167.7940	4.6300e-003		167.9098
Total	**0.0849**	**0.0559**	**0.5718**	**1.6800e-003**	**0.1916**	**1.2100e-003**	**0.1928**	**0.0508**	**1.1200e-003**	**0.0519**		**167.7940**	**167.7940**	**4.6300e-003**		**167.9098**

3.7 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	25.0603					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	**25.2792**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

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	0.0566	0.0373	0.3812	1.1200e-003	0.1277	8.1000e-004	0.1285	0.0339	7.4000e-004	0.0346		111.8627	111.8627	3.0900e-003		111.9398
Total	**0.0566**	**0.0373**	**0.3812**	**1.1200e-003**	**0.1277**	**8.1000e-004**	**0.1285**	**0.0339**	**7.4000e-004**	**0.0346**		**111.8627**	**111.8627**	**3.0900e-003**		**111.9398**

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	25.0603					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	**25.2792**	**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**

3.7 Architectural Coating - 2021

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	0.0566	0.0373	0.3812	1.1200e-003	0.1277	8.1000e-004	0.1285	0.0339	7.4000e-004	0.0346		111.8627	111.8627	3.0900e-003		111.9398
Total	**0.0566**	**0.0373**	**0.3812**	**1.1200e-003**	**0.1277**	**8.1000e-004**	**0.1285**	**0.0339**	**7.4000e-004**	**0.0346**		**111.8627**	**111.8627**	**3.0900e-003**		**111.9398**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.2471	55.8133	69.0507	0.2382	16.1118	0.1804	16.2922	4.3116	0.1690	4.4806		24,378.5116	24,378.5116	1.8811		24,425.5402
Unmitigated	8.2647	55.9709	69.4700	0.2401	16.2745	0.1818	16.4563	4.3551	0.1704	4.5255		24,567.8491	24,567.8491	1.8877		24,615.0413

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Gasoline/Service Station	5,416.88	5,075.00	4719.68	7,423,934	7,349,694
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5,416.88	5,075.00	4,719.68	7,423,934	7,349,694

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
Gasoline/Service Station	14.70	6.60	6.60	2.00	79.00	19.00	43	57	0
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	14.70	6.60	6.60	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
Gasoline/Service Station	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Other Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Other Non-Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920
NaturalGas Unmitigated	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920

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					
Gasoline/Service Station	333.699	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920
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		**3.6000e-003**	**0.0327**	**0.0275**	**2.0000e-004**		**2.4900e-003**	**2.4900e-003**		**2.4900e-003**	**2.4900e-003**		**39.2587**	**39.2587**	**7.5000e-004**	**7.2000e-004**	**39.4920**

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					
Gasoline/Service Station	0.333699	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2587	39.2587	7.5000e-004	7.2000e-004	39.4920
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		**3.6000e-003**	**0.0327**	**0.0275**	**2.0000e-004**		**2.4900e-003**	**2.4900e-003**		**2.4900e-003**	**2.4900e-003**		**39.2587**	**39.2587**	**7.5000e-004**	**7.2000e-004**	**39.4920**

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	0.2664	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126
Unmitigated	0.2664	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126

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	0.0687					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1972					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.2000e-004	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126
Total	**0.2664**	**5.0000e-005**	**5.5400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0118**	**0.0118**	**3.0000e-005**		**0.0126**

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	0.0687					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1972					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.2000e-004	5.0000e-005	5.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0118	0.0118	3.0000e-005		0.0126
Total	**0.2664**	**5.0000e-005**	**5.5400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0118**	**0.0118**	**3.0000e-005**		**0.0126**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

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

19223 Boron Beyond Food Mart - Existing Uses OPERATIONAL ANALYSIS ONLY

San Bernardino-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	11.83	1000sqft	0.27	11,825.00	0
Fast Food Restaurant w/o Drive Thru	1.45	1000sqft	0.03	1,450.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,800.00	3
Automobile Care Center	1.80	1000sqft	0.04	1,800.00	0
Gasoline/Service Station	4.00	Pump	0.01	564.70	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Existing Uses - OPERATIONAL ANALYSIS ONLY

Land Use - Per TIA, existing uses to be demoed - 11.825TSF light industrial, 1 SFD, auto care w/ 1 bay (per GE ~1.8TSF), gas station w/ 4 fueling pumps, & a 1.45 TSF fast-food rest w/o drive-thru.

Vehicle Trips - Per TIA weekday: 9.44trips/DU SFD, 10trips/TSF auto, 160trips/FP gas (w/pass-by), 435.17trips/TSF fast-food (w/pass-by), & 4.99trips/TSF ind. Sat/Sun from ITE 10th Ed. Pass-by (gas station & fast-food) changed 0 & split prmry/div.
Energy Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	DV_TP	37.00	43.00
tblVehicleTrips	DV_TP	27.00	57.00
tblVehicleTrips	PB_TP	12.00	0.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	51.00	57.00
tblVehicleTrips	PR_TP	14.00	43.00
tblVehicleTrips	ST_TR	23.72	6.93
tblVehicleTrips	ST_TR	696.00	616.12
tblVehicleTrips	ST_TR	168.56	182.17
tblVehicleTrips	ST_TR	1.32	1.99
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	11.88	1.13
tblVehicleTrips	SU_TR	500.00	472.58
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	23.72	10.00
tblVehicleTrips	WD_TR	716.00	435.17
tblVehicleTrips	WD_TR	168.56	160.00
tblVehicleTrips	WD_TR	6.97	4.99
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

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	2.0210	0.0309	1.9738	3.4300e-003		0.2653	0.2653		0.2653	0.2653	27.7717	11.7998	39.5715	0.0258	2.1800e-003	40.8671
Energy	0.0121	0.1091	0.0890	6.6000e-004		8.3200e-003	8.3200e-003		8.3200e-003	8.3200e-003		131.4428	131.4428	2.5200e-003	2.4100e-003	132.2239
Mobile	3.3932	19.6153	28.2867	0.0945	5.9511	0.0789	6.0300	1.5926	0.0742	1.6668		9,644.3645	9,644.3645	0.6223		9,659.9219
Total	**5.4263**	**19.7553**	**30.3495**	**0.0986**	**5.9511**	**0.3526**	**6.3037**	**1.5926**	**0.3479**	**1.9405**	**27.7717**	**9,787.6070**	**9,815.3788**	**0.6506**	**4.5900e-003**	**9,833.0129**

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	2.0210	0.0309	1.9738	3.4300e-003		0.2653	0.2653		0.2653	0.2653	27.7717	11.7998	39.5715	0.0258	2.1800e-003	40.8671
Energy	0.0121	0.1091	0.0890	6.6000e-004		8.3200e-003	8.3200e-003		8.3200e-003	8.3200e-003		131.4428	131.4428	2.5200e-003	2.4100e-003	132.2239
Mobile	3.3932	19.6153	28.2867	0.0945	5.9511	0.0789	6.0300	1.5926	0.0742	1.6668		9,644.3645	9,644.3645	0.6223		9,659.9219
Total	**5.4263**	**19.7553**	**30.3495**	**0.0986**	**5.9511**	**0.3526**	**6.3037**	**1.5926**	**0.3479**	**1.9405**	**27.7717**	**9,787.6070**	**9,815.3788**	**0.6506**	**4.5900e-003**	**9,833.0129**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.3932	19.6153	28.2867	0.0945	5.9511	0.0789	6.0300	1.5926	0.0742	1.6668		9,644.3645	9,644.3645	0.6223		9,659.9219
Unmitigated	3.3932	19.6153	28.2867	0.0945	5.9511	0.0789	6.0300	1.5926	0.0742	1.6668		9,644.3645	9,644.3645	0.6223		9,659.9219

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	18.00	12.47	2.03	17,160	17,160
Fast Food Restaurant w/o Drive Thru	631.00	893.37	685.24	1,120,909	1,120,909
Gasoline/Service Station	640.00	728.68	674.24	926,590	926,590
General Light Industry	59.01	23.53	8.04	180,262	180,262
Single Family Housing	9.44	9.54	8.55	34,132	34,132
Total	1,357.44	1,667.60	1,378.11	2,279,051	2,279,051

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	14.70	6.60	6.60	33.00	48.00	19.00	21	51	28
Fast Food Restaurant w/o Drive Thru	14.70	6.60	6.60	1.50	79.50	19.00	57	43	0
Gasoline/Service Station	14.70	6.60	6.60	2.00	79.00	19.00	43	57	0
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Single Family Housing	16.80	7.10	7.90	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Fast Food Restaurant w/o Drive Thru	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Gasoline/Service Station	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
General Light Industry	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Single Family Housing	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0121	0.1091	0.0890	6.6000e-004		8.3200e-003	8.3200e-003		8.3200e-003	8.3200e-003		131.4428	131.4428	2.5200e-003	2.4100e-003	132.2239
NaturalGas Unmitigated	0.0121	0.1091	0.0890	6.6000e-004		8.3200e-003	8.3200e-003		8.3200e-003	8.3200e-003		131.4428	131.4428	2.5200e-003	2.4100e-003	132.2239

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	82.8493	8.9000e-004	8.1200e-003	6.8200e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.7470	9.7470	1.9000e-004	1.8000e-004	9.8049
Fast Food Restaurant w/o Drive Thru	393.645	4.2500e-003	0.0386	0.0324	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003		46.3112	46.3112	8.9000e-004	8.5000e-004	46.5864
Gasoline/Service Station	25.9917	2.8000e-004	2.5500e-003	2.1400e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		3.0578	3.0578	6.0000e-005	6.0000e-005	3.0760
General Light Industry	544.274	5.8700e-003	0.0534	0.0448	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003		64.0322	64.0322	1.2300e-003	1.1700e-003	64.4127
Single Family Housing	70.5033	7.6000e-004	6.5000e-003	2.7600e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.2945	8.2945	1.6000e-004	1.5000e-004	8.3438
Total		**0.0121**	**0.1091**	**0.0890**	**6.6000e-004**		**8.3300e-003**	**8.3300e-003**		**8.3300e-003**	**8.3300e-003**		**131.4428**	**131.4428**	**2.5300e-003**	**2.4100e-003**	**132.2238**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	0.0828493	8.9000e-004	8.1200e-003	6.8200e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.7470	9.7470	1.9000e-004	1.8000e-004	9.8049
Fast Food Restaurant w/o Drive Thru	0.393645	4.2500e-003	0.0386	0.0324	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003		46.3112	46.3112	8.9000e-004	8.5000e-004	46.5864
Gasoline/Service Station	0.0259917	2.8000e-004	2.5500e-003	2.1400e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		3.0578	3.0578	6.0000e-005	6.0000e-005	3.0760
General Light Industry	0.544274	5.8700e-003	0.0534	0.0448	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003		64.0322	64.0322	1.2300e-003	1.1700e-003	64.4127
Single Family Housing	0.0705033	7.6000e-004	6.5000e-003	2.7600e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.2945	8.2945	1.6000e-004	1.5000e-004	8.3438
Total		**0.0121**	**0.1091**	**0.0890**	**6.6000e-004**		**8.3300e-003**	**8.3300e-003**		**8.3300e-003**	**8.3300e-003**		**131.4428**	**131.4428**	**2.5300e-003**	**2.4100e-003**	**132.2238**

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	2.0210	0.0309	1.9738	3.4300e-003		0.2653	0.2653		0.2653	0.2653	27.7717	11.7998	39.5715	0.0258	2.1800e-003	40.8671
Unmitigated	2.0210	0.0309	1.9738	3.4300e-003		0.2653	0.2653		0.2653	0.2653	27.7717	11.7998	39.5715	0.0258	2.1800e-003	40.8671

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	0.1147					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3732					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.5304	0.0299	1.8891	3.4200e-003		0.2649	0.2649		0.2649	0.2649	27.7717	11.6471	39.4188	0.0256	2.1800e-003	40.7105
Landscaping	2.7000e-003	9.8000e-004	0.0847	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1527	0.1527	1.6000e-004		0.1566
Total	**2.0210**	**0.0309**	**1.9739**	**3.4200e-003**		**0.2653**	**0.2653**		**0.2653**	**0.2653**	**27.7717**	**11.7998**	**39.5715**	**0.0258**	**2.1800e-003**	**40.8671**

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	0.1147					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3732					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.5304	0.0299	1.8891	3.4200e-003		0.2649	0.2649		0.2649	0.2649	27.7717	11.6471	39.4188	0.0256	2.1800e-003	40.7105
Landscaping	2.7000e-003	9.8000e-004	0.0847	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1527	0.1527	1.6000e-004		0.1566
Total	**2.0210**	**0.0309**	**1.9739**	**3.4200e-003**		**0.2653**	**0.2653**		**0.2653**	**0.2653**	**27.7717**	**11.7998**	**39.5715**	**0.0258**	**2.1800e-003**	**40.8671**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 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

19223 Boron Beyond Food Mart - Existing Uses OPERATIONAL ANALYSIS ONLY

San Bernardino-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	11.83	1000sqft	0.27	11,825.00	0
Fast Food Restaurant w/o Drive Thru	1.45	1000sqft	0.03	1,450.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,800.00	3
Automobile Care Center	1.80	1000sqft	0.04	1,800.00	0
Gasoline/Service Station	4.00	Pump	0.01	564.70	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Existing Uses - OPERATIONAL ANALYSIS ONLY

Land Use - Per TIA, existing uses to be demoed - 11.825TSF light industrial, 1 SFD, auto care w/ 1 bay (per GE ~1.8TSF), gas station w/ 4 fueling pumps, & a 1.45 TSF fast-food rest w/o drive-thru.

Vehicle Trips - Per TIA weekday: 9.44trips/DU SFD, 10trips/TSF auto, 160trips/FP gas (w/pass-by), 435.17trips/TSF fast-food (w/pass-by), & 4.99trips/TSF ind. Sat/Sun from ITE 10th Ed. Pass-by (gas station & fast-food) changed 0 & split prmry/div.

Energy Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	DV_TP	37.00	43.00
tblVehicleTrips	DV_TP	27.00	57.00
tblVehicleTrips	PB_TP	12.00	0.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	51.00	57.00
tblVehicleTrips	PR_TP	14.00	43.00
tblVehicleTrips	ST_TR	23.72	6.93
tblVehicleTrips	ST_TR	696.00	616.12
tblVehicleTrips	ST_TR	168.56	182.17
tblVehicleTrips	ST_TR	1.32	1.99
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	11.88	1.13
tblVehicleTrips	SU_TR	500.00	472.58
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	23.72	10.00
tblVehicleTrips	WD_TR	716.00	435.17
tblVehicleTrips	WD_TR	168.56	160.00
tblVehicleTrips	WD_TR	6.97	4.99
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

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	2.0210	0.0309	1.9738	3.4300e-003		0.2653	0.2653		0.2653	0.2653	27.7717	11.7998	39.5715	0.0258	2.1800e-003	40.8671
Energy	0.0121	0.1091	0.0890	6.6000e-004		8.3200e-003	8.3200e-003		8.3200e-003	8.3200e-003		131.4428	131.4428	2.5200e-003	2.4100e-003	132.2239
Mobile	2.9204	19.4325	26.1999	0.0867	5.9511	0.0801	6.0311	1.5926	0.0753	1.6679		8,853.1526	8,853.1526	0.6506		8,869.4174
Total	**4.9535**	**19.5725**	**28.2627**	**0.0907**	**5.9511**	**0.3537**	**6.3048**	**1.5926**	**0.3490**	**1.9416**	**27.7717**	**8,996.3951**	**9,024.1668**	**0.6789**	**4.5900e-003**	**9,042.5084**

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	2.0210	0.0309	1.9738	3.4300e-003		0.2653	0.2653		0.2653	0.2653	27.7717	11.7998	39.5715	0.0258	2.1800e-003	40.8671
Energy	0.0121	0.1091	0.0890	6.6000e-004		8.3200e-003	8.3200e-003		8.3200e-003	8.3200e-003		131.4428	131.4428	2.5200e-003	2.4100e-003	132.2239
Mobile	2.9204	19.4325	26.1999	0.0867	5.9511	0.0801	6.0311	1.5926	0.0753	1.6679		8,853.1526	8,853.1526	0.6506		8,869.4174
Total	**4.9535**	**19.5725**	**28.2627**	**0.0907**	**5.9511**	**0.3537**	**6.3048**	**1.5926**	**0.3490**	**1.9416**	**27.7717**	**8,996.3951**	**9,024.1668**	**0.6789**	**4.5900e-003**	**9,042.5084**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.9204	19.4325	26.1999	0.0867	5.9511	0.0801	6.0311	1.5926	0.0753	1.6679		8,853.1526	8,853.1526	0.6506		8,869.4174
Unmitigated	2.9204	19.4325	26.1999	0.0867	5.9511	0.0801	6.0311	1.5926	0.0753	1.6679		8,853.1526	8,853.1526	0.6506		8,869.4174

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	18.00	12.47	2.03	17,160	17,160
Fast Food Restaurant w/o Drive Thru	631.00	893.37	685.24	1,120,909	1,120,909
Gasoline/Service Station	640.00	728.68	674.24	926,590	926,590
General Light Industry	59.01	23.53	8.04	180,262	180,262
Single Family Housing	9.44	9.54	8.55	34,132	34,132
Total	1,357.44	1,667.60	1,378.11	2,279,051	2,279,051

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	14.70	6.60	6.60	33.00	48.00	19.00	21	51	28
Fast Food Restaurant w/o Drive Thru	14.70	6.60	6.60	1.50	79.50	19.00	57	43	0
Gasoline/Service Station	14.70	6.60	6.60	2.00	79.00	19.00	43	57	0
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Single Family Housing	16.80	7.10	7.90	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Fast Food Restaurant w/o Drive Thru	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Gasoline/Service Station	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
General Light Industry	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Single Family Housing	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0121	0.1091	0.0890	6.6000e-004		8.3200e-003	8.3200e-003		8.3200e-003	8.3200e-003		131.4428	131.4428	2.5200e-003	2.4100e-003	132.2239
NaturalGas Unmitigated	0.0121	0.1091	0.0890	6.6000e-004		8.3200e-003	8.3200e-003		8.3200e-003	8.3200e-003		131.4428	131.4428	2.5200e-003	2.4100e-003	132.2239

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	82.8493	8.9000e-004	8.1200e-003	6.8200e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.7470	9.7470	1.9000e-004	1.8000e-004	9.8049
Fast Food Restaurant w/o Drive Thru	393.645	4.2500e-003	0.0386	0.0324	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003		46.3112	46.3112	8.9000e-004	8.5000e-004	46.5864
Gasoline/Service Station	25.9917	2.8000e-004	2.5500e-003	2.1400e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		3.0578	3.0578	6.0000e-005	6.0000e-005	3.0760
General Light Industry	544.274	5.8700e-003	0.0534	0.0448	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003		64.0322	64.0322	1.2300e-003	1.1700e-003	64.4127
Single Family Housing	70.5033	7.6000e-004	6.5000e-003	2.7600e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.2945	8.2945	1.6000e-004	1.5000e-004	8.3438
Total		**0.0121**	**0.1091**	**0.0890**	**6.6000e-004**		**8.3300e-003**	**8.3300e-003**		**8.3300e-003**	**8.3300e-003**		**131.4428**	**131.4428**	**2.5300e-003**	**2.4100e-003**	**132.2238**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	0.0828493	8.9000e-004	8.1200e-003	6.8200e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004		9.7470	9.7470	1.9000e-004	1.8000e-004	9.8049
Fast Food Restaurant w/o Drive Thru	0.393645	4.2500e-003	0.0386	0.0324	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003		46.3112	46.3112	8.9000e-004	8.5000e-004	46.5864
Gasoline/Service Station	0.0259917	2.8000e-004	2.5500e-003	2.1400e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		3.0578	3.0578	6.0000e-005	6.0000e-005	3.0760
General Light Industry	0.544274	5.8700e-003	0.0534	0.0448	3.2000e-004		4.0600e-003	4.0600e-003		4.0600e-003	4.0600e-003		64.0322	64.0322	1.2300e-003	1.1700e-003	64.4127
Single Family Housing	0.0705033	7.6000e-004	6.5000e-003	2.7600e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.2945	8.2945	1.6000e-004	1.5000e-004	8.3438
Total		**0.0121**	**0.1091**	**0.0890**	**6.6000e-004**		**8.3300e-003**	**8.3300e-003**		**8.3300e-003**	**8.3300e-003**		**131.4428**	**131.4428**	**2.5300e-003**	**2.4100e-003**	**132.2238**

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	2.0210	0.0309	1.9738	3.4300e-003		0.2653	0.2653		0.2653	0.2653	27.7717	11.7998	39.5715	0.0258	2.1800e-003	40.8671
Unmitigated	2.0210	0.0309	1.9738	3.4300e-003		0.2653	0.2653		0.2653	0.2653	27.7717	11.7998	39.5715	0.0258	2.1800e-003	40.8671

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	0.1147					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3732					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.5304	0.0299	1.8891	3.4200e-003		0.2649	0.2649		0.2649	0.2649	27.7717	11.6471	39.4188	0.0256	2.1800e-003	40.7105
Landscaping	2.7000e-003	9.8000e-004	0.0847	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1527	0.1527	1.6000e-004		0.1566
Total	**2.0210**	**0.0309**	**1.9739**	**3.4200e-003**		**0.2653**	**0.2653**		**0.2653**	**0.2653**	**27.7717**	**11.7998**	**39.5715**	**0.0258**	**2.1800e-003**	**40.8671**

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	0.1147					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3732					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.5304	0.0299	1.8891	3.4200e-003		0.2649	0.2649		0.2649	0.2649	27.7717	11.6471	39.4188	0.0256	2.1800e-003	40.7105
Landscaping	2.7000e-003	9.8000e-004	0.0847	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1527	0.1527	1.6000e-004		0.1566
Total	**2.0210**	**0.0309**	**1.9739**	**3.4200e-003**		**0.2653**	**0.2653**		**0.2653**	**0.2653**	**27.7717**	**11.7998**	**39.5715**	**0.0258**	**2.1800e-003**	**40.8671**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 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

19223 Boron Beyond Food Mart

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.18	Acre	2.18	94,960.80	0
Other Non-Asphalt Surfaces	23.82	1000sqft	0.55	23,824.00	0
Gasoline/Service Station	28.00	Pump	0.09	7,250.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2021
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

19223 Boron Beyond Food Mart - San Bernardino-Mojave Desert County, Annual

Project Characteristics -

Land Use - Project area is ~2.82 acres w/ a 7,250 sf convenience store with drive-through and 28 fuel pumps, 23,824 sf landscaping, & remainder is paving (includes parking lot w/ 38 spaces (28 under canopy).

Construction Phase - Construction anticipated to start November 2020 and take approximately 8 months.

Off-road Equipment - CalEEMod default timing for building construction phase decreased by ~40%; therefore, ~40% more equipment added to CalEEmod default list for building construction phase.

Off-road Equipment - Site prep of only ~40% of site to remove existing asphalt surfaces/hardscape.

Trips and VMT -

Demolition - Demolition of an ~2,200 sf existing commercial building.

Grading - Site prep of only ~40% of site (~1.13 ac) to remove exsiting asphalt surface/hardscape. Site anticipated to balance.

Vehicle Trips - Per TIA, 193.46 trips/FP/weekday (w/ pass-by ~10.8% daily rdxn). Per ITE 10th Ed Manual (ITE 960), 700 trips/TSF Saturday = 181.25 trips/FP. CalEEMod default rate used for Sunday. Pass-by changed to 0 & split between primary/diverted.

Sequestration - ~6 new trees to be planted.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Sidewalks provided on-site.

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

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

19223 Boron Beyond Food Mart - San Bernardino-Mojave Desert County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	132.00
tblGrading	AcresOfGrading	0.00	1.13
tblLandUse	LandUseSquareFeet	3,952.90	7,250.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSequestration	NumberOfNewTrees	0.00	6.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblVehicleTrips	DV_TP	27.00	57.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	14.00	43.00
tblVehicleTrips	ST_TR	168.56	181.25
tblVehicleTrips	WD_TR	168.56	193.46

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	0.0527	0.4594	0.3531	6.5000e-004	0.0294	0.0239	0.0534	0.0125	0.0225	0.0350	0.0000	56.5517	56.5517	0.0119	0.0000	56.8496
2021	0.3061	1.3606	1.3301	2.6100e-003	0.0471	0.0652	0.1123	0.0127	0.0622	0.0749	0.0000	223.4504	223.4504	0.0370	0.0000	224.3747
Maximum	**0.3061**	**1.3606**	**1.3301**	**2.6100e-003**	**0.0471**	**0.0652**	**0.1123**	**0.0127**	**0.0622**	**0.0749**	**0.0000**	**223.4504**	**223.4504**	**0.0370**	**0.0000**	**224.3747**

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	0.0527	0.4594	0.3531	6.5000e-004	0.0164	0.0239	0.0404	6.2000e-003	0.0225	0.0287	0.0000	56.5516	56.5516	0.0119	0.0000	56.8495
2021	0.3061	1.3606	1.3301	2.6100e-003	0.0471	0.0652	0.1123	0.0127	0.0622	0.0749	0.0000	223.4502	223.4502	0.0370	0.0000	224.3745
Maximum	**0.3061**	**1.3606**	**1.3301**	**2.6100e-003**	**0.0471**	**0.0652**	**0.1123**	**0.0127**	**0.0622**	**0.0749**	**0.0000**	**223.4502**	**223.4502**	**0.0370**	**0.0000**	**224.3745**

	ROG	NOx	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**	**17.02**	**0.00**	**7.86**	**25.02**	**0.00**	**5.73**	**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	11-1-2020	1-31-2021	0.7790	0.7790
2	2-1-2021	4-30-2021	0.7983	0.7983
3	5-1-2021	7-31-2021	0.6003	0.6003
		Highest	0.7983	0.7983

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	0.0486	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.6000e-004	9.6000e-004	0.0000	0.0000	1.0300e-003
Energy	6.6000e-004	5.9700e-003	5.0200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	11.9513	11.9513	3.5000e-004	1.7000e-004	12.0095
Mobile	1.4129	10.1374	12.5453	0.0437	2.8270	0.0318	2.8588	0.7577	0.0298	0.7875	0.0000	4,054.6543	4,054.6543	0.2929	0.0000	4,061.9765
Waste						0.0000	0.0000		0.0000	0.0000	3.0631	0.0000	3.0631	0.1810	0.0000	7.5888
Water						0.0000	0.0000		0.0000	0.0000	0.1180	2.3498	2.4677	0.0122	3.1000e-004	2.8644
Total	**1.4621**	**10.1433**	**12.5509**	**0.0437**	**2.8270**	**0.0323**	**2.8593**	**0.7577**	**0.0303**	**0.7880**	**3.1811**	**4,068.9563**	**4,072.1374**	**0.4865**	**4.8000e-004**	**4,084.4401**

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	0.0486	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.6000e-004	9.6000e-004	0.0000	0.0000	1.0300e-003
Energy	6.6000e-004	5.9700e-003	5.0200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	11.9513	11.9513	3.5000e-004	1.7000e-004	12.0095
Mobile	1.4097	10.1088	12.4675	0.0433	2.7987	0.0316	2.8303	0.7501	0.0296	0.7797	0.0000	4,023.8332	4,023.8332	0.2918	0.0000	4,031.1288
Waste						0.0000	0.0000		0.0000	0.0000	0.7658	0.0000	0.7658	0.0453	0.0000	1.8972
Water						0.0000	0.0000		0.0000	0.0000	0.0944	2.0412	2.1356	9.7800e-003	2.5000e-004	2.4535
Total	**1.4590**	**10.1148**	**12.4730**	**0.0434**	**2.7987**	**0.0320**	**2.8308**	**0.7501**	**0.0300**	**0.7802**	**0.8602**	**4,037.8266**	**4,038.6868**	**0.3472**	**4.2000e-004**	**4,047.4899**

	ROG	NOx	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	**0.22**	**0.28**	**0.62**	**0.78**	**1.00**	**0.77**	**1.00**	**1.00**	**0.79**	**0.99**	**72.96**	**0.77**	**0.82**	**28.63**	**12.50**	**0.90**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	4.2480
Total	**4.2480**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2020	11/27/2020	5	20	
2	Site Preparation	Site Preparation	11/28/2020	12/2/2020	5	3	
3	Grading	Grading	12/3/2020	12/10/2020	5	6	
4	Building Construction	Building Construction	12/11/2020	6/14/2021	5	132	
5	Paving	Paving	6/3/2021	6/16/2021	5	10	
6	Architectural Coating	Architectural Coating	6/17/2021	6/30/2021	5	10	

Acres of Grading (Site Preparation Phase): 1.13

Acres of Grading (Grading Phase): 3

Acres of Paving: 2.73

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 10,875; Non-Residential Outdoor: 3,625; Striped Parking Area: 7,127 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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
Demolition	5	13.00	0.00	10.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	52.00	21.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					1.1000e-003	0.0000	1.1000e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0677	21.0677	5.4200e-003	0.0000	21.2031
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**	**1.1000e-003**	**0.0115**	**0.0126**	**1.7000e-004**	**0.0108**	**0.0109**	**0.0000**	**21.0677**	**21.0677**	**5.4200e-003**	**0.0000**	**21.2031**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.2600e-003	1.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.3736	0.3736	2.0000e-005	0.0000	0.3741
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	5.7000e-004	5.6600e-003	2.0000e-005	1.6300e-003	1.0000e-005	1.6400e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.3925	1.3925	4.0000e-005	0.0000	1.3936
Total	**7.4000e-004**	**1.8300e-003**	**5.8500e-003**	**2.0000e-005**	**1.7200e-003**	**1.0000e-005**	**1.7300e-003**	**4.5000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.7661**	**1.7661**	**6.0000e-005**	**0.0000**	**1.7677**

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					4.3000e-004	0.0000	4.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0676	21.0676	5.4200e-003	0.0000	21.2030
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**	**4.3000e-004**	**0.0115**	**0.0120**	**6.0000e-005**	**0.0108**	**0.0108**	**0.0000**	**21.0676**	**21.0676**	**5.4200e-003**	**0.0000**	**21.2030**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.2600e-003	1.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.3736	0.3736	2.0000e-005	0.0000	0.3741
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	5.7000e-004	5.6600e-003	2.0000e-005	1.6300e-003	1.0000e-005	1.6400e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.3925	1.3925	4.0000e-005	0.0000	1.3936
Total	**7.4000e-004**	**1.8300e-003**	**5.8500e-003**	**2.0000e-005**	**1.7200e-003**	**1.0000e-005**	**1.7300e-003**	**4.5000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.7661**	**1.7661**	**6.0000e-005**	**0.0000**	**1.7677**

3.3 Site Preparation - 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					6.0000e-004	0.0000	6.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	2.7600e-003	2.9900e-003	0.0000		1.7000e-004	1.7000e-004		1.6000e-004	1.6000e-004	0.0000	0.3581	0.3581	1.2000e-004	0.0000	0.3610
Total	**2.7000e-004**	**2.7600e-003**	**2.9900e-003**	**0.0000**	**6.0000e-004**	**1.7000e-004**	**7.7000e-004**	**6.0000e-005**	**1.6000e-004**	**2.2000e-004**	**0.0000**	**0.3581**	**0.3581**	**1.2000e-004**	**0.0000**	**0.3610**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.2000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1285	0.1285	0.0000	0.0000	0.1286
Total	**7.0000e-005**	**5.0000e-005**	**5.2000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1285**	**0.1285**	**0.0000**	**0.0000**	**0.1286**

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					2.3000e-004	0.0000	2.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	2.7600e-003	2.9900e-003	0.0000		1.7000e-004	1.7000e-004		1.6000e-004	1.6000e-004	0.0000	0.3581	0.3581	1.2000e-004	0.0000	0.3610
Total	**2.7000e-004**	**2.7600e-003**	**2.9900e-003**	**0.0000**	**2.3000e-004**	**1.7000e-004**	**4.0000e-004**	**3.0000e-005**	**1.6000e-004**	**1.9000e-004**	**0.0000**	**0.3581**	**0.3581**	**1.2000e-004**	**0.0000**	**0.3610**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.2000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1285	0.1285	0.0000	0.0000	0.1286
Total	**7.0000e-005**	**5.0000e-005**	**5.2000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1285**	**0.1285**	**0.0000**	**0.0000**	**0.1286**

3.4 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**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.3000e-004	1.3100e-003	0.0000	3.8000e-004	0.0000	3.8000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3214	0.3214	1.0000e-005	0.0000	0.3216
Total	**1.6000e-004**	**1.3000e-004**	**1.3100e-003**	**0.0000**	**3.8000e-004**	**0.0000**	**3.8000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3214**	**0.3214**	**1.0000e-005**	**0.0000**	**0.3216**

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**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.3000e-004	1.3100e-003	0.0000	3.8000e-004	0.0000	3.8000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3214	0.3214	1.0000e-005	0.0000	0.3216
Total	**1.6000e-004**	**1.3000e-004**	**1.3100e-003**	**0.0000**	**3.8000e-004**	**0.0000**	**3.8000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3214**	**0.3214**	**1.0000e-005**	**0.0000**	**0.3216**

3.5 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	0.0219	0.1629	0.1456	2.3000e-004		9.1500e-003	9.1500e-003		8.7400e-003	8.7400e-003	0.0000	19.4011	19.4011	4.1500e-003	0.0000	19.5048
Total	**0.0219**	**0.1629**	**0.1456**	**2.3000e-004**		**9.1500e-003**	**9.1500e-003**		**8.7400e-003**	**8.7400e-003**	**0.0000**	**19.4011**	**19.4011**	**4.1500e-003**	**0.0000**	**19.5048**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8000e-004	0.0166	3.4600e-003	4.0000e-005	9.5000e-004	7.0000e-005	1.0200e-003	2.7000e-004	7.0000e-005	3.4000e-004	0.0000	3.8979	3.8979	2.8000e-004	0.0000	3.9048
Worker	2.1400e-003	1.7100e-003	0.0170	5.0000e-005	4.8900e-003	3.0000e-005	4.9200e-003	1.3000e-003	3.0000e-005	1.3300e-003	0.0000	4.1776	4.1776	1.2000e-004	0.0000	4.1807
Total	**2.6200e-003**	**0.0183**	**0.0204**	**9.0000e-005**	**5.8400e-003**	**1.0000e-004**	**5.9400e-003**	**1.5700e-003**	**1.0000e-004**	**1.6700e-003**	**0.0000**	**8.0755**	**8.0755**	**4.0000e-004**	**0.0000**	**8.0855**

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	0.0219	0.1629	0.1456	2.3000e-004		9.1500e-003	9.1500e-003		8.7400e-003	8.7400e-003	0.0000	19.4010	19.4010	4.1500e-003	0.0000	19.5048
Total	**0.0219**	**0.1629**	**0.1456**	**2.3000e-004**		**9.1500e-003**	**9.1500e-003**		**8.7400e-003**	**8.7400e-003**	**0.0000**	**19.4010**	**19.4010**	**4.1500e-003**	**0.0000**	**19.5048**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8000e-004	0.0166	3.4600e-003	4.0000e-005	9.5000e-004	7.0000e-005	1.0200e-003	2.7000e-004	7.0000e-005	3.4000e-004	0.0000	3.8979	3.8979	2.8000e-004	0.0000	3.9048
Worker	2.1400e-003	1.7100e-003	0.0170	5.0000e-005	4.8900e-003	3.0000e-005	4.9200e-003	1.3000e-003	3.0000e-005	1.3300e-003	0.0000	4.1776	4.1776	1.2000e-004	0.0000	4.1807
Total	**2.6200e-003**	**0.0183**	**0.0204**	**9.0000e-005**	**5.8400e-003**	**1.0000e-004**	**5.9400e-003**	**1.5700e-003**	**1.0000e-004**	**1.6700e-003**	**0.0000**	**8.0755**	**8.0755**	**4.0000e-004**	**0.0000**	**8.0855**

3.5 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	0.1522	1.1694	1.1114	1.8300e-003		0.0613	0.0613		0.0586	0.0586	0.0000	151.3361	151.3361	0.0314	0.0000	152.1218
Total	**0.1522**	**1.1694**	**1.1114**	**1.8300e-003**		**0.0613**	**0.0613**		**0.0586**	**0.0586**	**0.0000**	**151.3361**	**151.3361**	**0.0314**	**0.0000**	**152.1218**

3.5 Building Construction - 2021

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	3.2000e-003	0.1179	0.0240	3.2000e-004	7.4100e-003	2.0000e-004	7.6100e-003	2.1400e-003	1.9000e-004	2.3300e-003	0.0000	30.2413	30.2413	2.0900e-003	0.0000	30.2935
Worker	0.0155	0.0120	0.1217	3.5000e-004	0.0381	2.5000e-004	0.0384	0.0101	2.3000e-004	0.0104	0.0000	31.5476	31.5476	8.8000e-004	0.0000	31.5695
Total	**0.0187**	**0.1299**	**0.1457**	**6.7000e-004**	**0.0455**	**4.5000e-004**	**0.0460**	**0.0123**	**4.2000e-004**	**0.0127**	**0.0000**	**61.7889**	**61.7889**	**2.9700e-003**	**0.0000**	**61.8630**

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	0.1522	1.1694	1.1114	1.8300e-003		0.0613	0.0613		0.0586	0.0586	0.0000	151.3359	151.3359	0.0314	0.0000	152.1217
Total	**0.1522**	**1.1694**	**1.1114**	**1.8300e-003**		**0.0613**	**0.0613**		**0.0586**	**0.0586**	**0.0000**	**151.3359**	**151.3359**	**0.0314**	**0.0000**	**152.1217**

3.5 Building Construction - 2021

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	3.2000e-003	0.1179	0.0240	3.2000e-004	7.4100e-003	2.0000e-004	7.6100e-003	2.1400e-003	1.9000e-004	2.3300e-003	0.0000	30.2413	30.2413	2.0900e-003	0.0000	30.2935
Worker	0.0155	0.0120	0.1217	3.5000e-004	0.0381	2.5000e-004	0.0384	0.0101	2.3000e-004	0.0104	0.0000	31.5476	31.5476	8.8000e-004	0.0000	31.5695
Total	**0.0187**	**0.1299**	**0.1457**	**6.7000e-004**	**0.0455**	**4.5000e-004**	**0.0460**	**0.0123**	**4.2000e-004**	**0.0127**	**0.0000**	**61.7889**	**61.7889**	**2.9700e-003**	**0.0000**	**61.8630**

3.6 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	2.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.1800e-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**

3.6 Paving - 2021

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	3.8000e-004	2.9000e-004	3.0000e-003	1.0000e-005	9.4000e-004	1.0000e-005	9.5000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.7778	0.7778	2.0000e-005	0.0000	0.7783
Total	**3.8000e-004**	**2.9000e-004**	**3.0000e-003**	**1.0000e-005**	**9.4000e-004**	**1.0000e-005**	**9.5000e-004**	**2.5000e-004**	**1.0000e-005**	**2.6000e-004**	**0.0000**	**0.7778**	**0.7778**	**2.0000e-005**	**0.0000**	**0.7783**

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	2.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.1800e-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**

3.6 Paving - 2021

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	3.8000e-004	2.9000e-004	3.0000e-003	1.0000e-005	9.4000e-004	1.0000e-005	9.5000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.7778	0.7778	2.0000e-005	0.0000	0.7783
Total	**3.8000e-004**	**2.9000e-004**	**3.0000e-003**	**1.0000e-005**	**9.4000e-004**	**1.0000e-005**	**9.5000e-004**	**2.5000e-004**	**1.0000e-005**	**2.6000e-004**	**0.0000**	**0.7778**	**0.7778**	**2.0000e-005**	**0.0000**	**0.7783**

3.7 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	0.1253					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	**0.1264**	**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**

3.7 Architectural Coating - 2021

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	2.6000e-004	2.0000e-004	2.0000e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5185	0.5185	1.0000e-005	0.0000	0.5189
Total	**2.6000e-004**	**2.0000e-004**	**2.0000e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5185**	**0.5185**	**1.0000e-005**	**0.0000**	**0.5189**

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	0.1253					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	**0.1264**	**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**

3.7 Architectural Coating - 2021

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	2.6000e-004	2.0000e-004	2.0000e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5185	0.5185	1.0000e-005	0.0000	0.5189
Total	**2.6000e-004**	**2.0000e-004**	**2.0000e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5185**	**0.5185**	**1.0000e-005**	**0.0000**	**0.5189**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4097	10.1088	12.4675	0.0433	2.7987	0.0316	2.8303	0.7501	0.0296	0.7797	0.0000	4,023.8332	4,023.8332	0.2918	0.0000	4,031.1288
Unmitigated	1.4129	10.1374	12.5453	0.0437	2.8270	0.0318	2.8588	0.7577	0.0298	0.7875	0.0000	4,054.6543	4,054.6543	0.2929	0.0000	4,061.9765

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Gasoline/Service Station	5,416.88	5,075.00	4719.68	7,423,934	7,349,694
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5,416.88	5,075.00	4,719.68	7,423,934	7,349,694

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
Gasoline/Service Station	14.70	6.60	6.60	2.00	79.00	19.00	43	57	0
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	14.70	6.60	6.60	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
Gasoline/Service Station	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Other Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010
Other Non-Asphalt Surfaces	0.549952	0.037123	0.179649	0.119457	0.017229	0.005267	0.017877	0.062669	0.001348	0.001607	0.006000	0.000812	0.001010

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5.4516	5.4516	2.3000e-004	5.0000e-005	5.4711
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5.4516	5.4516	2.3000e-004	5.0000e-005	5.4711
NaturalGas Mitigated	6.6000e-004	5.9700e-003	5.0200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4997	6.4997	1.2000e-004	1.2000e-004	6.5383
NaturalGas Unmitigated	6.6000e-004	5.9700e-003	5.0200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4997	6.4997	1.2000e-004	1.2000e-004	6.5383

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					
Gasoline/Service Station	121800	6.6000e-004	5.9700e-003	5.0200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4997	6.4997	1.2000e-004	1.2000e-004	6.5383
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		**6.6000e-004**	**5.9700e-003**	**5.0200e-003**	**4.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**6.4997**	**6.4997**	**1.2000e-004**	**1.2000e-004**	**6.5383**

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					
Gasoline/Service Station	121800	6.6000e-004	5.9700e-003	5.0200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4997	6.4997	1.2000e-004	1.2000e-004	6.5383
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		**6.6000e-004**	**5.9700e-003**	**5.0200e-003**	**4.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**6.4997**	**6.4997**	**1.2000e-004**	**1.2000e-004**	**6.5383**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Gasoline/Service Station	17110	5.4516	2.3000e-004	5.0000e-005	5.4711
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**5.4516**	**2.3000e-004**	**5.0000e-005**	**5.4711**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Gasoline/Service Station	17110	5.4516	2.3000e-004	5.0000e-005	5.4711
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**5.4516**	**2.3000e-004**	**5.0000e-005**	**5.4711**

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	0.0486	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.6000e-004	9.6000e-004	0.0000	0.0000	1.0300e-003
Unmitigated	0.0486	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.6000e-004	9.6000e-004	0.0000	0.0000	1.0300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0125					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0360					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.6000e-004	9.6000e-004	0.0000	0.0000	1.0300e-003
Total	**0.0486**	**0.0000**	**5.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.6000e-004**	**9.6000e-004**	**0.0000**	**0.0000**	**1.0300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0125					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0360					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.6000e-004	9.6000e-004	0.0000	0.0000	1.0300e-003
Total	**0.0486**	**0.0000**	**5.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.6000e-004**	**9.6000e-004**	**0.0000**	**0.0000**	**1.0300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.1356	9.7800e-003	2.5000e-004	2.4535
Unmitigated	2.4677	0.0122	3.1000e-004	2.8644

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Gasoline/Service Station	0.371893 / 0.227934	2.4677	0.0122	3.1000e-004	2.8644
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		**2.4677**	**0.0122**	**3.1000e-004**	**2.8644**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Gasoline/Service Station	0.297514 / 0.227934	2.1356	9.7800e-003	2.5000e-004	2.4535
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		**2.1356**	**9.7800e-003**	**2.5000e-004**	**2.4535**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.7658	0.0453	0.0000	1.8972
Unmitigated	3.0631	0.1810	0.0000	7.5888

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Gasoline/Service Station	15.09	3.0631	0.1810	0.0000	7.5888
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		**3.0631**	**0.1810**	**0.0000**	**7.5888**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Gasoline/Service Station	3.7725	0.7658	0.0453	0.0000	1.8972
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		**0.7658**	**0.0453**	**0.0000**	**1.8972**

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

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	4.2480	0.0000	0.0000	4.2480

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	6	4.2480	0.0000	0.0000	4.2480
Total		**4.2480**	**0.0000**	**0.0000**	**4.2480**

19223 Boron Beyond Food Mart - Existing Uses OPERATIONAL ANALYSIS ONLY

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	11.83	1000sqft	0.27	11,825.00	0
Fast Food Restaurant w/o Drive Thru	1.45	1000sqft	0.03	1,450.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,800.00	3
Automobile Care Center	1.80	1000sqft	0.04	1,800.00	0
Gasoline/Service Station	4.00	Pump	0.01	564.70	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Existing Uses - OPERATIONAL ANALYSIS ONLY

Land Use - Per TIA, existing uses to be demoed - 11.825TSF light industrial, 1 SFD, auto care w/ 1 bay (per GE ~1.8TSF), gas station w/ 4 fueling pumps, & a 1.45 TSF fast-food rest w/o drive-thru.

Vehicle Trips - Per TIA weekday: 9.44trips/DU SFD, 10trips/TSF auto, 160trips/FP gas (w/pass-by), 435.17trips/TSF fast-food (w/pass-by), & 4.99trips/TSF ind. Sat/Sun from ITE 10th Ed. Pass-by (gas station & fast-food) changed 0 & split prmry/div.

Energy Use -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	DV_TP	37.00	43.00
tblVehicleTrips	DV_TP	27.00	57.00
tblVehicleTrips	PB_TP	12.00	0.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PR_TP	51.00	57.00
tblVehicleTrips	PR_TP	14.00	43.00
tblVehicleTrips	ST_TR	23.72	6.93
tblVehicleTrips	ST_TR	696.00	616.12
tblVehicleTrips	ST_TR	168.56	182.17
tblVehicleTrips	ST_TR	1.32	1.99
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	11.88	1.13
tblVehicleTrips	SU_TR	500.00	472.58
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	23.72	10.00
tblVehicleTrips	WD_TR	716.00	435.17
tblVehicleTrips	WD_TR	168.56	160.00
tblVehicleTrips	WD_TR	6.97	4.99
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

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	0.1520	1.3100e-003	0.0851	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4457	1.4786	9.7000e-004	8.0000e-005	1.5270
Energy	2.2000e-003	0.0199	0.0162	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	50.6424	50.6424	1.6100e-003	6.5000e-004	50.8750
Mobile	0.4220	2.9692	3.9951	0.0132	0.8678	0.0118	0.8796	0.2326	0.0111	0.2437	0.0000	1,226.2136	1,226.2136	0.0855	0.0000	1,228.3515
Waste						0.0000	0.0000		0.0000	0.0000	8.4505	0.0000	8.4505	0.4994	0.0000	20.9358
Water						0.0000	0.0000		0.0000	0.0000	1.0981	15.0869	16.1850	0.1134	2.7900e-003	19.8521
Total	**0.5762**	**2.9904**	**4.0964**	**0.0135**	**0.8678**	**0.0242**	**0.8921**	**0.2326**	**0.0235**	**0.2561**	**10.5815**	**1,292.3886**	**1,302.9701**	**0.7009**	**3.5200e-003**	**1,321.5414**

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	0.1520	1.3100e-003	0.0851	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4457	1.4786	9.7000e-004	8.0000e-005	1.5270
Energy	2.2000e-003	0.0199	0.0162	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	50.6424	50.6424	1.6100e-003	6.5000e-004	50.8750

Mobile	0.4220	2.9692	3.9951	0.0132	0.8678	0.0118	0.8796	0.2326	0.0111	0.2437	0.0000	1,226.2136	1,226.2136	0.0855	0.0000	1,228.3515
Waste						0.0000	0.0000		0.0000	0.0000	8.4505	0.0000	8.4505	0.4994	0.0000	20.9358
Water						0.0000	0.0000		0.0000	0.0000	1.0981	15.0869	16.1850	0.1134	2.7900e-003	19.8521
Total	**0.5762**	**2.9904**	**4.0964**	**0.0135**	**0.8678**	**0.0242**	**0.8921**	**0.2326**	**0.0235**	**0.2561**	**10.5815**	**1,292.3886**	**1,302.9701**	**0.7009**	**3.5200e-003**	**1,321.5414**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4220	2.9692	3.9951	0.0132	0.8678	0.0118	0.8796	0.2326	0.0111	0.2437	0.0000	1,226.2136	1,226.2136	0.0855	0.0000	1,228.3515
Unmitigated	0.4220	2.9692	3.9951	0.0132	0.8678	0.0118	0.8796	0.2326	0.0111	0.2437	0.0000	1,226.2136	1,226.2136	0.0855	0.0000	1,228.3515

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	18.00	12.47	2.03	17,160	17,160
Fast Food Restaurant w/o Drive Thru	631.00	893.37	685.24	1,120,909	1,120,909
Gasoline/Service Station	640.00	728.68	674.24	926,590	926,590
General Light Industry	59.01	23.53	8.04	180,262	180,262
Single Family Housing	9.44	9.54	8.55	34,132	34,132
Total	1,357.44	1,667.60	1,378.11	2,279,051	2,279,051

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	14.70	6.60	6.60	33.00	48.00	19.00	21	51	28
Fast Food Restaurant w/o Drive Thru	14.70	6.60	6.60	1.50	79.50	19.00	57	43	0

Gasoline/Service Station	14.70	6.60	6.60	2.00	79.00	19.00	43	57	0
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Single Family Housing	16.80	7.10	7.90	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Fast Food Restaurant w/o Drive Thru	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Gasoline/Service Station	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
General Light Industry	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082
Single Family Housing	0.546179	0.037976	0.179086	0.122965	0.018430	0.005460	0.017497	0.061396	0.001337	0.001657	0.006117	0.000817	0.001082

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	28.8806	28.8806	1.1900e-003	2.5000e-004	28.9839
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	28.8806	28.8806	1.1900e-003	2.5000e-004	28.9839
NaturalGas Mitigated	2.2000e-003	0.0199	0.0162	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.7618	21.7618	4.2000e-004	4.0000e-004	21.8911
NaturalGas Unmitigated	2.2000e-003	0.0199	0.0162	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.7618	21.7618	4.2000e-004	4.0000e-004	21.8911

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	30240	1.6000e-004	1.4800e-003	1.2500e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.6137	1.6137	3.0000e-005	3.0000e-005	1.6233
Fast Food Restaurant w/o Drive Thru	143681	7.7000e-004	7.0400e-003	5.9200e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004	0.0000	7.6673	7.6673	1.5000e-004	1.4000e-004	7.7129
Gasoline/Service Station	9486.96	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5063	0.5063	1.0000e-005	1.0000e-005	0.5093
General Light Industry	198660	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6013	10.6013	2.0000e-004	1.9000e-004	10.6643
Single Family Housing	25733.7	1.4000e-004	1.1900e-003	5.0000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3733	1.3733	3.0000e-005	3.0000e-005	1.3814
Total		**2.1900e-003**	**0.0199**	**0.0162**	**1.2000e-004**		**1.5300e-003**	**1.5300e-003**		**1.5300e-003**	**1.5300e-003**	**0.0000**	**21.7618**	**21.7618**	**4.2000e-004**	**4.0000e-004**	**21.8911**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	30240	1.6000e-004	1.4800e-003	1.2500e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.6137	1.6137	3.0000e-005	3.0000e-005	1.6233
Fast Food Restaurant w/o Drive Thru	143681	7.7000e-004	7.0400e-003	5.9200e-003	4.0000e-005		5.4000e-004	5.4000e-004		5.4000e-004	5.4000e-004	0.0000	7.6673	7.6673	1.5000e-004	1.4000e-004	7.7129
Gasoline/Service Station	9486.96	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5063	0.5063	1.0000e-005	1.0000e-005	0.5093
General Light Industry	198660	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6013	10.6013	2.0000e-004	1.9000e-004	10.6643
Single Family Housing	25733.7	1.4000e-004	1.1900e-003	5.0000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3733	1.3733	3.0000e-005	3.0000e-005	1.3814
Total		**2.1900e-003**	**0.0199**	**0.0162**	**1.2000e-004**		**1.5300e-003**	**1.5300e-003**		**1.5300e-003**	**1.5300e-003**	**0.0000**	**21.7618**	**21.7618**	**4.2000e-004**	**4.0000e-004**	**21.8911**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
Automobile Care Center	4248	1.3535	6.0000e-005	1.0000e-005	1.3584
Fast Food Restaurant w/o Drive Thru	48560.5	15.4724	6.4000e-004	1.3000e-004	15.5278
Gasoline/Service Station	1332.69	0.4246	2.0000e-005	0.0000	0.4261
General Light Industry	27907	8.8918	3.7000e-004	8.0000e-005	8.9236
Single Family Housing	8594.06	2.7383	1.1000e-004	2.0000e-005	2.7481
Total		**28.8806**	**1.2000e-003**	**2.4000e-004**	**28.9839**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	4248	1.3535	6.0000e-005	1.0000e-005	1.3584
Fast Food Restaurant w/o Drive Thru	48560.5	15.4724	6.4000e-004	1.3000e-004	15.5278
Gasoline/Service Station	1332.69	0.4246	2.0000e-005	0.0000	0.4261
General Light Industry	27907	8.8918	3.7000e-004	8.0000e-005	8.9236
Single Family Housing	8594.06	2.7383	1.1000e-004	2.0000e-005	2.7481
Total		**28.8806**	**1.2000e-003**	**2.4000e-004**	**28.9839**

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	0.1520	1.3100e-003	0.0851	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4457	1.4786	9.7000e-004	8.0000e-005	1.5270
Unmitigated	0.1520	1.3100e-003	0.0851	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4457	1.4786	9.7000e-004	8.0000e-005	1.5270

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0209					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0681					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0628	1.2300e-003	0.0775	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4332	1.4662	9.5000e-004	8.0000e-005	1.5142
Landscaping	2.4000e-004	9.0000e-005	7.6300e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0125	0.0125	1.0000e-005	0.0000	0.0128
Total	**0.1520**	**1.3200e-003**	**0.0851**	**1.4000e-004**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**1.0330**	**0.4457**	**1.4786**	**9.6000e-004**	**8.0000e-005**	**1.5270**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0209					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0681					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0628	1.2300e-003	0.0775	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4332	1.4662	9.5000e-004	8.0000e-005	1.5142
Landscaping	2.4000e-004	9.0000e-005	7.6300e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0125	0.0125	1.0000e-005	0.0000	0.0128
Total	**0.1520**	**1.3200e-003**	**0.0851**	**1.4000e-004**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**1.0330**	**0.4457**	**1.4786**	**9.6000e-004**	**8.0000e-005**	**1.5270**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	16.1850	0.1134	2.7900e-003	19.8521
Unmitigated	16.1850	0.1134	2.7900e-003	19.8521

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.169346 / 0.103793	1.1237	5.5600e-003	1.4000e-004	1.3043
Fast Food Restaurant w/o Drive Thru	0.440124 / 0.028093	2.0651	0.0144	3.6000e-004	2.5314
Gasoline/Service Station	0.0531276 / 0.0325621	0.3525	1.7500e-003	4.0000e-005	0.4092
General Light Industry	2.73338 / 0	12.2073	0.0895	2.2000e-003	15.1013

Single Family Housing	0.065154 / 0.0410754	0.4364	2.1400e-003	5.0000e-005	0.5059
Total		**16.1850**	**0.1134**	**2.7900e-003**	**19.8521**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.169346 / 0.103793	1.1237	5.5600e-003	1.4000e-004	1.3043
Fast Food Restaurant w/o Drive Thru	0.440124 / 0.028093	2.0651	0.0144	3.6000e-004	2.5314
Gasoline/Service Station	0.0531276 / 0.0325621	0.3525	1.7500e-003	4.0000e-005	0.4092
General Light Industry	2.73338 / 0	12.2073	0.0895	2.2000e-003	15.1013
Single Family Housing	0.065154 / 0.0410754	0.4364	2.1400e-003	5.0000e-005	0.5059
Total		**16.1850**	**0.1134**	**2.7900e-003**	**19.8521**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.4505	0.4994	0.0000	20.9358
Unmitigated	8.4505	0.4994	0.0000	20.9358

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	6.88	1.3966	0.0825	0.0000	3.4600
Fast Food Restaurant w/o Drive Thru	16.7	3.3900	0.2003	0.0000	8.3985
Gasoline/Service Station	2.16	0.4385	0.0259	0.0000	1.0863

General Light Industry	14.66	2.9759	0.1759	0.0000	7.3725
Single Family Housing	1.23	0.2497	0.0148	0.0000	0.6186
Total		**8.4505**	**0.4994**	**0.0000**	**20.9358**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	6.88	1.3966	0.0825	0.0000	3.4600
Fast Food Restaurant w/o Drive Thru	16.7	3.3900	0.2003	0.0000	8.3985
Gasoline/Service Station	2.16	0.4385	0.0259	0.0000	1.0863
General Light Industry	14.66	2.9759	0.1759	0.0000	7.3725
Single Family Housing	1.23	0.2497	0.0148	0.0000	0.6186
Total		**8.4505**	**0.4994**	**0.0000**	**20.9358**

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

PERFORMANCE STANDARDS

The GHG reducing performance standards were developed by the County to improve the energy efficiency, water conservation, vehicle trip reduction potential, and other GHG reducing impacts from all new development approved within the unincorporated portions of San Bernardino County. As such, the following Performance Standards establish the minimum level of compliance that development must meet to assist in meeting the 2020 GHG reduction target identified in the in the County GHG Emissions Reduction Plan. These Performance Standards apply to all Projects, including those that are exempt under CEQA, and will be included as Conditions of Approval for development projects.

The following are the Performance Standards (Conditions of Approval) used for Industrial, Commercial and Residential projects in the County:

COMMERCIAL AND INDUSTRIAL PROJECTS

1. *GHG – Operational Standards. The developer shall implement the following as greenhouse gas (GHG) mitigation during the operation of the approved project:*
   a) Waste Stream Reduction. The "developer" shall provide to all tenants and project employees County-approved informational materials about methods and need to reduce the solid waste stream and listing available recycling services.
   b) Vehicle Trip Reduction. The "developer" shall provide to all tenants and project employees County-approved informational materials about the need to reduce vehicle trips and the program elements this project is implementing. Such elements may include: participation in established ride-sharing programs, creating a new ride-share employee vanpool, designating preferred parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles with benches in waiting areas, and/or providing a web site or message board for coordinating rides.
   c) Provide Educational Materials. The developer shall provide to all tenants and staff education materials and other publicity about reducing waste and available recycling services. The education and publicity materials/program shall be submitted to County Planning for review and approval. The developer shall also provide to all tenants and require that the tenants shall display in their stores current transit route information for the project area in a visible and convenient

location for employees and customers. The specific transit routes displayed shall include Omni Trans Route 8, San Bernardino-Mentone-Yucaipa.

d) Landscape Equipment. The developer shall require in the landscape maintenance contract and/or in onsite procedures that a minimum of 20% of the landscape maintenance equipment shall be electric-powered.

2. *GHG – Construction Standards. The "developer" shall submit for review and obtain approval from County Planning of a signed letter agreeing to include as a condition of all construction contracts/subcontracts requirements to reduce GHG emissions and submitting documentation of compliance. The developer/construction contractors shall do the following:*

a) Implement the approved Coating Restriction Plans.

b) Select construction equipment based on low GHG emissions factors and high-energy efficiency. All diesel/gasoline-powered construction equipment shall be replaced, where possible, with equivalent electric or CNG equipment.

c) Grading contractor shall provide the implement the following when possible:

1) training operators to use equipment more efficiently.
2) identifying the proper size equipment for a task can also provide fuel savings and associated reductions in GHG emissions
3) replacing older, less fuel-efficient equipment with newer models
4) use GPS for grading to maximize efficiency

d) Grading plans shall include the following statements:

- *"All construction equipment engines shall be properly tuned and maintained in accordance with the manufacturers specifications prior to arriving on site and throughout construction duration."*
- *"All construction equipment (including electric generators) shall be shut off by work crews when not in use and shall not idle for more than 5 minutes."*

e) *Schedule construction traffic ingress/egress to not interfere with peak-hour traffic and to minimize traffic obstructions. Queuing of trucks on and off site shall be firmly discouraged and not scheduled. A flagperson shall be retained to maintain efficient traffic flow and safety adjacent to existing roadways.*

f) Recycle and reuse construction and demolition waste (e.g. soil, vegetation, concrete, lumber, metal, and cardboard) per County Solid Waste procedures.

g) The construction contractor shall support and encourage ridesharing and transit incentives for the construction crew and educate all construction workers about the required waste reduction and the availability of recycling services.

3. *GHG – Design Standards. The developer shall submit for review and obtain approval from County Planning that the following measures have been incorporated into the design of the project. These are intended to reduce potential project greenhouse gas (GHGs) emissions. Proper installation of the approved design features and equipment shall be confirmed by County Building and Safety prior to final inspection of each structure.*

   a) *Meet Title 24 Energy Efficiency requirements implemented July 1, 2014 The Developer shall document that the design of the proposed structures meets the current Title 24 energy-efficiency requirements. County Planning shall coordinate this review with the County Building and Safety. Any combination of the following design features may be used to fulfill this requirement, provided that the total increase in efficiency meets or exceeds the cumulative goal (100%+ of Title 24) for the entire project (Title 24, Part 6 of the California Code of Regulations; Energy Efficiency Standards for Residential and Non Residential Buildings, as amended January 24, 2013; Cool Roof Coatings performance standards as amended January 24, 2013):*

      - *Incorporate dual paned or other energy efficient windows,*
      - *Incorporate energy efficient space heating and cooling equipment,*
      - *Incorporate energy efficient light fixtures, photocells, and motion detectors,*
      - *Incorporate energy efficient appliances,*
      - *Incorporate energy efficient domestic hot water systems,*
      - *Incorporate solar panels into the electrical system,*
      - *Incorporate cool roofs/light colored roofing,*
      - *Incorporate other measures that will increase energy efficiency.*
      - *Increase insulation to reduce heat transfer and thermal bridging.*
      - *Limit air leakage throughout the structure and within the heating and cooling distribution system to minimize energy consumption.*

   b) *Plumbing. All plumbing shall incorporate the following:*

      - *All showerheads, lavatory faucets, and sink faucets shall comply with the California Energy Conservation flow rate standards.*
      - *Low flush toilets shall be installed where applicable as specified in California State Health and Safety Code Section 17921.3.*
      - *All hot water piping and storage tanks shall be insulated. Energy efficient boilers shall be used.*

   c) *Lighting. Lighting design for building interiors shall support the use of:*

- *Compact fluorescent light bulbs or equivalently efficient lighting.*
- *Natural day lighting through site orientation and the use of reflected light.*
- *Skylight/roof window systems.*
- *Light colored building materials and finishes shall be used to reflect natural and artificial light with greater efficiency and less glare.*
- *A multi-zone programmable dimming system shall be used to control lighting to maximize the energy efficiency of lighting requirements at various times of the day.*
- *Provide a minimum of 2.5 percent of the project's electricity needs by on-site solar panels.*

d) *Building Design. Building design and construction shall incorporate the following elements:*

- *Orient building locations to best utilize natural cooling/heating with respect to the sun and prevailing winds/natural convection to take advantage of shade, day lighting and natural cooling opportunities.*
- *Utilize natural, low maintenance building materials that do not require finishes and regular maintenance.*
- *Roofing materials shall have a solar reflectance index of 78 or greater.*
- *All supply duct work shall be sealed and leak-tested. Oval or round ducts shall be used for at least 75 percent of the supply duct work, excluding risers.*
- *Energy Star or equivalent appliances shall be installed.*
- *A building automation system including outdoor temperature/humidity sensors will control public area heating, vent, and air conditioning units*

e) *Landscaping. The developer shall submit for review and obtain approval from County Planning of landscape and irrigation plans that are designed to include drought tolerant and smog tolerant trees, shrubs, and groundcover to ensure the long-term viability and to conserve water and energy. The landscape plans shall include shade trees around main buildings, particularly along southern and western elevations, where practical.*

f) *Irrigation. The developer shall submit irrigation plans that are designed, so that all common area irrigation areas shall be capable of being operated by a computerized irrigation system, which includes either an on-site weather station, ET gauge or ET-based controller capable of reading current weather data and making automatic adjustments to independent run times for each irrigation valve based on changes in temperature, solar radiation, relative humidity, rain and wind. In addition, the*

computerized irrigation system shall be equipped with flow sensing capabilities, thus automatically shutting down the irrigation system in the event of a mainline break or broken head. These features will assist in conserving water, eliminating the potential of slope failure due to mainline breaks and eliminating over-watering and flooding due to pipe and/or head breaks.

g) *Recycling. Exterior storage areas for recyclables and green waste shall be provided. Where recycling pickup is available, adequate recycling containers shall be located in public areas. Construction and operation waste shall be collected for reuse and recycling.*

h) *Transportation Demand Management (TDM) Program. The project shall include adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. Preferred carpool/vanpool spaces shall be provided and, if available, mass transit facilities shall be provided (e.g. bus stop bench/shelter). The developer shall demonstrate that the TDM program has been instituted for the project or that the buildings will join an existing program located within a quarter mile radius from the project site* that provides a cumulative 20% reduction in unmitigated employee commute trips. *The TDM Program shall publish ride-sharing information for ride-sharing vehicles and provide a website or message board for coordinating rides. The Program shall ensure that appropriate bus route information is placed in each building.*

4. *GHG – Installation/Implementation Standards. The developer shall submit for review and obtain approval from County Planning of evidence that all applicable GHG performance standards have been installed, implemented properly and that specified performance objectives are being met to the satisfaction of County Planning and County Building and Safety. These installations/ procedures include the following:*

   a) *Design features and/or equipment that cumulatively increases the overall compliance of the project to exceed Title 24 minimum standards by five percent.*

   b) *All interior building lighting shall support the use of fluorescent light bulbs or equivalent energy-efficient lighting.*

   c) *Installation of both the identified mandatory and optional design features or equipment that have been constructed and incorporated into the facility/structure.*

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