

**503 WEST MISSION
COMMERCIAL PROJECT
AIR QUALITY, GLOBAL CLIMATE CHANGE,
AND ENERGY IMPACT ANALYSIS**

City of Escondido

February 22, 2024



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

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February 22, 2024

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EXECUTIVE SUMMARY

The purpose of this air quality, global climate change, and energy impact analysis is to provide an assessment of the impacts resulting from development of the proposed 503 West Mission Commercial project and to identify measures that may be necessary to reduce potentially significant impacts.

Standard Air Quality, Energy, and GHG Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the San Diego County Air Pollution Control District (SDAPCD) and State of California (State).

San Diego County Air Pollution Control District Rules

The following lists the SDAPCD rules that are applicable, but not limited to, the proposed project.

- Rule 20.2 Non-Major Stationary Sources – Controls the emissions of air contaminants;
- Sources – Controls the emissions of air contaminants;
- Rule 50 Visible Emissions – Controls visible emissions from all sources, including fugitive dust;
- Rule 51 Nuisance – Controls the emissions of odors and other air contaminants;
- Rule 55 Fugitive Dust Control – Controls the emissions of fugitive dust; and
- Rule 67.0.1 Architectural Coating – Establishes VOC content limits;

State of California Rules

The following lists the State of California Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to, the proposed project.

- CCR Title 13, Article 4.8, Chapter 9, Section 2449 – In use Off-Road Diesel Vehicles;
- CCR Title 13, Section 2025 – On-Road Diesel Truck Fleets;
- CCR Title 24 Part 6 – California Building Energy Standards; and
- CCR Title 24 Part 11 – California Green Building Standards

Construction-Source Emissions

Project construction-source emissions would not exceed applicable screening thresholds of significance established by the SDAPCD.

Project construction-source emissions would not conflict with the San Diego Regional Air Quality Strategy (RAQS) or the California State Implementation Plan (SIP). As discussed herein, the project will comply with all applicable SDAPCD 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

Project operational-sourced emissions would not exceed applicable screening thresholds of significance established by the SDPACD. 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.

Project operational-source emissions would not conflict with the SDAPCD’s Regional Air Quality Strategy (RAQS) or the California State Implementation Plan (SIP). The project’s emissions meet SDAPCD screening 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

Project-related greenhouse gas (GHG) emissions would not exceed screening criteria of the City of Escondido Climate Action Plan (CAP).

Furthermore, the project would not conflict with the goals of CARB Scoping Plan, AB-32, SB-32 and the City of Escondido CAP. 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.

Energy

For new development such as that proposed by the 503 West Mission Commercial project, compliance with California Building Standards Code Title 24 energy efficiency requirements (CALGreen), are considered demonstrable evidence of efficient use of energy. As discussed below, the project would provide for, and promote, energy efficiencies required under other applicable federal and State of California standards and regulations, and in so doing would meet or exceed all California Building Standards Code Title 24 standards. Moreover, energy consumed by the project’s operation is calculated to be comparable to, or less than, energy consumed by other commercial uses of similar scale and intensity that are constructed and operating in California. Additionally, the project will comply with the City’s Energy Climate Action Element (ECAE). On this basis, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy. 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
- discussion of the air quality and greenhouse gases thresholds of significance
- 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 San Diego County Air Pollution Control District's (SDAPCD) air quality strategies
- analysis of the project's energy use impacts during construction and operation
- recommendations for mitigation/emissions reduction measures

The City of Escondido is the lead agency for this air quality and greenhouse gas 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 1.5-acre (net) project site is located at 503 West Mission Avenue, situated at the southwest corner of the intersection of Mission Avenue and Centre City Parkway, in the City of Escondido, California. The project site is currently occupied with a sit-down restaurant, unpaved parking, and a pool for the adjacent hotel (Quality Inn). A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves demolition of the existing restaurant and redevelopment of the site with three new commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Project site access is proposed via one existing driveway at Mission Avenue and one new driveway at Centre City Parkway. Figure 2 illustrates the proposed site plan.

PHASING AND TIMING

The proposed project is anticipated to be operational in 2025. The project is anticipated to be built in one phase with project construction anticipated to start no sooner than November 2024, with completion estimated June 2025. The construction schedule utilized in the analysis represents a “worst-case” analysis scenario even if construction was to occur any time after the respective dates since emission factors for

construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.¹

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 SDAPCD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities. Schools and day-care facilities are also considered to be sensitive receptors. Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest sensitive receptors to the project site are: the existing motel use located adjacent to the west and the multi-family residential uses located adjacent to the south, approximately 60 feet (~18 meters) to the west, and approximately 165 feet (~50 meters) to the southeast of the project site boundaries. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.

¹ As shown in the California Emissions Estimator Model (CalEEMod) User's Guide Version 2020.4.0, Section 4.3.2 "OFFROAD Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

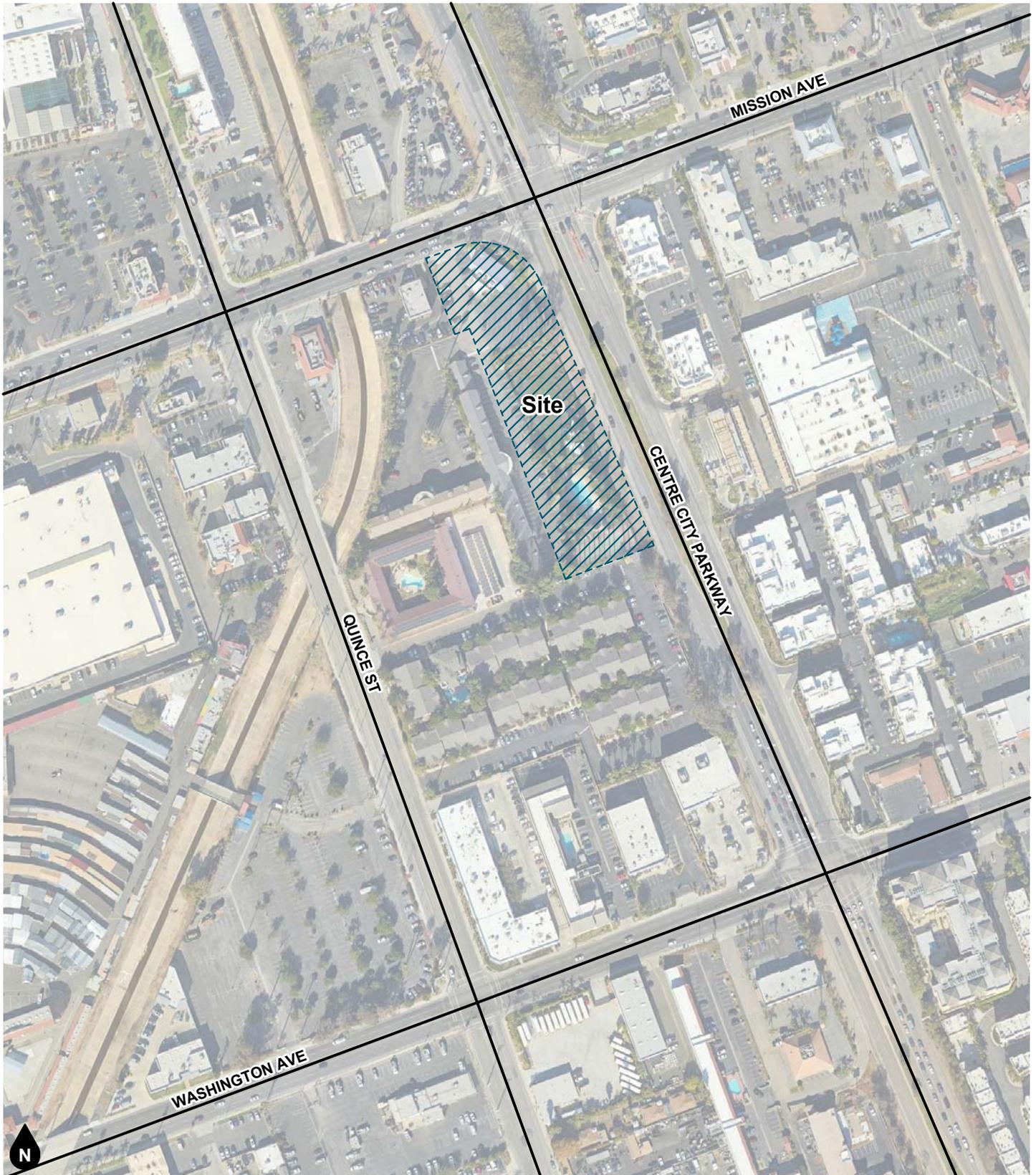


Figure 1
Project Location Map

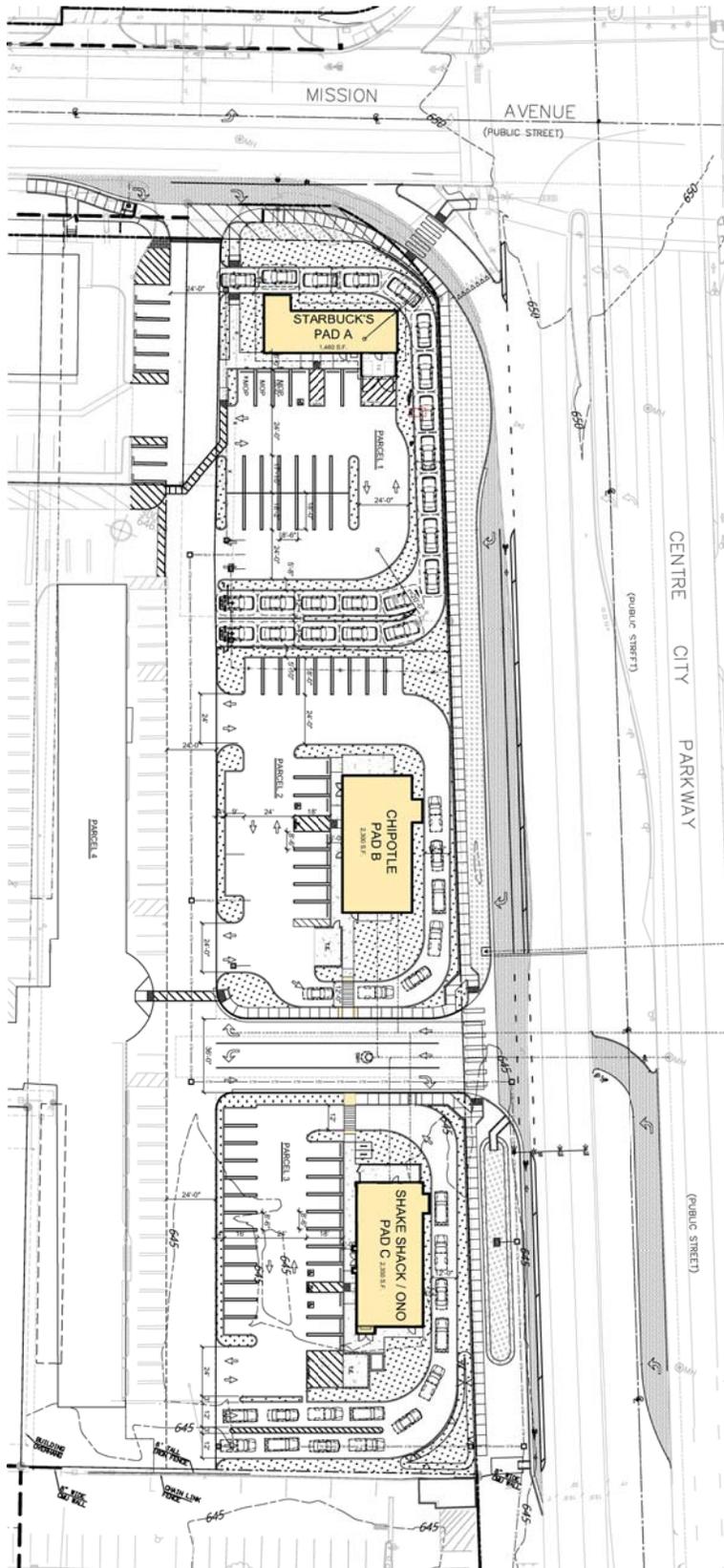


Figure 2
Site Plan

2. AIR QUALITY ANALYSIS

EXISTING AIR QUALITY CONDITIONS

Local Air Quality

The project site is located the western portion of San Diego County in the City of Escondido, which is part of the San Diego Air Basin (Air Basin) that is contiguous with the political boundary of San Diego County. The Air Basin is divided by the Laguna Mountain Range with peaks that exceed 6,000 feet and runs approximately parallel to the coast about 45 miles inland and separates the coastal area from the desert. To the north of the Air Basin are the Santa Ana Mountains, which run along the Orange County coast, turning east to join with the Laguna Mountains near the San Diego-Orange County border.

The same atmospheric conditions that create a desirable living climate combine to limit the ability of the atmosphere to disperse the air pollution generated by the large population attracted to the pleasant climate. In the summer, subsidence inversions occur as descending air associated with the Pacific high-pressure cell comes into contact with cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. In the winter, radiation inversion occurs when air near the ground cools through radiation and the air aloft remains warm. This creates a shallow inversion layer between these two air masses that can also trap pollutants. Limited rainfall occurs in the western San Diego County during the winter, as the oceanic high-pressure center is the weakest and farthest south as the fringes of mid-latitude storms occasionally move through the area.

The temperature and precipitation levels for the City of Escondido are shown below in Table 1. Table 1 shows that August is typically the warmest month and January and December are typically the coolest months. 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	68.8	69	70.8	74.7	77.4	82	87.3	88.6	86.2	80	71.2	68.9
Avg. Min. Temperature	42.6	44.5	47.2	50.5	54.8	58.4	62.1	63.4	61	55.1	45.6	42.3
Avg. Total Precipitation (in.)	2.83	3.27	2.58	1.16	0.32	0.15	0.06	0.09	0.24	0.74	1.25	2.18

Source: <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2863>

Data from the Escondido 2, CA station (042863).

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 (NO_x) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NO_x are colorless and odorless, concentrations of nitrogen dioxide (NO₂) can often be seen as a reddish-brown layer over many urban areas. NO_x form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NO_x reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO₂, which cause respiratory problems. NO_x and the pollutants formed from NO_x can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NO_x is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone (O₃) is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NO_x 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 NO_x 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 NO_x and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NO_x 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 dissolve 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 (PM_{2.5}) 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 PM_{2.5} 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 CARB 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 Diego 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 at Asbestos Mountain in the San Jacinto Valley; approximately 50 miles northeast of the site. 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 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 PM_{2.5} standard is met if the three-year average of the annual average PM_{2.5} concentration is less than or equal to the standard. Attainment status is shown in Table 3.

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

As indicated below in Table 3, the Basin has been designated by the EPA as a non-attainment area for ozone (O₃ 8-hour), and suspended particulates (PM₁₀ and PM_{2.5}). Currently, the Basin is in attainment with the national ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO₂), and nitrogen dioxide (NO₂).

State – California Air Resources Board

The 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. Furthermore, the motor vehicle emission standards established by CARB include compliance with the Safer Affordable Fuel-Efficient Vehicles (SAFE) Rule, issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020). The SAFE Rule sets fuel economy and carbon dioxide standards that increase 1.5 percent in stringency each year from model years 2021 through 2026 and apply to both passenger cars and light trucks. CARB. It also sets fuel specifications to further reduce vehicular emissions. The SAFE Rule was repealed on December 21, 2021.

The San Diego Air Basin has been designated by the CARB as a nonattainment area for ozone, PM₁₀ and PM_{2.5}. Currently, the San Diego Air Basin is in attainment with the ambient air quality standards for CO, lead, SO₂, NO_x, 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 December 12, 2008 the CARB adopted Resolution 08-43, which limits NO_x, 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 once-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 San Diego 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.

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. While these regulations primarily target reductions in criteria air pollutant emission, they also have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

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

San Diego Air Pollution Control District

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

Air Quality Management Plan

The SDAPCD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SDAPCD is directly responsible for reducing emissions from stationary, mobile, and indirect sources.

The SDAPCD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircraft, and agricultural equipment, which are regulated by the CARB or the EPA. In addition, the SDAPCD along with the CARB maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County, including one at Camp Pendleton. These stations are used to measure and monitor criteria pollutant levels in order to determine the attainment status of the pollutants within the Air Basin.

The SDAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to try to achieve attainment status for state ozone standards with control measures focused on Volatile Organic Compounds (VOCs) and oxides of nitrogen (NO_x). Currently, the County is in “nonattainment” status for federal and state O₃ and State PM₁₀ and PM_{2.5}. An attainment plan is available for only O₃. The RAQS was adopted in 1992 and has been updated as recently as 2016 which was the latest update incorporating minor changes to the prior 2009 update.

The 2016 update mostly summarizes how the 2009 update has lowered NO_x and VOCs emissions which reduces ozone and clarifies and enhances emission reductions by introducing three new VOC and four new NO_x reduction measures. NO_x and VOCs are precursors to the formation of O₃ in the atmosphere. The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years.

The 2022 RAQS update was approved by SCAPCD on March 9, 2023. The primary requirement associated with the 2022 RAQS is to ensure that a revised emission control strategy contained in each RAQS be at least as effective in improving air quality as the control strategy being replaced. The proposed and scheduled measures included will provide additional direct emission reductions of ozone precursors (volatile organic compounds (VOC) and oxides of nitrogen (NO_x)), as well as indirect reductions of GHG and PM emissions. The RAQS is largely based on population predictions by SANDAG. Projects that produce the same or less growth than predicted by SANDAG would generally conform to the RAQS. Projects that create more growth than projected by SANDAG may create a significant impact if the project produces unmitigable air quality emissions or if the project produces cumulative impacts.

The following lists the SDAPCD rules that are applicable, but not limited to, projects in the Air Basin.

Rule 20.2 – Air Quality Impact Assessment Screening Thresholds

The SDAPCD has established thresholds in Rule 20.2 for new or modified stationary sources. The County’s Guidelines for Determining Significance and Report Format and Content Requirements incorporate screening

level thresholds from Rule 20.2 for use in all County related Air Quality Impact Assessments (AQIA) and for determining CEQA air quality impacts (County of San Diego, 2007). These screening criteria can be used to demonstrate that a project's total emissions would not result in a significant impact as defined by CEQA. Also, since SDAPCD does not have AQIA threshold for VOCs, it is acceptable to use the Coachella Valley VOC threshold from South Coast Air Quality Management District. Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that the project's total air quality impacts are below the state and federal ambient air quality standards.

These screening thresholds for construction and daily operations are shown in Table 4. Non criteria pollutants such as Hazardous Air Pollutants (HAPs) or Toxic Air Contaminants (TACs) are also regulated by the SDAPCD. Rule 1200 (Toxic Air Contaminants - New Source Review) adopted on June 12, 1996, requires evaluation of potential health risks for any new, relocated, or modified emission unit which may increase emissions of one or more toxic air contaminants. The rule requires that projects that propose to increase cancer risk to between 1 and 10 in one million need to implement toxics best available control technology (T-BACT) or impose the most effective emission limitation, emission control device or control technique to reduce the cancer risk. At no time shall the project increase the incremental cancer risk to over 10 in one million or a health hazard index (chronic and acute) greater than one since risks above. Projects creating cancer risks less than one in one million are not required to implement T-BACT technology.

The U.S. EPA uses the term VOC and the CARB's Emission Inventory Branch (EIB) uses the term Reactive Organic Gases (ROG) to essentially define the same thing. There are minor deviations between compounds that define each term however for purposes of this study we will assume they are essentially the same due to the fact SCAQMD interchanges these words and because air quality models directly calculate ROG in place of VOC.

Rule 20.3 – Major Stationary Sources and Prevention of Significant Deterioration (PSD) Stationary Sources

Rule 20.3 requires a new or modified emissions units, relocated emission units, replacement emission units, and emergency equipment emission units with a post-project potential to emit 10 pounds per day or more of PM10, NOx, VOC, or Sox shall be equipped with best available control technology (BACT) for each air contaminant.

Rule 51 - Nuisance

Rule 51 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes 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. Compliance with Rule 51 will reduce local air quality and odor impacts to nearby sensitive receptors.

Rule 52 – Particulate Matter

Rule 52 prohibits a person from discharging into the atmosphere from any source particulate matter in excess of 0.10 grain per dry standard cubic foot (0.23 grams per dry standard cubic meter) of gas.

Rule 55 – Fugitive Dust Control

Rule 55 governs emissions of fugitive dust during construction activities and requires the following:

1. No person shall engage in construction or demolition activities in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.

2. Visible roadway dust as a result of active operations, spillage from transport trucks, erosions, or track-out/carry-out shall be minimized by the use of any of the equally effective track-out/carryout and erosion control measures listed in Rule 55 that apply to the project or operation. These measures include: track-out grates or gravel beds at each egress point; wheel-washing at each egress during muddy conditions; soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; watering for dust control; and using secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks.

Rule 67.0.1 - Architectural Coatings

Rule 67.01 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.

San Diego Association of Governments

SANDAG is the regional planning agency for San Diego County and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. With respect to air quality planning and other regional issues, SANDAG has prepared San Diego Forward: The 2021 Regional Plan (2021 Regional Plan) for the San Diego region (SANDAG 2021). The 2021 Regional Plan combines the Regional Transportation Plan, Sustainable Communities Strategy (SCS), and Regional Comprehensive Plan and provides a long-term blueprint for the San Diego region that seeks to meet regulatory requirements, address traffic congestion, and create equal access to jobs, education, healthcare, and other community resources. In regard to air quality, the 2021 Regional Plan reduces per capita GHG emissions from cars and light duty trucks to 20 percent below 2005 levels by 2035, exceeding the region's state mandated target of 19 percent. The 2021 Regional Plan also meets federal air quality conformity requirements (SANDAG 2021). On September 23, 2022, SANDAG's Board of Directors adopted the 2023 Regional Transportation Improvement Program (RTIP). The 2023 RTIP is a multibillion-dollar, five-year program of major transportation projects funded by federal, state, local, and private funding, including the TransNet local sales tax, covering fiscal years 2023 to 2027. The 2023 RTIP development process, which includes the air quality emissions analysis for all regionally significant projects, requires approval by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The Federal Highway Administration and Federal Transit Administration approved the 2023 RTIP and its federal conformity determination in December 2022.

Local - City of Escondido

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

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

City of Escondido General Plan

The City of Escondido's General Plan contains goals and policies regarding air quality in the Resources Conservation Element. The goals and policies applicable to the proposed project from the Resource conservation Element of the Escondido General Plan are stated below.

Goal 7 Improved air quality in the city and the region to maintain the community's health and reduce greenhouse gas emissions that contribute to climate change.

- Policy 7.1* Participate in regional planning efforts and coordinate with the San Diego Air Pollution Control District and San Diego Association of Governments in their efforts to reduce air quality impacts and attain state and federal air quality standards.
- Policy 7.3* Require that new development projects incorporate feasible measures that reduce construction and operational emissions.
- Policy 7.4* Locate uses and facilities/operations that may produce toxic or hazardous air pollutants an adequate distance from each other and from sensitive uses such as housing and schools as consistent with California Air Resources Board recommendations.
- Policy 7.6* Restrict the number and location of drive-through facilities in the city and require site layouts that reduce the amount of time vehicles wait for service.
- Policy 7.7* Encourage businesses to alter local truck delivery schedules to occur during non-peak hours, when feasible.
- Policy 7.8* Require that government contractors minimize greenhouse gas emissions in building construction and operations, which can be accomplished through the use of low or zero-emission vehicles and equipment.
- Policy 7.11* Educate the public about air quality, its effect on health, and efforts the public can make to improve air quality and reduce greenhouse gas emissions.

**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: <https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf>

**Table 3
San Diego County Air Basin Attainment Status**

Pollutant	Federal Designation	State Designation
Ozone (8-hour)	Nonattainment	Nonattainment
Ozone (1-hour)	Attainment ¹	Nonattainment
CO	Attainment	Attainment
PM10	Unclassifiable ²	Nonattainment
PM2.5	Attainment	Nonattainment ³
NO ₂	Attainment	Attainment
SO ₂	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassified
Visibility	(No federal standard)	Unclassified

Source (Federal and State Status): <https://www.sdapcd.org/content/sdapcd/planning/attainment-status.html>

- (1) The federal 1-hour standard of 0.12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.
- (2) At the time of designation, if the available data do not support a designation of attainment or nonattainment, the area is designated as unclassifiable.
- (3) The California Air Resources Board (CARB) has not reclassified the region to attainment yet due to (1) incomplete data, and (2) the use of non-California Approved Samplers (CAS). While data collected does meet the requirements for designation of attainment with federal PM2.5 standards, the data completeness requirements for state PM2.5 standards substantially exceed federal requirements and mandates, and have historically not been feasible for most air districts to adhere to given local resources. APCD has begun replacing most regional filter-based PM2.5 monitors as they reach the end of their useful life with continuous PM2.5 air monitors to ensure collected data meets stringent completeness requirements in the future. APCD anticipates these new monitors will be approved as "CAS" monitors once CARB review the list of approved monitors, which has not been updated since 2013.

**Table 4
SDAPCD Air Quality Significance Thresholds**

Pollutant	Total Emissions		
	Pounds Per Hour	Pounds Per Day	Tons Per Year
PM10	-	100	15
PM2.5	-	55 ¹	10 ¹
NOx	25	250	40
SOx	25	250	40
CO	100	550	100
Lead	-	3.2	0.6
VOC	-	75 ²	13.7 ³

Source: San Diego County. March 2007. County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Air Quality. <http://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf>.

Notes:

- (1) EPA "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published September 8, 2005. Also used by the SCAQMD.
- (2) Threshold for VOCs based on the threshold of significance for VOCs from the South Coast Air Quality Management District for the Coachella Valley.
- (3) 13.7 Tons Per Year threshold based on 75 lbs/day multiplied by 365 days/year and divided by 2000 lbs/ton.

MONITORED AIR QUALITY

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. The SDAPCD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircraft, and agricultural equipment, which are regulated by the CARB or the EPA. In addition, the SDAPCD along with the CARB maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County, including one at Camp Pendleton. These stations are used to measure and monitor criteria pollutant levels in order to determine the attainment status of the pollutants within the Air Basin.

The Air Basin was designated nonattainment for the 1997 8-hour ozone NAAQS, effective June, 2004 based on ozone air quality measurements over the 2001-2003 three-year period. The Air Basin was designated as a “basic” (unclassified) nonattainment area, which allowed more flexibility to the SDAPCD than the more stringent nonattainment classifications. In June 2007, the SDAPCD submitted a SIP revision fulfilling the requirements EPA had established for a basic nonattainment area. However, due to a court ruling the EPA did not accept the SIP revision and instead reclassified the Air Basin as a “Moderate” ozone nonattainment area. On December 5, 2012 the SDAPCD applied for redesignation of the 1997 8-hour ozone based on air quality measurements over the 2009-2011 three-year period, which showed the Air Basin is currently in attainment for the 1997 standard.

In 2008, a more protective 8-hour ozone NAAQS was established by the EPA at a level of 0.075 ppm. In order to address the requirements of the California Clean Air Act (CCAA) of a 5 percent annual reduction in countywide emissions of ozone precursors or if that is not achievable an expeditious schedule for adopting every feasible control measure, the SDAPCD has developed the San Diego Regional Air Quality Strategy (RAQS) that identifies feasible emission control measure and provides expeditious progress toward attaining the State’s ozone standards. The RAQS control measures focus on emissions sources under the SDAPCD’s authority, specifically stationary emissions sources and some area-wide sources that include residential water heaters, furnaces, architectural coatings, and consumer products. The RAQS was initially adopted by the SDAPCD on June 1992 and amended on March 1993 based on CARB comments. The SDAPCD further updated the RAQS on December 1995, June 1998, August 2001, July 2004, April 2009, December 2016, and March 2023.

Data was taken from the Camp Pendleton monitoring station (Camp Pendleton Station). The Camp Pendleton Station is located approximately 18.7 miles northwest of the project site at 21441-W B Street, Oceanside. Table 5 presents the monitored pollutant levels from the Camp Pendleton Station. However, it should be noted that due to the air monitoring stations distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site.

Table 5 summarizes 2020 through 2022 published monitoring data, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the ozone standards.

Ozone

During the 2020 to 2022 monitoring period, the State 1-hour concentration standard for ozone was not exceeded at the Camp Pendleton Station. The State 8-hour ozone standard has been exceeded for only three days in 2020 over the past three years at the Camp Pendleton Station. The Federal 8-hour ozone standard was exceeded for only three days in 2020 over the past three years at the Camp Pendleton Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO₂, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area.

Carbon Monoxide

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

Nitrogen Dioxide

The Camp Pendleton Station did not record an exceedance of the State or Federal NO₂ standards for the last three years.

Particulate Matter

There was no information for the State 24-hour concentration standards for PM₁₀ and Federal 24-hour standards for PM₁₀ over the past three years.

There was insufficient data for the Federal 24-hour standard for PM_{2.5} over the past three years at the Camp Pendleton Station.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM₁₀ and PM_{2.5}). 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 PM_{2.5}. 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 5
Air Quality Monitoring Summary**

Pollutant (Standard) ¹		Year		
		2020	2021	2022
Ozone:	Maximum 1-Hour Concentration (ppm)	0.094	0.074	0.076
	Days > CAAQS (0.09 ppm)	0	0	0
	Maximum 8-Hour Concentration (ppm)	0.074	0.059	0.067
	Days > NAAQS (0.070 ppm)	3	0	0
	Days > CAAQS (0.070 ppm)	3	0	0
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)	0.058	0.059	0.050
	Days > CAAQS (0.18 ppm)	0	0	0
Inhalable Particulates (PM10):	Maximum 24-Hour Concentration (µg/m ³)	*	*	*
	Days > NAAQS (150 µg/m ³)	*	*	*
	Days > CAAQS (50 µg/m ³)	*	*	*
	Annual Average (µg/m ³)	*	*	*
Ultra-Fine Particulates (PM2.5):	Maximum 24-Hour Concentration (µg/m ³)	61.1	20.7	18.0
	Days > NAAQS (35 µg/m ³)	*	*	0
	Annual Average (µg/m ³)	9.5	*	*

Source: <http://www.arb.ca.gov/adam/topfour/topfour1.php>. Data from the Camp Pendleton Monitoring Station, unless otherwise noted.

Notes:

(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.

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.

Regional Air Quality

The SDAPCD has established annual significance thresholds for NO_x and VOC for stationary sources. The SDAPCD has not established rules for characterizing impacts from construction. However, SDAPCD informally recommends quantifying construction emissions and comparing them to significance thresholds found in SDAPCD regulations for stationary sources (pursuant to SDAPCD Rules 20.2 and 20.3 and shown in Table 4). Because these Rules do not include VOCs or PM_{2.5}, the screening level for VOCs and PM_{2.5} used in this analysis are from the South Coast Air Quality Management District (SCAQMD), which generally has stricter emissions thresholds than SDAPCD. If construction-phase emissions exceed these thresholds for a stationary source air quality impact analysis, then construction has the potential to violate air quality standards or to contribute substantially to an existing violation. For the purposes of this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SDAPCD air quality screening-level thresholds identified in Table 4.

Toxic Air Contaminants

Construction

Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during the construction phase of the Project. According to the Office of Environmental Health Hazard Assessment (OEHHA)² health effects from TACs are described in terms of individual cancer risk. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of TACs over a 30-year lifetime will contract cancer based on the use of standard risk-assessment methodology. Additionally, the SDAPCD guidance does not require an HRA for short-term construction emissions. Construction activities associated with the project would be sporadic, transitory, and short-term in nature (approximately 7 months).

Operation

SDAPCD’s Rule 1210 threshold for public noticing is based on what the SDAPCD has determined as the potential for a project to contribute to potential significant adverse health impacts to nearby sensitive receptors and is based on similar thresholds provided in Health Risk Assessments for Proposed Land Use Projects, prepared by CAPCOA, July 2009. Therefore, if the proposed project is anticipated to create TACs

² Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, <https://oehha.ca.gov/media/downloads/cnrn/2015guidancemanual.pdf>.

from stationary sources or regular operations of diesel trucks on the project site that would potentially exceed the above thresholds at any nearby sensitive receptors than the TAC emissions should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

CARB published the *Air Quality and Land Use Handbook* in April 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 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 unit operations exceed 300 hours per week); (3) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines; and (4) avoid siting sensitive receptors within 300 feet of a large gasoline dispensing facility (3.6 million gallons per year or more) or 50 feet of a typical gasoline dispensing facility (less than 3.6 million gallons per year).

The project is a commercial project consisting of fast-food restaurants with drive-through windows and will not be a source of toxic air contaminants.

San Diego County CO Emissions Significance Thresholds

CO emissions are the result of the combustion process, and therefore primarily associated with mobile source emissions. CO "hotspots" or pockets where the CO concentration exceeds the NAAQS and/or CAAQS, have been found to occur only at signalized intersections that operate at or below level of service (LOS) E with peak-hour trips for that intersection exceeding 3,000 trips (San Diego County 2007). Pursuant to the County's CEQA Significance Determination Thresholds, a site-specific CO hotspot analysis should be performed to determine if health standards are potentially violated and to identify any affected sensitive receptor if a proposed development would:

- Place receptors within 500 feet of a signalized intersection operating at or below LOS E (peak-hour trips exceeding 3,000 trips)
- Cause road intersections to operate at or below a LOS E (with intersection peak-hour trips exceeding 3,000)
- Result in emissions of CO that when totaled with the ambient concentrations, will exceed 1-hour concentration of 20 ppm or an 8-hour average of 9 ppm

Odor Impacts

An odor impact would occur if the proposed project creates an odor nuisance pursuant to SDAPCD's Rule 51, which states:

"A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons 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. The provisions of this rule do not apply to odors emanating from agricultural operations in the growing of crops or raising of fowl or animals."

If the proposed project results in a violation of Rule 51 with regards to odor impacts, then the proposed project would create a significant odor impact. The odor analysis for both construction and operation of the proposed project can be found below.

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 an existing 2,391 square foot restaurant, site preparation of approximately 0.92 acres to remove existing asphalt surfaces, pool, and tennis court; grading of approximately 1.5 acres; construction of 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window³; paving of a parking lot with 64 spaces; and application of architectural coatings. See Appendix B for more details.

The proposed project is anticipated to start construction no sooner than November 2024, with completion anticipated in June 2025. The project is anticipated to be operational in 2025.

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 2022.1.1.21) 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 EMFAC2021 computer program to calculate the emission rates specific for the San Diego County for construction-related employee vehicle trips and the OFFROAD2017 computer program to calculate emission rates for heavy truck operations. EMFAC2021 and OFFROAD2017 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 SDAPCD screening numeric indicators. Detailed construction equipment lists, construction scheduling, and emission calculations are provided in Appendix B.

Fugitive dust emissions vary greatly during construction and are dependent on the amount and type of activity, silt content of the soil, and the weather. Vehicles moving over paved and unpaved surfaces, demolition, excavation, earth movement, grading, and wind erosion from exposed surfaces can all be sources of fugitive dust. Construction operations are subject to the requirements established in SDAPCD Regulation 4, Rules 52, 54, and 55.

³ The proposed coffee shop with drive-through was modeled as a Fast Food Restaurant without Drive-Through in CalEEMod as it was the closest land use available and the Fast food restaurant with Drive Thru land use was already being used.

Per SDAPCD Rule 67.0.1, the architectural coatings will be limited to an average of 150 grams per liter or less; however, CalEEMod defaults were utilized in the analysis.

The phases of the construction activities which have been analyzed below for each phase are: (1) demolition, (2) site preparation, (3) grading, (4) building construction, (5) paving, and (6) application of architectural coatings. To be conservative, it is anticipated that the building construction, paving and architectural phases will overlap. Details pertaining to the project's construction timing and the type of equipment modeled for each construction phase are available in the CalEEMod output in Appendix B.

Construction-Related Regional Impacts

The construction-related criteria pollutant emissions for each phase are shown below in Table 6. Table 6 shows that none of the project's emissions will exceed SDAPCD screening thresholds. Therefore, a less than significant 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 the Office of Environmental Health Hazard Assessment (OEHHA),⁴ health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 30-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 7 months), the project would not result in a long-term (i.e., lifetime or 30-year) exposure as a result of project construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any regional thresholds.

The project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. The project would also comply with the requirements of SDAPCD Rule 1206 if asbestos is found during the renovation and construction activities. 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 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.

⁴ Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>.

**Table 6
Construction-Related Regional Pollutant Emissions**

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO ₂	PM10	PM2.5
Maximum Daily Emissions ^{1,2}	6.59	18.70	23.00	0.04	5.56	2.25
SDAPCD Thresholds	75	250	550	250	100	55
Exceeds Thresholds?	No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2022.1.1.21

- (1) Represent on-site and off-site emissions. On-site emissions are from equipment operated on-site that are not operated on public roads. On-site site preparation and grading PM-10 and PM-2.5 emissions show compliance with SDAPCD Rules 52, 54, and 55 to reduce fugitive dust.
- (2) Construction, painting and paving phases may overlap.

LONG-TERM OPERATIONAL EMISSIONS

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

Operations-Related Regional Air Quality Impacts

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

Operations-Related Criteria Pollutants Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of the CalEEMod model. The operating emissions were based on the year 2025, which is the anticipated opening year for the proposed project. The operations emissions printouts from the CalEEMod model are provided in Appendix B. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips (trip generation rate) from the *503 West Mission Commercial Project Transportation Impact Comparison* (Transportation Impact Comparison) prepared by Ganddini Group, Inc. (February 12, 2024) into the CalEEMod Model. The Transportation Impact Comparison found that the proposed project would create approximately 1,740 net new vehicle trips per day on weekdays and 2,051 net new vehicle trips per day on Saturdays (with incorporation of pass-by trip reduction and reduction from removal of existing uses). The Transportation Impact Comparison included trip generation rates of 106.85 trips per thousand square foot per weekdays and 319.86 trips per thousand square foot per Saturdays coffee shop with drive-through use (includes incorporation of pass-by trip reduction) and 390.11 trips per thousand square foot per weekdays and Saturdays for the fast-food restaurant with drive-through use (includes incorporation of pass-by trip reduction). In addition, the existing restaurant use to be removed as part of the project has a trip generation rate of 96.19 trips per thousand square foot per weekdays and Saturdays (includes incorporation of pass-by trip reduction). As the Transportation Impact Comparison did not provide Sunday trip rates, Saturday trip rates were utilized for Sunday. The program then applies the emission factors for each trip which is provided by the EMFAC2021 model to determine the vehicular traffic pollutant emissions.

Area Sources

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

Energy Usage

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

Project Impacts

The worst-case summer or winter criteria pollutant emissions created from the proposed project's long-term operations have been calculated and are shown below in Table 7. The results show that, even before reduction from removal of existing restaurant uses, none of the SDAPCD screening thresholds would be exceeded. Emissions would be further reduced with incorporation of the reduction from removal of existing uses. Therefore, a less than significant regional air quality impact would occur from the operation of the proposed project.

Operations-Related Local Air Quality Impacts

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

Local CO Emission Impacts from Project-Generated Vehicular Trips

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

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

The SDAB is in attainment of State and federal CO standards. Nonetheless, a CO hotspot analysis is required by the County if a proposed development would cause road intersections to operate at or below a LOS E while exceeding 3,000 peak-hour trips. The Transportation Impact Comparison prepared for the project found that the project would generate approximately 1,740 net new trips on weekdays (with inclusion of pass-by reduction and reduction from existing uses) with 135 morning peak hour trips, 121 mid-day peak hour trips, and 122 evening peak hour trips and 2,051 net new trips on Saturdays (with inclusion of pass-by reduction and reduction from existing uses) with 186 mid-day peak hour trips (Ganddini Group, Inc. 2024). Therefore, the addition of project generated peak hour vehicle trips would not be anticipated to cause studied intersection to exceed 3,000 peak hour trips.

Therefore, no CO "hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from the intermittent diesel delivery truck emissions and trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SDAPCD's Rule 51 no significant impact related to odors would occur during the on-going operations of the proposed project.

**Table 7
Operational Pollutant Emissions**

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Maximum Daily Emissions	9.72	7.48	68.00	0.16	13.40	3.49
-reduction from existing restaurant use being removed	-1.08	-0.86	-7.37	-0.02	-1.35	-0.36
Total Net Emissions	8.64	6.62	60.63	0.14	12.05	3.13
SDAPCD Thresholds	75	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2022.1; the higher of either summer or winter emissions.

CUMULATIVE AIR QUALITY IMPACTS

Project Specific Impacts

Cumulative air quality impacts may occur from a combination of the project's emissions with the emissions of other reasonably foreseeable projects and/or regional emissions. The project site is located in the San Diego Air Quality Basin and is regulated by the SDAPCD. San Diego County is currently in non-attainment for the 1-hour concentrations under the California Ambient Air Quality Standards (CAAQS) for Ozone (O₃), and for the 24-hour concentrations of PM₁₀ under CAAQS. O₃ is formed when reactive organic gases (ROG) and nitrogen oxides react in the presence of sunlight. ROG sources include any source that burns fuels, such as gasoline, natural gas, wood and oil. Sources of PM₁₀ include motor vehicles, wood burning stoves and fireplaces, dust from construction, landfills, agriculture, wildfires, brush and waste burning, industrial sources, and windblown dust from open lands.

SDAPCD has established air contaminant "trigger levels" which indicate scenarios that require additional review. These "trigger levels" include 100 pounds per day for PM-10, 250 pounds per day of NO_x and 550 pounds per day of CO. As shown in Tables 6 and 7, construction and operation of the project would result in an increase in PM₁₀, NO_x and CO, but not to a level above SDAPCD's "trigger levels." Therefore, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal or state ambient air quality standards. Impacts would be less than significant.

Air Quality Compliance

The proposed project would not conflict with or obstruct implementation of the SDAPCD's Regional Air Quality Strategy (RAQS) or the California State Implementation Plan (SIP). The following section discusses the proposed project's consistency with the SDAPCD's RAQS and SIP.

The California Clean Air Act requires areas that are designated nonattainment of state ambient air quality standards of any of the criteria pollutants to prepare and implement plans to attain the standards by the earliest practicable dates. As detailed above, the Air Basin is designated by the EPA for the national standards as a non-attainment area for ozone (O₃) and by CARB as nonattainment for ozone, PM₁₀, and PM_{2.5}. According the RAQS was developed to identify feasible emission control measures and provide expeditious progress toward attaining the state standard for ozone and particulate matter. The two pollutants in the RAQS are VOCs and NO_x, which are precursors to the formation of ozone. Projected increases in motor vehicle usage, population, and growth create challenges in controlling and reducing air emissions. The RAQs, in conjunction with the Transportation Control Measures, were revised in 2016 as part of the RAQS for San Diego County. In addition, the most recent RAQS update, the 2022 RAQS, was approved in March 2023.

The SIP is the document that sets forth the State's strategies for attaining the NAAQS. The SDAPCD is the agency responsible for preparing the portion of the SIP applicable to the Air Basin. The RAQS outlines the plans and control measures designed to attain the NAAQS for ozone. The SDAPCD relies on information from CARB and SANDAG, including projected growth, mobile, area and all other source emissions in order to predict future emissions and develop appropriate strategies for the reduction of source air emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the incorporated cities and County of San Diego. As such, projects that propose development that is consistent with the growth anticipated by SANDAG would also be consistent with the RAQS and the SIP.

The proposed development consists of an approximately 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. The SANDAG Fast Facts population forecast for the City of Escondido shows that the City's population is anticipated to increase to approximately 177,559 by the year 2050 with a total citywide

population increase of 22,924 persons from 2020 to 2050.⁵ Furthermore, 2050 employment projections show an increase of approximately 48 percent from 2020 job availability. Because the project is not residential it would not generate direct population or housing growth and there is a relatively small employment growth associated with the project; therefore, the project would be consistent with SANDAG's employment forecast and the City's General Plan. Furthermore, the proposed project would not permanently change the existing or planned transportation network or traffic patterns anywhere in the Air Basin. As such, the proposed project would be consistent with the local general plan and SANDAG's growth projections. Based on the above, the proposed project will not result in an inconsistency with the SDAPCD RAQS. Therefore, a less than significant impact will occur in relation to implementation of the RAQS.

⁵ https://www.sandag.org/resources/demographics_and_other_data/demographics/fastfacts/esco.htm

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 (CO₂), methane (CH₄), ozone, water vapor, nitrous oxide (N₂O), 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 CO₂ and nitrous oxide (NO_x) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO₂, where CO₂ 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 (CO₂)

The natural production and absorption of CO₂ 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. CO₂ 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 CO₂ 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 CO₂ 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 (CH₄)

CH₄ is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO₂. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO₂, N₂O, and Chlorofluorocarbons (CFCs)). CH₄ 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 (N₂O)

Concentrations of N₂O 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). N₂O 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 (C₂H₆) 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 (CHF₃), HFC-134a (CF₃CH₂F), and HFC-152a (CH₃CHF₂). 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 (CF₄) and hexafluoroethane (C₂F₆). Concentrations of CF₄ in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride (SF₆)

SF₆ is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF₆ has the highest global warming potential of any gas evaluated; 23,900 times that of CO₂. 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 (CO₂). The larger the GWP, the more that a given gas warms the Earth compared to CO₂ 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 CO₂ 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.

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 CO₂ 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.⁶

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)⁷ 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.⁸ In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO₂ standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO₂ standards for model year 2020 are 43.7 mpg and 204 grams of CO₂ per mile for passenger cars and 31.3 mpg and 284 grams of CO₂ per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes CO₂-equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.⁹

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

⁶ 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.

⁷ 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.

⁸ 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>.

⁹ 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>.

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

In 2004, the California Air Resources Board (CARB) adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other 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 CO₂ 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 MMTCO_{2e} 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 MMTCO_{2e} (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 MMTCO_{2e}.

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 MMTCO_{2e}. 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 MMTCO_{2e}.

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.”¹⁰ 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.

2022 Climate Change Scoping Plan

CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality on November 16, 2022. The 2022 Scoping Plan lays out the sector-by-sector roadmap for California, the world’s fifth largest economy, to achieve carbon neutrality by 2045 or earlier, outlining a technologically feasible, cost-effective, and equity-focused path to achieve the state’s climate target. The Plan addresses recent legislation and direction from Governor Newsom and extends and expands upon earlier plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. The plan also takes the unprecedented step of adding carbon neutrality as a science-based guide and touchstone for California’s climate work. Specifically, this plan:

¹⁰ California Air Resources Board, California’s 2017 Climate Change Scoping Plan, November 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California’s dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California’s most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands (NWL) to the state’s GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

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 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 Bills 1078, 107, and X1-2 and Executive Orders S-14-08 and S-21-09

Senate Bill 1078 (SB 1078) 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) changed the target date to 2010. Executive Order S-14-08 was signed on November 2008 and expands the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed 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 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. 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.

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/ft² (cubic feet per minute per square foot), whichever is greater.

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

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

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

Section 120.6 Covered Processes added information in regards to adiabatic chiller requirements that included that all condenser fans for air-cooled converseness, evaporative-cooled condensers, adiabatic condensers, gas

coolers, air or water fluid coolers or cooling towers must be continuously variable speed, with the speed of all fans serving a common condenser high side controlled in unison. Further, the mid-condensing setpoint must be 70 degrees Fahrenheit for all of the above mentioned systems.

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

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

The 2022 Building Energy Efficiency Standards will become effective on January 1, 2023.¹¹ The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation by requiring solar PV on new homes, providing significant GHG savings. The 2022 update builds off this progress with expanded solar standards and the move to onsite energy storage that will help Californians save on utility bills while bolstering the grid. The 2022 Energy Code update focuses on four key areas in new construction of homes and businesses:

- Encouraging electric heat pump technology and use, which consumes less energy and produces fewer emissions than traditional HVACs and water heaters.
- Establishing electric-ready requirements when natural gas is installed, which positions owners to use cleaner electric heating, cooking and electric vehicle (EV) charging options whenever they choose to adopt those technologies.
- Expanding solar photovoltaic (PV) system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

The 2022 Energy Code affects homes by establishing energy budgets based on efficient heat pumps for space or water heating to encourage builders to install heat pumps over gas-fueled HVAC units; requiring homes to be electric-ready, with dedicated 240-volt outlets and space (with plumbing for water heaters) so electric appliances can eventually replace installed gas appliances; increasing minimum kitchen ventilation requirements so that fans over cooktops have higher airflow or capture efficiency to better exhaust pollution from gas cooking and improve indoor air quality; and allowing exceptions to existing solar PV standards when roof area is not available (such as for smaller homes). In addition, the effect on businesses includes establishing combined solar PV and battery standards for select businesses with systems being sized to maximize onsite use of solar energy and avoid electricity demand during times when the grid must use gas-powered plants; establishing new efficiency standards for commercial greenhouses (primarily cannabis growing); and improving efficiency standards for building envelope, various internal.

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

On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The 2019 California Green Building Standards Code went into effect on January 1, 2020.

¹¹ California Energy Commission (CEC). 2022. Building Energy Efficiency Standards. <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>.

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. The 2019 version of the California Green Building Standards became effective January 1, 2020.

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 post construction 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 post construction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of post construction stormwater management measures.

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

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

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

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

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

The 2022 California Green Building Standards Code became effective on January 1, 2023.¹²

HCD amended Section 5.106.5.3 in regard to increasing the EV capable space percentages and adding a new requirement for installed Level 2 DCFC chargers.

HCD under Section 5.106.5.4 added new regulation for electric vehicle charging readiness requirements for new construction of warehouse, grocery stores, and retail stores with planned off-street loading spaces.¹³

Executive Order B-30-15

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

¹² California Building Standards Commission (CBSC). 2022. California Green Building Standards. Website: <https://codes.iccsafe.org/content/CAGBC2022P1>.

¹³ <https://www.dgs.ca.gov/BSC/Resources/2022-Title-24-California-Code-Changes>

- 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.

Executive Order N-79-20.

Executive Order N-79-20 was signed into law on September 23, 2020 and mandates 100 percent of in-state sales of new passenger cars and trucks be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the state be zero-emission vehicles by 2045 for all operations where feasible and by 2035 for drayage trucks; and to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

Energy Sector and CEQA Guidelines Appendix F

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The 2016 update to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several key areas to improve the energy efficiency of renovations and addition to existing buildings as well as newly constructed buildings and renovations and additions to existing buildings. The major efficiency

improvements to the residential Standards involve improvements for attics, walls, water heating, and lighting, whereas the major efficiency improvements to the nonresidential Standards include alignment with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards. Furthermore, the 2016 update required that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.¹⁴

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.”¹⁵ 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 2022 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2023.

Local – City of Escondido

City of Escondido General Plan

The City of Escondido’s General Plan contains goals and policies regarding climate protection in the Resources Conservation Element. The goals and policies applicable to the proposed project from the Resource conservation Element of the Escondido General Plan are stated below.

Goal 7 Improved air quality in the city and the region to maintain the community’s health and reduce greenhouse gas emissions that contribute to climate change.

- Policy 7.2* Reduce regional greenhouse gas emissions through the following measures including, but not limited to:
- a) Implementing land use patterns that reduce automobile dependence (compact, mixed-use, pedestrian, and transit-oriented development, etc.);
 - b) Reducing the number of vehicular miles traveled through implementation of Transportation Demand Management programs, jobs-housing balance, and similar techniques;
 - c) Supporting public transportation improvements;
 - d) Encouraging the use of alternative modes of transportation by expanding public transit, bicycle, and pedestrian networks and facilities;
 - e) Participating in the development of park-and-ride facilities;
 - f) Maintaining and updating the city’s traffic signal synchronization plan;
 - g) Promoting local agriculture;
 - h) Promoting the use of drought-tolerant landscaping; and
 - i) Encouraging the use of non-polluting alternative energy systems.

¹⁴ 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>

¹⁵ California Building Standards Commission, 2010 California Green Building Standards Code, (2010).

The City of Escondido adopted their Climate Action Plan in March 2021. The CAP provides a comprehensive roadmap to address the challenges of climate change in the City of Escondido. The city partnered with the San Diego Association of Governments (SANDAG) to create the CAP to achieve GHG reductions and address climate change at the local level. In an effort to combat climate change, the CAP sets GHG reduction targets and proposes achievable, locally based strategies to reduce GHG emissions from both municipal and community activities. The CAP focuses on reducing emissions by 2020 and 2030 to be consistent with the legislative State targets and reducing emissions by 2035 to demonstrate the recommended trajectory to meet the State's 2050 goal. As stated in the CAP, the city includes reduction targets of 4 percent below 2012 levels by 2020, 42 percent below 2012 levels by 2030, and 52 percent below 2012 levels by 2035.

As stated in Section 4.1.1 of the CAP, the City has established a GHG screening threshold (set at 500 metric tons carbon dioxide equivalent [MTCO_{2e}] per year) for new development projects to determine if a project would need to demonstrate consistency with the CAP through the CAP Consistency Review Checklist (Checklist). New development projects that are consistent with the General Plan and are expected to generate fewer than 500 MTCO_{2e} annually would not have a cumulative impact and would not be required to provide additional analysis. The Checklist includes a list of the size and types of projects that would be expected to generate fewer than 500 MTCO_{2e} per year. In addition, new development projects that are expected to generate greater than 500 MTCO_{2e} annually, but are consistent with the General Plan land use designation and zoning, may be determined to have a less than significant cumulative impact if they are determined to be consistent with the CAP. A project's consistency with the CAP will be determined through the Checklist. The Checklist contains GHG reduction measures applicable to development projects that are required to be implemented on a project-by-project basis to ensure that the specific emission targets identified in the CAP are achieved.

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:

- Threshold 1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Threshold 2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Thresholds of Significance for this Project

To determine whether the project's GHG emissions are significant, this analysis uses the screening criteria identified in the City's CAP. As stated above, the City's CAP screening criteria utilizes a 500 MTCO_{2e} per year emission threshold. However, if a project is below specific land use characteristics (i.e., land use type and number of dwelling units and/or square feet), they are not subject to the measures of the CAP as they are considered to emit less than the 500 MTCO_{2e} per year of emissions. Furthermore, if a project does not fall within those land use characteristics and exceeds 500 MTCO_{2e} per year, then the project would be required to demonstrate consistency with CAP through the Checklist.

An analysis of the project's compliance with all applicable regulations and plans in regard to GHG emissions has been included below.

PROJECT GREENHOUSE GAS EMISSIONS AND CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

As provided in the City's CAP, restaurants under 6,500 square feet are anticipated to have less than 500 MTCO_{2e} per year and would result in less than significant impacts. Therefore, proposed restaurants under this square footage are not subject to the measures of the CAP.

The project plans to develop the site with commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Therefore, as the proposed project consists of restaurant uses and the total square footage is less than the CAP screening footage of 6,500 for restaurant uses, the proposed project's GHG impact is considered to be less than significant, the project is not subject to the measures contained in the CAP checklist, and no quantitative analysis of GHG emissions is required. The CAP checklist has been included in Appendix C.

The proposed project is consistent with the City's CAP and operation of the proposed project would not create a significant cumulative impact to global climate change. Furthermore, with consistency with the City's CAP, the proposed project would also not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

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."¹⁶ 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. Consistent with CEQA Guidelines Section 15064h(3),¹⁷ the City, 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 above in the Project Greenhouse Gas Emissions and Consistency With Applicable Greenhouse Gas Reduction Plans and Policies section above, the project is consistent with the City's CAP.

¹⁶ 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).

¹⁷ 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."

Thus, given the project's consistency with the City's CAP, the project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Given this consistency, it is concluded that the project's incremental contribution to greenhouse gas emissions and their effects on climate change would not be cumulatively considerable.

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 2022 included:

- Approximately 287,220 gigawatt hours of electricity;¹⁸
- Approximately 2,056,267 million cubic feet of natural gas per year;¹⁹ and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015).²⁰

As of 2021, 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 41.2 percent transportation;
- Approximately 23.6 percent industrial;
- Approximately 18.2 percent residential; and
- Approximately 17.1 percent commercial.²¹

California's electricity in-state generation system generates approximately 203,257 gigawatt-hours each year. In 2022, California produced approximately 71 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 12 percent) and the U.S. Southwest (approximately 17 percent). Natural gas is the main source for electricity generation at approximately 47.46 percent of the total in-state electric generation system power as shown in Table 9.

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:

- In 2022, California was the seventh-largest producer of crude oil among the 50 states, and, as of January 2022, the state ranked third in crude oil refining capacity.
- California is the largest consumer of jet fuel and second-largest consumer of motor gasoline among the 50 states.
- In 2020, California was the second-largest total energy consumer among the states, but its per capita energy consumption was less than in all but three other states.
- In 2022, renewable resources, including hydroelectric power and small-scale, customer-sited solar power, accounted for 49% of California's in-state electricity generation. Natural gas fueled another 42%. Nuclear power supplied almost all the rest.

¹⁸ California Energy Commission. Energy Almanac. Total Electric Generation. [Online] 2022. 2022 Total System Electric Generation (ca.gov).

¹⁹ Natural Gas Consumption by End Use. U.S. Energy Information Administration. [Online] 2022. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.

²⁰ California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] 2021. <https://www.energy.ca.gov/data-reports/planning-and-forecasting>

²¹ U.S. Energy Information Administration. California Energy Consumption by End-Use Sector, 2021. California State Profile Overview.[Online] January 8, 2023 <https://www.eia.gov/state/?sid=CA#tabs-2>

- In 2022, California was the fourth-largest electricity producer in the nation. The state was also the nation's third-largest electricity consumer, and additional needed electricity supplies came from out-of-state generators.²²

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

Electricity and Natural Gas

Electricity and natural gas would be provided to the project by San Diego Gas & Electric (SDG&E). SDG&E provides electrical and natural gas service to the project area through State-regulated utility contracts. SDG&E provides electric energy service to 3.7 million people located in most of San Diego County and the southern portion of Orange County, within a service area encompassing approximately 4,100 square miles.²³ The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. In 2021, SDG&E provided approximately 17,561 Gigawatt-hours per year of electricity.²⁴

Table 10 identifies SDG&E's specific proportional shares of electricity sources in 2022. As shown in Table 10, the 2022 SDG&E Power Mix has renewable energy at 44.8 percent of the overall energy resources, of which biomass and waste is at 2.9 percent, solar energy is at 28 percent, and wind power is at 13.9 percent; other energy sources include natural gas at 54.4 percent and unspecified sources at 0.8 percent.

Natural gas is delivered through a nation-wide network of high-pressure transmission pipelines. In 2021, SDG&E provided approximately 524 million therms of natural gas.²⁵

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 11 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.

California's natural gas utilities provide service to over 11 million gas meters. SoCalGas and PG&E provide service to about 5.9 million and 4.3 million customers, respectively, while SDG&E provides service to over 800, 000 customers. In 2018, California gas utilities forecasted that they would deliver about 4740 million cubic feet per day (MMcfd) of gas to their customers, on average, under normal weather conditions.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.

²² State Profile Overview. [Online] [Cited: April 20, 2023.] <https://www.eia.gov/state/?sid=CA#tabs-2>

²³ <https://www.sdge.com/more-information/our-company>

²⁴ Obtained from <http://www.ecdms.energy.ca.gov/elecbyutil.aspx>

²⁵ Obtained from <http://www.ecdms.energy.ca.gov/gasbyutil.aspx>

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 2017, for example, California utility customers received 38% of their natural gas supply from basins located in the U.S. Southwest, 27% from Canada, 27% from the U.S. Rocky Mountain area, and 8% from production located in California.²⁶

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 shows the transportation sector emits 38 percent of the total greenhouse gases in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).^{27,28} About 27 percent of total United States energy consumption in 2022 was for transporting people and goods from one place to another. In 2022, petroleum comprised about 90 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.²⁹ In 2022, about 135.06 billion gallons (or about 3.22 billion barrels) of finished motor gasoline were consumed in the United States, an average of about 370 million gallons (or about 8.81 million barrels) per day.³⁰

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.³¹

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model

²⁶ California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/

²⁷ CARB. California Greenhouse Gas Emissions Inventory – 2022 Edition. <https://www.arb.ca.gov/cc/inventory/data/data.htm>

²⁸ CARB. 2016 SIP Emission Projection Data. https://www.arb.ca.gov/app/emsmv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA

²⁹ 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

³⁰ <https://www.eia.gov/tools/faqs/faq.php?id=23&t=10>

³¹ <https://www.nhtsa.gov/lawsregulations/corporate-average-fuel-economy>.

year 2020 are 43.7 mpg and 204 grams of CO₂ per mile for passenger cars and 31.3 mpg and 284 grams of CO₂ per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes CO₂- equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.³²

On May 12, 2021, the National Highway Traffic Safety Administration (NHTSA) published a notice of proposed rulemaking in the Federal Register, proposing to repeal “The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program,” published Sept. 27, 2019 (SAFE I Rule), in which NHTSA codified regulatory text and made additional pronouncements regarding the preemption of state and local laws related to fuel economy standards. Specifically, this document proposed to fully repeal the regulatory text and appendices promulgated in the SAFE I Rule. In addition, this document proposed to repeal and withdraw the interpretative statements made by the Agency in the SAFE I Rule preamble, including those regarding the preemption of particular state Greenhouse Gas (GHG) Emissions standards or Zero Emissions Vehicle (ZEV) mandates. As such, this document proposed to establish a clean slate with respect to NHTSA’s regulations and interpretations concerning preemption under the Energy Policy and Conservation Act (EPCA). This action is effective as of January 28, 2022.³³

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of intermodal 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 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

³² 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>.

³³ <https://www.federalregister.gov/documents/2021/05/12/2021-08758/corporate-average-fuel-economy-cafe-preemption>

recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The 2022 Integrated Energy Policy Report (2022 IEPR) was adopted in February 28, 2023. The 2022 IEPR provides updates on a variety of energy issues facing California. These issues will require action if the state is to meet its climate, energy, air quality, and other environmental goals while maintaining reliability and controlling costs. The 2022 IEPR also discusses the California Energy Commission's equity and environmental justice efforts, its development of a more easily navigable online data platform via the California Energy Planning Library, and an update to the California Energy Demand Forecast. The report also provides information on emerging topics related to energy reliability, western electricity integration, hydrogen, gasoline prices, gas transition, and distributed energy resources.³⁴

The 2023 Integrated Energy Policy Report (2023 IEPR) was completed in January 2024. The 2023 IEPR discusses speeding connection of clean resources to the electricity grid, the potential use of clean and renewable hydrogen, and the California Energy Demand Forecast to 2040. The report also provides updates on topics such as gas decarbonization, energy efficiency, the Clean Transportation Program, Assembly Bill 1257 (Bocanegra, Chapter 749, Statutes of 2013), and publicly owned utilities' progress toward peak demand reserves and margins.³⁵

State of California Energy Plan

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

California Building Standards Code (Title 24)

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

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

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2022 Title 24 standards, which became effective on January 1, 2023³⁶ and build upon the 2019 Standards. The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation by requiring solar PV on new homes, providing significant GHG savings. The 2022 update builds off this progress with expanded solar standards and the move to onsite energy storage that will help Californians save on utility bills while bolstering the grid. The 2022 Energy Code update focuses on four key areas in new construction of homes and businesses:

³⁴ California Energy Commission. Final 2022 Integrated Energy Policy Report. February 2023. <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2022-integrated-energy-policy-report-update>

³⁵ California Energy Commission. Final 2023 Integrated Energy Policy Report. January 2024. <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report>

³⁶ California Energy Commission (CEC). 2022. Building Energy Efficiency Standards. <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>.

- Encouraging electric heat pump technology and use, which consumes less energy and produces fewer emissions than traditional HVACs and water heaters.
- Establishing electric-ready requirements when natural gas is installed, which positions owners to use cleaner electric heating, cooking and electric vehicle (EV) charging options whenever they choose to adopt those technologies.
- Expanding solar photovoltaic (PV) system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

The 2022 Energy Code affects homes by establishing energy budgets based on efficient heat pumps for space or water heating to encourage builders to install heat pumps over gas-fueled HVAC units; requiring homes to be electric-ready, with dedicated 240-volt outlets and space (with plumbing for water heaters) so electric appliances can eventually replace installed gas appliances; increasing minimum kitchen ventilation requirements so that fans over cooktops have higher airflow or capture efficiency to better exhaust pollution from gas cooking and improve indoor air quality; and allowing exceptions to existing solar PV standards when roof area is not available (such as for smaller homes). In addition, the effect on businesses includes establishing combined solar PV and battery standards for select businesses with systems being sized to maximize onsite use of solar energy and avoid electricity demand during times when the grid must use gas-powered plants; establishing new efficiency standards for commercial greenhouses (primarily cannabis growing); and improving efficiency standards for building envelope, various internal.

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

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

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

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

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

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

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

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

The 2022 California Green Building Standards Code became effective on January 1, 2023.³⁷

HCD amended Section 5.106.5.3 in regard to increasing the EV capable space percentages and adding a new requirement for installed Level 2 DCFC chargers.

HCD under Section 5.106.5.4 added new regulation for electric vehicle charging readiness requirements for new construction of warehouse, grocery stores, and retail stores with planned off-street loading spaces.³⁸

Senate Bill 100

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

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

Senate Bill 350

As previously discussed in Section 3 of this report, Senate Bill 350 (SB 350) was signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the 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.

Senate Bill 1020

Senate Bill 1020 (SB 1020) requires all eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, 100 percent of all retail

³⁷ California Building Standards Commission (CBSC). 2022. California Green Building Standards. Website: <https://codes.iccsafe.org/content/CAGBC2022P1>.

³⁸ <https://www.dgs.ca.gov/BSC/Resources/2022-Title-24-California-Code-Changes>

sales of electricity to California end-use customers by December 31, 2045, and 100 percent of electricity procured to serve all state agencies by December 31, 2035.

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 3 for further detail on AB 32.

Assembly Bill 1493/Pavley Regulations

As discussed in 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 CO₂ 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 in 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 and began implementation on January 1, 2011. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California’s 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. 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.³⁹

In addition, the Advanced Clean Cars II was effective as of November 30, 2022. This regulation takes the state's already growing zero-emission vehicle market and robust motor vehicle emission control rules and augments them to meet more aggressive tailpipe emissions standards and ramp up to 100 percent zero-emission vehicles. The Advanced Clean Cars II regulations will rapidly scale down light-duty passenger car, pickup truck and SUV emissions starting with the 2026 model year through 2035. The regulations are two-pronged. First, it amends the Zero-emission Vehicle Regulation to require an increasing number of zero-emission vehicles, and relies on currently available advanced vehicle technologies, including battery-electric, hydrogen fuel cell electric and plug-in hybrid electric-vehicles, to meet air quality and climate change emissions standards. These amendments support Governor Newsom's 2020 Executive Order [N-79-20](#) that requires all new passenger vehicles sold in California to be zero emissions by 2035. Second, the Low-emission Vehicle Regulations were amended to include increasingly stringent standards for gasoline cars and heavier passenger trucks to continue to reduce smog-forming emissions. In October 2023, CARB staff launched a new effort to consider potential amendments to the Advanced Clean Cars II regulations, including updates to the tailpipe greenhouse gas emission standard and limited revisions to the Low-emission Vehicle and Zero-emission Vehicle regulations.⁴⁰

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, from 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 (NO_x) 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-

³⁹ California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.

⁴⁰ California Air Resources Board, Advanced Clean Cars II. <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii>

controlled models. The newer emission-controlled models would use petroleum-based fuel in a more efficient manner.

Sustainable Communities Strategy

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

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

The proposed project is located within the SANDAG jurisdiction, which has authority to develop the SCS or APS. For the SANDAG region, the targets set by CARB are at 15 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 2022.1.1.21 Output contained in Appendix B, 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

Construction is anticipated to occur between approximately November 2024 and June 2025 and be completed in one phase. Staging of construction vehicles and equipment will occur on-site. The approximately seven-month schedule is relatively short and the project site is approximately 1.5 acres.

Construction Equipment Electricity Usage Estimates

As stated previously, Electrical service will be provided by SDG&E. 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 2021 National Construction Estimator, Richard Pray (2021)⁴¹, the typical power cost per 1,000 square feet of building construction per month is estimated to be \$2.37. The project plans to develop the site with commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Based on Table 11, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately \$101.36. Furthermore, as shown in Table 11, the total electricity usage from project construction related activities is estimated to be approximately 215 kWh.⁴²

Construction Equipment Fuel Estimates

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

- Construction schedule of 7 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~6-7 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/gallon (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 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. Table 12 shows the results of the analysis of construction equipment.

As presented in Table 12, project construction activities would consume an estimated 19,056 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.

⁴¹ Pray, Richard. 2021 National Construction Estimator. Carlsbad : Craftsman Book Company, 2021.

⁴² Assumes the project will be under the standard small commercial rate under SDG&E. <https://www.sdge.com/total-electric-rates>.

Construction Worker Fuel Estimates

It is assumed that construction worker trips are from light duty autos (LDA), light duty truck 1 (LDT1), and light duty truck 2 (LDT2) at a mix of 25 percent/50 percent/25 percent, respectively, along area roadways.⁴³ With respect to estimated VMT, the construction worker trips would generate an estimated 8,922 VMT. Data regarding project related construction worker trips were based on CalEEMod 2022.1.1.21 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 2021 EMFAC model (see Appendix C for details). An aggregate fuel efficiency of 24.95 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 13 shows that an estimated 358 gallons of fuel would be consumed for construction worker trips.

Construction Vendor/Hauling Fuel Estimates

Table 14 and Table 15 show the estimated fuel consumption for vendor and hauling during demolition, site preparation, and building construction. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 2,776 VMT. Data regarding project related construction worker trips were based on CalEEMod 2022.1.1.19 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 demolition, site preparation, and building construction would use medium to heavy duty vehicles with an average fuel consumption of 7.29 mpg for medium heavy-duty trucks and 5.83 mpg for heavy heavy-duty trucks (see Appendix C for details).⁴⁴ Tables 14 and 15 show that an estimated 459 gallons of fuel would be consumed for vendor and hauling trips.

Construction Energy Efficiency/Conservation Measures

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

⁴³ CalEEMod User's Guide Appendix C (April 2022) states that construction work trips are made by a fleet consisting of 25 percent light-duty auto (or passenger car), 50 percent light-duty truck type 1 (LDT1), and 25 percent light duty truck type 2 (LDT2).

⁴⁴ CalEEMod User's Guide Appendix C (April 2022) states that vendor trips are made by a fleet consisting of 50 percent medium trucks (MHDT) and 50 percent heavy trucks (HHDT) and that hauling and onsite truck trips are made by a fleet consisting of 100 percent HHDT.

Enforcement of idling limitations is realized through periodic site inspections conducted by City 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, for both the proposed project and the existing restaurant uses to be removed, an average trip for autos and light trucks was assumed to be 5.54 miles and 3- 4-axle trucks were assumed to travel an average of 6.64 miles.⁴⁵ In order to present a worst-case scenario, it was assumed that vehicles would operate 365 days per year. Table 16 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.⁴⁶

The proposed project would generate a total of 1,740 weekday trips per day (with incorporation of pass-by trip reduction) and the existing restaurant uses to be removed by the proposed project generate 230 weekday trips per day (with incorporation of pass-by trip reduction). The vehicle fleet mix was used from the CalEEMod output. Table 16 shows that an estimated 149,262 gallons of fuel would be consumed per year for the operation of the proposed project. However, the existing restaurant uses to be removed by the proposed project consume approximately 19,778 gallons of fuel per year. Therefore, with the incorporation of the reduction of existing uses, operation of proposed project would result in a net increase of approximately 129,485 gallons of fuel consumption per year.

Trip generation and VMT generated by the proposed project are consistent with other similar commercial uses of similar scale and configuration as reflected respectively in the Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (SANDAG 2002). That is, the proposed project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption. Furthermore, the state of California consumed approximately 3.1 billion gallons of diesel and 13.6 billion gallons of gasoline in 2022.^{47,48} Therefore, the increase in fuel consumption from the proposed project is insignificant in comparison to the State's demand. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity and natural gas (provided by SDG&E). 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 17.

⁴⁵ CalEEMod default distance for the both the existing uses and proposed project is 6.64 miles for W-O (work-other) and O-O (other-other) is 5.54 miles. The trip type utilized for each vehicle category was determined based on both the description of the trip type (CalEEMod User's Guide Appendix A, 2022) as well as the total daily VMT calculated by CalEEMod.

⁴⁶ Average fuel economy based on aggregate mileage calculated in EMFAC 2021 for opening year (2025). See Appendix C for EMFAC output.

⁴⁷ <https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics>

⁴⁸ <https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics> and <https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm>

As shown in Table 17, the estimated electricity demand for the proposed project, with incorporation of the existing uses, is approximately 173,578 kWh per year. In 2022, the non-residential sector of the County of San Diego consumed approximately 12,802 million kWh of electricity.⁴⁹ In addition, the estimated natural gas consumption for the proposed project, with incorporation of the existing uses, is approximately 418,037 kBtu per year. In 2022, the non-residential sector of the County of San Diego consumed approximately 241 million therms of gas.⁵⁰ Therefore, the increase in both electricity and natural gas demand from the proposed project is insignificant compared to the County's 2022 non-residential sector demand.

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.). The proposed project would be required to comply with Title 24 standards.

Furthermore, the proposed project energy demands in total would be comparable to other commercial projects of similar scale and configuration. Therefore, the project facilities' energy demands, and energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

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 SDG&E.

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 City of Escondido Climate Action.

CONCLUSIONS

As supported by the preceding analyses, project construction and operations would not result in the inefficient, wasteful or unnecessary consumption of energy. The proposed project does not include any 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 and is a commercial project that is not proposing any additional features that would require a larger energy demand than other commercial projects of similar scale and configuration. The energy demands of the project are anticipated to be accommodated

⁴⁹ California Energy Commission, Electricity Consumption by County. <https://ecdms.energy.ca.gov/elecbycounty.aspx>

⁵⁰ California Energy Commission, Gas Consumption by County. <http://ecdms.energy.ca.gov/gasbycounty.aspx>

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 conservation 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 9
Total Electricity System Power (California 2022)**

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	Total California Energy Mix (GWh)	Total California Power Mix
Coal	273	0.13%	181	5,716	5,897	6,170	2.15%
Natural Gas	96,457	47.46%	44	7,994	8,038	104,495	36.38%
Oil	65	0.03%	-	-	-	65	0.02%
Other (Waste Heat/Petroleum Coke)	315	0.15%	-	-	-	315	0.11%
Unspecified Sources of Power	-	0.00%	12,485	7,943	20,428	20,428	7.11%
Total Thermal and Unspecified	97,110	47.78%	12,710	21,653	34,363	121,473	45.77%
Nuclear	17,627	8.67%	397	8342	8739	26,366	9.18%
Large Hydro	14,607	7.19%	10,803	1,118	11,921	26,528	9.24%
Biomass	5,366	2.64%	771	25	797	6,162	2.15%
Geothermal	11,110	5.47%	253	2,048	2,301	13,412	4.67%
Small Hydro	3,005	1.48%	211	13	225	3,230	1.12%
Solar	40,494	19.92%	231	8,225	8,456	48,950	17.04%
Wind	13,938	6.86%	8,804	8,357	17,161	31,099	10.83%
Total Non-GHG and Renewables	106,147	52.22%	21,471	28,129	49,599	155,747	54.23%
Total Energy	203,257	100%	34,180	49,782	83,962	287,220	100%

Notes:

(1) Source: California Energy Commission. 2022 Total System Electric Generation. <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2022-total-system-electric-generation>

Table 10
SDG&E 2022 Power Content Mix

Energy Resources	2022 SDG&E Power Mix
Eligible Renewable ¹	44.8%
Biomass & Biowaste	2.9%
Geothermal	0%
Eligible Hydroelectric	0%
Solar	28.0%
Wind	13.9%
Coal	0%
Large Hydroelectric	0.0%
Natural Gas	54.4%
Nuclear	0.0%
Other	0%
Unspecified Sources of power ²	0.8%
Total	100%

Notes:

Source: https://www.sdge.com/sites/default/files/documents/16402%20SDGE_PCL_Sept23.01.pdf

- (1) The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology.
- (2) Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.

Table 11
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
\$2.37	6.110	7	\$101.36

Cost per kWh ¹	Total Project Construction Electricity Usage (kWh)
\$0.47	215

Notes:

(1) Assumes the project will be under the standard small commercial rate under SDG&E.
<https://www.sdge.com/total-electric-rates>

**Table 12
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 Saws	1	8	33	0.73	193	208
	20	Rubber Tired Dozers	1	8	367	0.4	1174	1270
	20	Tractors/Loaders/Backhoes	3	8	84	0.37	746	806
Site Preparation	2	Graders	1	8	148	0.41	485	52
	2	Rubber Tired Dozers	1	7	367	0.4	1028	111
	2	Tractors/Loaders/Backhoes	1	8	84	0.37	249	27
Grading	4	Rubber Tired Dozers	1	8	367	0.4	1174	254
	4	Tractors/Loaders/Backhoes	1	7	84	0.37	218	47
	4	Plate Compactors	1	8	8	0.43	28	6
	4	Excavators	1	8	36	0.38	109	24
Building Construction	120	Cranes	2	6	367	0.29	1,277	8,284
	120	Forklifts	2	6	82	0.2	197	1,277
	120	Generator Sets	1	8	14	0.74	83	538
	120	Tractors/Loaders/Backhoes	2	6	84	0.37	373	2,419
	120	Welders	3	8	46	0.45	497	3,222
Paving	10	Cement and Mortar Mixers	1	6	10	0.56	34	18
	10	Pavers	1	6	81	0.42	204	110
	10	Paving Equipment	1	8	89	0.36	256	139
	10	Rollers	1	7	36	0.38	96	52
	10	Tractors/Loaders/Backhoes	1	8	84	0.37	249	134
Architectural Coating	10	Air Compressors	1	6	37	0.48	107	58
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								19,056

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 13
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	12.5	12	3,000	24.95	120
Site Preparation	2	7.5	12	180	24.95	7
Grading	4	10	12	480	24.95	19
Building Construction	120	2.57	12	3,701	24.95	148
Paving	10	12.5	12	1,500	24.95	60
Architectural Coating	10	0.51	12	61	24.95	2
Total Construction Worker Fuel Consumption						358

Notes:

- (1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod Version 2022.1.1.21 defaults.
- (2) Per CalEEMod User's Guide Appendix C (April 2022), CalEEMod assumes that construction work trips are made by a fleet consisting of 25 percent light-duty auto (or passenger car), 50 percent light-duty truck type 1 (LDT1), and 25 percent light duty truck type 2 (LDT2).

**Table 14
Construction Vendor Fuel Consumption Estimates (MHD & HHD Trucks)**

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles) ¹	Vehicle Miles Traveled ¹	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	0	7.63	0	6.56	0
Site Preparation	2	0	7.63	0	6.56	0
Grading	4	0	7.63	0	6.56	0
Building Construction	120	1	7.63	916	6.56	140
Paving	10	0	7.63	0	6.56	0
Architectural Coating	10	0	7.63	0	6.56	0
Total Construction Vendor Fuel Consumption						140

Notes:

- (1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod Version 2022.1.1.21 defaults.
- (2) Per CalEEMod User's Guide Appendix C (April 2022), CalEEMod assumes vendor trips are made by a fleet consisting of 50 percent medium trucks (MHDT) and 50 percent heavy trucks (HHDT).

Table 15
Construction Hauling Fuel Consumption Estimates (HHD Trucks)

Phase	Number of Days	Total Hauling Trips	Trip Length (miles) ¹	Vehicle Miles Traveled ¹	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	1.4	20	560	5.83	96
Site Preparation	2	32.5	20	1,300	5.83	223
Grading	4	0	20	0	5.83	0
Building Construction	120	0	20	0	5.83	0
Paving	10	0	20	0	5.83	0
Architectural Coating	10	0	20	0	5.83	0
Total Construction Hauling Fuel Consumption						319

Notes:

- (1) Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod Version 2022.1.1.21 defaults.
- (2) Per CalEEMod User's Guide Appendix C (April 2022), CalEEMod assumes hauling and onsite truck trips are made by a fleet consisting of 100 percent HHDT.

Table 16
Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles ¹	Average Trip Length (miles) ²	Daily VMT	Average Fuel Economy (mpg) ³	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Proposed Project							
Light Auto	Automobile	877	5.54	4,859	31.5	154.24	56,298
Light Truck	Automobile	86	5.54	476	23.63	20.16	7,359
Light Truck	Automobile	390	5.54	2,161	23.52	91.86	33,530
Light Heavy Truck	2-Axle Truck	49	5.54	271	11.89	22.83	8,333
Light Heavy Truck 10,000 lbs +	2-Axle Truck	13	5.54	72	11.57	6.22	2,272
Motorcycle	Automobile	48	5.54	266	39.12	6.80	2,481
Medium Truck	Automobile	237	5.54	1,313	19.5	67.33	24,576
Motor Home	--	10	5.54	55	5.27	10.51	3,837
Medium Heavy Truck	3-Axle Truck	15	6.64	100	7.4	13.46	4,913
Other Bus	--	1	5.54	6	5.69	0.97	355
School Bus	--	2	5.54	11	8.6	1.29	470
Urban Bus	--	1	5.54	6	5.79	0.96	349
Heavy Heavy Truck	4-Axle Truck	11	6.64	73	5.94	12.30	4,488
Total		1,740	--	9,668	-	408.94	--
Total Annual Fuel Consumption - Proposed Project							149,262
Existing Restaurant Use to be Removed							
Light Auto	Automobile	116	5.54	643	31.5	20.40	7,446
Light Truck	Automobile	12	5.54	66	23.63	2.81	1,027
Light Truck	Automobile	51	5.54	283	23.52	12.01	4,385
Light Heavy Truck	2-Axle Truck	7	5.54	39	11.89	3.26	1,190
Light Heavy Truck 10,000 lbs +	2-Axle Truck	2	5.54	11	11.57	0.96	350
Motorcycle	Automobile	6	5.54	33	39.12	0.85	310
Medium Truck	Automobile	31	5.54	172	19.5	8.81	3,215
Motor Home	--	1	5.54	6	5.27	1.05	384
Medium Heavy Truck	3-Axle Truck	2	6.64	13	7.4	1.79	655
Other Bus	--	0	5.54	0	5.69	0.00	0
School Bus	--	0	5.54	0	8.6	0.00	0
Urban Bus	--	0	5.54	0	5.79	0.00	0
Heavy Heavy Truck	4-Axle Truck	2	6.64	13	5.94	2.24	816
Total		230	--	1,279	-	54.19	--
Total Annual Fuel Consumption - Existing Restaurant to be Removed							19,778
Total Net Annual Fuel Consumption with Incorporation of Reduction from Removal of Existing Uses							+129,485

Notes:

- (1) Based on the size of the site and relative location, trips were assumed to be local rather than regional.
- (2) The project analysis utilizes the weekday net total vehicle trips of 1,740 trips per day as provided in the Transportation Impact Comparison (Ganddini Group February 12, 2024). It should be noted that this net total trip calculation includes pass-by reductions, but not the reduction of existing uses. In addition, to be consistent and conservative, the existing use to be removed analysis utilized the weekday trips with pass-by reduction (230 total daily vehicle trips).
- (3) Based on EMFAC2021 emission rates for opening year of 2025.

Table 17
Project Annual Operational Energy Demand Summary

Natural Gas Demand	kBTU/year ^{1,2}
Proposed Project:	
Fast-Food Restaurant with Drive-Through	522,687
Fast-Food Restaurant without Drive-Through ²	164,112
Subtotal - Proposed Project	686,799
Reduction from existing restaurant use to be removed	-268,762
Net Total	+418,037

Electricity Demand	kWh/year
Proposed Project:	
Fast-Food Restaurant with Drive-Through	165,646
Fast-Food Restaurant without Drive-Through ²	52,009
Parking Lot	41,097
Subtotal - Proposed Project	258,752
Reduction from existing restaurant use to be removed	-85,174
Net Total	+173,578

Notes:

- (1) Taken from the CalEEMod 2022.1.1.21 output (Appendix B of this report).
- (2) The proposed coffee shop with drive-through was modeled as a Fast-Food Restaurant without Drive-Through in CalEEMod as it was the closest land use available.

5. EMISSIONS REDUCTION MEASURES

CONSTRUCTION MEASURES

Adherence to SDAPCD Rule 55 is required.

No construction mitigation is required.

OPERATIONAL MEASURES

No operational mitigation is required.

6. REFERENCES

California Air Resources Board

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- 2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act
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- 2012 General Plan. May.
- 2021 Climate Action Plan. March.

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- 2024 503 West Mission Commercial Project Transportation Impact Comparison. February 12.

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- 2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

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- 2007 County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Air Quality. March 19.

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1998 Rule 20.3 New Source Review: Major Stationary Sources and PSD Stationary Sources, Amended November 4.

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(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 Detailed Report

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APPENDIX A

GLOSSARY

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 ₂ e	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 ₂ e	Metric tons of carbon dioxide equivalent
MMTCO ₂ e	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NO _x	Nitrogen Oxides
NO ₂	Nitrogen dioxide
N ₂ O	Nitrous oxide
O ₃	Ozone
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particle matter
PM ₁₀	Particles that are less than 10 micrometers in diameter
PM _{2.5}	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
SO _x	Sulfur Oxides
TAC	Toxic air contaminants
VOC	Volatile organic compounds

APPENDIX B
CALEEMOD MODEL DETAILED REPORT

19703 - EXISTING USES OPERATIONAL ANALYSIS ONLY - 503 West Mission Commercial Project Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19703 - EXISTING USES OPERATIONAL ANALYSIS ONLY - 503 West Mission Commercial Project
Operational Year	2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	26.6
Location	33.12749826337111, -117.09163050076094
County	San Diego
City	Escondido
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6202
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
High Turnover (Sit Down Restaurant)	2.39	1000sqft	0.05	2,391	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.12	1.08	0.79	7.37	0.02	0.02	1.34	1.35	0.02	0.34	0.36
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.08	1.04	0.86	6.89	0.02	0.02	1.34	1.35	0.02	0.34	0.36
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.00	0.98	0.71	5.68	0.01	0.02	0.99	1.01	0.02	0.25	0.27
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.18	0.13	1.04	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.09	1.01	0.72	7.21	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Area	0.02	0.07	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—

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Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	1.12	1.08	0.79	7.37	0.02	0.02	1.34	1.35	0.02	0.34	0.36
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.07	0.98	0.79	6.83	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Area	—	0.05	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	1.08	1.04	0.86	6.89	0.02	0.02	1.34	1.35	0.02	0.34	0.36
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.98	0.91	0.64	5.56	0.01	0.01	0.99	1.00	0.01	0.25	0.26
Area	0.01	0.06	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	1.00	0.98	0.71	5.68	0.01	0.02	0.99	1.01	0.02	0.25	0.27
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.18	0.17	0.12	1.02	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05
Area	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	0.18	0.18	0.13	1.04	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	1.09	1.01	0.72	7.21	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Total	1.09	1.01	0.72	7.21	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	1.07	0.98	0.79	6.83	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Total	1.07	0.98	0.79	6.83	0.02	0.01	1.34	1.35	0.01	0.34	0.35
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	0.18	0.17	0.12	1.02	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05
Total	0.18	0.17	0.12	1.02	< 0.005	< 0.005	0.18	0.18	< 0.005	0.05	0.05

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01

Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.05	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.02	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	0.02	0.07	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.05	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—
Total	—	0.05	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
---------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
High Turnover (Sit Down Restaurant)	230	230	230	83,946	1,245	1,892	1,892	521,962

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	3,587	1,196	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High Turnover (Sit Down Restaurant)	85,174	589	0.0330	0.0040	268,762

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High Turnover (Sit Down Restaurant)	725,749	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High Turnover (Sit Down Restaurant)	28.5	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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5.17. User Defined

Equipment Type	Fuel Type
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5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	16.8	annual days of extreme heat
Extreme Precipitation	5.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	14.0	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento–San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
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Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	47.4
AQ-PM	15.0
AQ-DPM	32.7
Drinking Water	47.8
Lead Risk Housing	10.4
Pesticides	45.1
Toxic Releases	12.9
Traffic	34.3
Effect Indicators	—
CleanUp Sites	77.0
Groundwater	89.2
Haz Waste Facilities/Generators	92.7
Impaired Water Bodies	98.1
Solid Waste	98.1
Sensitive Population	—
Asthma	10.1
Cardio-vascular	50.9
Low Birth Weights	13.5
Socioeconomic Factor Indicators	—

Education	44.6
Housing	20.3
Linguistic	9.46
Poverty	56.8
Unemployment	4.23

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	43.19260875
Employed	33.54292314
Median HI	43.89837033
Education	—
Bachelor's or higher	55.60118055
High school enrollment	100
Preschool enrollment	27.28089311
Transportation	—
Auto Access	52.9449506
Active commuting	35.67303991
Social	—
2-parent households	10.17579879
Voting	77.73643013
Neighborhood	—
Alcohol availability	64.09598358
Park access	10.9842166
Retail density	67.71461568

Supermarket access	49.05684589
Tree canopy	40.74169126
Housing	—
Homeownership	70.80713461
Housing habitability	77.96740665
Low-inc homeowner severe housing cost burden	27.81983832
Low-inc renter severe housing cost burden	82.63826511
Uncrowded housing	64.30129603
Health Outcomes	—
Insured adults	59.70742974
Arthritis	9.5
Asthma ER Admissions	89.2
High Blood Pressure	35.9
Cancer (excluding skin)	18.5
Asthma	34.7
Coronary Heart Disease	12.2
Chronic Obstructive Pulmonary Disease	12.3
Diagnosed Diabetes	34.4
Life Expectancy at Birth	48.8
Cognitively Disabled	4.2
Physically Disabled	33.4
Heart Attack ER Admissions	81.6
Mental Health Not Good	38.2
Chronic Kidney Disease	27.1
Obesity	47.2
Pedestrian Injuries	61.2
Physical Health Not Good	36.4

Stroke	22.5
Health Risk Behaviors	—
Binge Drinking	40.3
Current Smoker	38.5
No Leisure Time for Physical Activity	43.7
Climate Change Exposures	—
Wildfire Risk	22.5
SLR Inundation Area	0.0
Children	67.0
Elderly	38.5
English Speaking	79.4
Foreign-born	34.7
Outdoor Workers	37.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	62.4
Traffic Density	65.0
Traffic Access	46.3
Other Indices	—
Hardship	41.9
Other Decision Support	—
2016 Voting	76.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	30.0
Healthy Places Index Score for Project Location (b)	43.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No

Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Operations: Vehicle Data	Per the Transportation Impact Comparison (Ganddini 2024), 96.19 trips/TSF for both Weekdays & Saturdays (w/ pass-by rdx). No Sunday rates provided in Transportation Impact Comparison; therefore, Saturday rates used for Sunday. Pass-by trip %'s were changed to zero & split between primary and diverted %s.

19703 503 West Mission Commercial Project Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	19703 503 West Mission Commercial Project
Construction Start Date	11/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	26.6
Location	33.12750033070468, -117.09160441679279
County	San Diego
City	Escondido
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6202
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
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Fast Food Restaurant with Drive Thru	4.65	1000sqft	0.11	4,650	8,775	—	—	—
Parking Lot	64.0	Space	1.08	0.00	0.00	—	—	—
Fast Food Restaurant w/o Drive Thru	1.46	1000sqft	0.03	1,460	3,490	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.60	6.59	18.7	23.0	0.04	0.73	0.14	0.87	0.67	0.03	0.71
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.99	1.67	17.0	16.6	0.03	0.69	4.87	5.56	0.64	1.62	2.25
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.53	0.57	3.87	4.40	0.01	0.15	0.07	0.16	0.14	0.03	0.14
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.10	0.71	0.80	< 0.005	0.03	0.01	0.03	0.02	< 0.005	0.03

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	2.60	6.59	18.7	23.0	0.04	0.73	0.14	0.87	0.67	0.03	0.71
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
2024	1.99	1.67	17.0	16.6	0.03	0.69	4.87	5.56	0.64	1.62	2.25
2025	1.80	1.50	13.1	14.7	0.03	0.50	0.03	0.53	0.46	0.01	0.47
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2024	0.22	0.19	1.72	1.79	< 0.005	0.07	0.07	0.14	0.07	0.03	0.09
2025	0.53	0.57	3.87	4.40	0.01	0.15	0.01	0.16	0.14	< 0.005	0.14
Annual	—	—	—	—	—	—	—	—	—	—	—
2024	0.04	0.03	0.31	0.33	< 0.005	0.01	0.01	0.03	0.01	< 0.005	0.02
2025	0.10	0.10	0.71	0.80	< 0.005	0.03	< 0.005	0.03	0.02	< 0.005	0.03

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.4	9.72	6.82	68.0	0.16	0.14	13.3	13.4	0.13	3.36	3.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.1	9.45	7.48	64.2	0.15	0.14	13.3	13.4	0.13	3.36	3.49
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.47	7.99	5.54	47.9	0.11	0.10	9.03	9.13	0.10	2.29	2.39
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.55	1.46	1.01	8.74	0.02	0.02	1.65	1.67	0.02	0.42	0.44

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.3	9.52	6.64	67.6	0.16	0.12	13.3	13.4	0.12	3.36	3.48
Area	0.05	0.19	< 0.005	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	0.02	0.01	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	10.4	9.72	6.82	68.0	0.16	0.14	13.3	13.4	0.13	3.36	3.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.1	9.29	7.29	64.0	0.15	0.12	13.3	13.4	0.12	3.36	3.48
Area	—	0.15	—	—	—	—	—	—	—	—	—
Energy	0.02	0.01	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	10.1	9.45	7.48	64.2	0.15	0.14	13.3	13.4	0.13	3.36	3.49
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.43	7.81	5.35	47.6	0.10	0.09	9.03	9.12	0.08	2.29	2.37
Area	0.02	0.17	< 0.005	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	0.02	0.01	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—

Total	8.47	7.99	5.54	47.9	0.11	0.10	9.03	9.13	0.10	2.29	2.39
Annual	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.54	1.43	0.98	8.69	0.02	0.02	1.65	1.66	0.02	0.42	0.43
Area	< 0.005	0.03	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Energy	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Water	—	—	—	—	—	—	—	—	—	—	—
Waste	—	—	—	—	—	—	—	—	—	—	—
Refrig.	—	—	—	—	—	—	—	—	—	—	—
Total	1.55	1.46	1.01	8.74	0.02	0.02	1.65	1.67	0.02	0.42	0.44

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.92	1.61	15.6	16.0	0.02	0.67	—	0.67	0.62	—	0.62
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.85	0.88	< 0.005	0.04	—	0.04	0.03	—	0.03
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.54	0.00	0.00	0.11	0.11	0.00	0.02	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.14	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.70	1.43	13.7	12.9	0.02	0.65	—	0.65	0.59	—	0.59
Dust From Material Movement	—	—	—	—	—	—	2.44	2.44	—	1.17	1.17
Demolition	—	—	—	—	—	—	1.76	1.76	—	0.27	0.27
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.06	0.06	0.00	0.01	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.18	0.05	3.32	1.16	0.02	0.04	0.60	0.65	0.04	0.16	0.21
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.54	1.29	12.5	11.3	0.02	0.55	—	0.55	0.50	—	0.50
Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.43	0.00	0.00	0.08	0.08	0.00	0.02	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.89	1.58	13.9	14.7	0.03	0.57	—	0.57	0.52	—	0.52
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.63	0.66	< 0.005	0.03	—	0.03	0.02	—	0.02
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.11	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	13.1	14.6	0.03	0.50	—	0.50	0.46	—	0.46
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	13.1	14.6	0.03	0.50	—	0.50	0.46	—	0.46
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	0.42	3.71	4.14	0.01	0.14	—	0.14	0.13	—	0.13
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.68	0.76	< 0.005	0.03	—	0.03	0.02	—	0.02
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	0.01	0.01
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.63	6.50	0.01	0.20	—	0.20	0.19	—	0.19
Paving	—	0.28	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01

Paving	—	0.01	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.58	0.00	0.00	0.11	0.11	0.00	0.02	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03
Architectural Coatings	—	4.14	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Architectural Coatings	—	0.11	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	8.22	7.57	5.28	53.8	0.12	0.10	10.5	10.6	0.09	2.67	2.77
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fast Food Restaurant w/o Drive Thru	2.12	1.95	1.36	13.8	0.03	0.03	2.71	2.74	0.02	0.69	0.71
Total	10.3	9.52	6.64	67.6	0.16	0.12	13.3	13.4	0.12	3.36	3.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	8.05	7.39	5.80	50.9	0.12	0.10	10.5	10.6	0.09	2.67	2.77
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Fast Food Restaurant w/o Drive Thru	2.07	1.90	1.49	13.1	0.03	0.03	2.71	2.74	0.02	0.69	0.71
Total	10.1	9.29	7.29	64.0	0.15	0.12	13.3	13.4	0.12	3.36	3.48
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	1.34	1.25	0.84	7.44	0.02	0.01	1.39	1.41	0.01	0.35	0.37
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fast Food Restaurant w/o Drive Thru	0.20	0.18	0.14	1.25	< 0.005	< 0.005	0.26	0.26	< 0.005	0.06	0.07
Total	1.54	1.43	0.98	8.69	0.02	0.02	1.65	1.66	0.02	0.42	0.43

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	0.02	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	0.02	0.01	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	0.02	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	0.02	0.01	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.13	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—

Landscape Equipment	0.05	0.04	< 0.005	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	0.05	0.19	< 0.005	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.13	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—
Total	—	0.15	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.02	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Total	< 0.005	0.03	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—

Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant with Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
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Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	11/1/2024	11/29/2024	5.00	20.0	—
Site Preparation	Site Preparation	11/30/2024	12/2/2024	5.00	2.00	—
Grading	Grading	12/3/2024	12/8/2024	5.00	4.00	—
Building Construction	Building Construction	12/9/2024	5/25/2025	5.00	120	—
Paving	Paving	5/17/2025	6/1/2025	5.00	10.0	—
Architectural Coating	Architectural Coating	5/17/2025	6/1/2025	5.00	10.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37

Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Building Construction	Cranes	Diesel	Average	2.00	6.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	12.0	LDA,LDT1,LDT2
Demolition	Vendor	—	7.63	HHDT,MHDT
Demolition	Hauling	1.40	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	12.0	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.63	HHDT,MHDT
Site Preparation	Hauling	32.5	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	12.0	LDA,LDT1,LDT2
Grading	Vendor	—	7.63	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	2.57	12.0	LDA,LDT1,LDT2
Building Construction	Vendor	1.00	7.63	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	12.0	LDA,LDT1,LDT2
Paving	Vendor	—	7.63	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	0.51	12.0	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.63	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	9,165	3,055	2,815

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	2,391	—
Site Preparation	—	—	1.88	257	—
Grading	—	—	2.00	0.00	—
Paving	0.00	0.00	0.00	0.00	1.08

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Fast Food Restaurant with Drive Thru	0.00	0%
Parking Lot	1.08	100%
Fast Food Restaurant w/o Drive Thru	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	589	0.03	< 0.005
2025	0.00	589	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Fast Food Restaurant with Drive Thru	1,814	1,814	1,814	662,114	9,416	14,921	14,921	4,010,900
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Fast Food Restaurant w/o Drive Thru	156	467	467	89,373	1,283	3,841	3,841	735,138
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5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	9,165	3,055	2,815

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Fast Food Restaurant with Drive Thru	165,646	589	0.0330	0.0040	522,687
Parking Lot	41,097	589	0.0330	0.0040	0.00
Fast Food Restaurant w/o Drive Thru	52,009	589	0.0330	0.0040	164,112

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Fast Food Restaurant with Drive Thru	1,411,432	131,133
Parking Lot	0.00	0.00
Fast Food Restaurant w/o Drive Thru	443,159	52,155

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Fast Food Restaurant with Drive Thru	53.6	—
Parking Lot	0.00	—
Fast Food Restaurant w/o Drive Thru	16.8	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Fast Food Restaurant with Drive Thru	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Fast Food Restaurant with Drive Thru	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Fast Food Restaurant with Drive Thru	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Fast Food Restaurant w/o Drive Thru	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00

Fast Food Restaurant w/o Drive Thru	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Fast Food Restaurant w/o Drive Thru	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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5.17. User Defined

Equipment Type	Fuel Type
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5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	16.8	annual days of extreme heat
Extreme Precipitation	5.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	14.0	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	47.4
AQ-PM	15.0
AQ-DPM	32.7
Drinking Water	47.8
Lead Risk Housing	10.4
Pesticides	45.1
Toxic Releases	12.9
Traffic	34.3
Effect Indicators	—
CleanUp Sites	77.0
Groundwater	89.2
Haz Waste Facilities/Generators	92.7
Impaired Water Bodies	98.1
Solid Waste	98.1
Sensitive Population	—
Asthma	10.1
Cardio-vascular	50.9

Low Birth Weights	13.5
Socioeconomic Factor Indicators	—
Education	44.6
Housing	20.3
Linguistic	9.46
Poverty	56.8
Unemployment	4.23

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	43.19260875
Employed	33.54292314
Median HI	43.89837033
Education	—
Bachelor's or higher	55.60118055
High school enrollment	100
Preschool enrollment	27.28089311
Transportation	—
Auto Access	52.9449506
Active commuting	35.67303991
Social	—
2-parent households	10.17579879
Voting	77.73643013
Neighborhood	—
Alcohol availability	64.09598358

Park access	10.9842166
Retail density	67.71461568
Supermarket access	49.05684589
Tree canopy	40.74169126
Housing	—
Homeownership	70.80713461
Housing habitability	77.96740665
Low-inc homeowner severe housing cost burden	27.81983832
Low-inc renter severe housing cost burden	82.63826511
Uncrowded housing	64.30129603
Health Outcomes	—
Insured adults	59.70742974
Arthritis	9.5
Asthma ER Admissions	89.2
High Blood Pressure	35.9
Cancer (excluding skin)	18.5
Asthma	34.7
Coronary Heart Disease	12.2
Chronic Obstructive Pulmonary Disease	12.3
Diagnosed Diabetes	34.4
Life Expectancy at Birth	48.8
Cognitively Disabled	4.2
Physically Disabled	33.4
Heart Attack ER Admissions	81.6
Mental Health Not Good	38.2
Chronic Kidney Disease	27.1
Obesity	47.2

Pedestrian Injuries	61.2
Physical Health Not Good	36.4
Stroke	22.5
Health Risk Behaviors	—
Binge Drinking	40.3
Current Smoker	38.5
No Leisure Time for Physical Activity	43.7
Climate Change Exposures	—
Wildfire Risk	22.5
SLR Inundation Area	0.0
Children	67.0
Elderly	38.5
English Speaking	79.4
Foreign-born	34.7
Outdoor Workers	37.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	62.4
Traffic Density	65.0
Traffic Access	46.3
Other Indices	—
Hardship	41.9
Other Decision Support	—
2016 Voting	76.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	30.0

Healthy Places Index Score for Project Location (b)	43.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Site is ~1.5 acres with 1,460 sf coffee-shop with DT with 3,490 sf landscaping, 4,650 sf fast-food restaurant w/ DT with 8,774.88 sf landscaping, and a parking lot with 64 parking spaces (total paved area calculated at ~1.077 acres based on remainder of site area).
Construction: Construction Phases	Construction anticipated to begin November 2024 and be completed by June 2025, lasting ~7 months. Site anticipated to balance.
Construction: Off-Road Equipment	Per applicant, grading to include a dozer, compactor, excavator & backhoe, all other equipment for construction phases based on CalEEMod default list. CalEEMod default construction timing for the building construction phase was reduced by ~40%; therefore, ~40% more equipment has been added to the building construction phase.
Construction: Demolition	Demo of existing 2,391 sf restaurant. Removal of existing trees/shrubs and existing asphalt & concrete (parking lots, pool/tennis court etc.) included in site prep (estimated at ~0.92 ac or 40,075 sf asphalt/concrete to be removed = $40,075 \text{sf} \times 0.3 \text{in} = 12,023 \text{cft} \times 45 \text{lbs/cf} = 541,013 \text{lbs} = \sim 257 \text{ tons}$).

<p>Operations: Vehicle Data</p>	<p>Per Transportation Impact Comparison (Ganddini 2024), 390.11 trips/TSF for both weekday and Saturday (w/ pass-by rdx) for fast food restaurant w/ DT uses & 106.85 trips/TSF/Weekday (w/ pass-by rdx) & 319.86 trips/TSF/Saturday (w/ pass-by rdx) for coffee shop use. Transportation Impact Comparison Saturday rates used for Sunday rates. Pass-by trip %'s were changed to zero & split between primary and diverted %s.</p>
<p>Construction: Dust From Material Movement</p>	<p>—</p>

APPENDIX C

EMFAC DATA & CAP CONSISTENCY CHECKLIST



Climate Action Plan Consistency Review Checklist

Project # _____

Introduction

The City of Escondido (“City”) adopted an updated Climate Action Plan (“CAP”) on March 10, 2021 by Resolution No. 2021-37. The CAP outlines strategies and measures that the City will undertake to achieve its proportional share of State greenhouse gas (“GHG”) emissions reduction targets. The CAP’s strategies and measures are designed to reduce GHG emissions for build-out under the General Plan. The CAP does so by (1) calculating a baseline GHG emissions level as of 2012; and (2) estimating future GHG emissions under a business as usual standard; and (3) implementing state mandated GHG reduction targets. Measures to reduce GHG emissions for projects with land use consistent with the City’s General Plan are found in the CAP.

Analysis of GHG emissions and potential climate change impacts from new development is required under CEQA. The purpose of the CAP Consistency Checklist (“Checklist”) is to provide a streamlined review process for proposed development projects that trigger environmental review pursuant to the California Environmental Quality Act (“CEQA”).

The City’s CAP is a qualified GHG emissions reduction plan in accordance with State CEQA Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project’s incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of a CAP. Projects that are consistent with the General Plan and implement applicable CAP GHG reduction measures may incorporate by reference the CAP’s cumulative GHG analysis. Conversely, projects that are consistent with the General Plan, but do not implement CAP GHG reduction measures, as well as General Plan Amendments and Annexations that increase emissions beyond CAP projections — will require a project-level GHG analysis.

The purpose of this Checklist is to implement GHG reduction measures from the CAP and determine if development would demonstrate consistency with the CAP’s assumptions for implementation. Projects that are consistent with the CAP, as determined through the use of this Checklist, may rely on the CAP for the cumulative impact analysis of GHG emissions. Projects that are not consistent with the CAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions, incorporation of the measures in this Checklist to the extent applicable, and demonstration of consistency with a VMT threshold currently in development by the City. Cumulative GHG impacts could be significant for any project that is not consistent with the CAP.

This Checklist may be updated periodically to incorporate new GHG reduction techniques, include reference to or requirements of new ordinances adopted by the City, or to comply with later amendments to the CAP or local, State, or federal law. Comprehensive updates to this Checklist will be coordinated with each CAP update. Administrative updates to the Checklist may occur regularly, as necessary for the

purpose of keeping the Checklist up-to-date and implementable. Updates to the CAP Checklist associated with an update to the City's CAP would require City Council approval and shall comply with CEQA.

Applicability and Procedures

This Checklist is required only for discretionary projects¹ that are subject to and not exempt from CEQA. Projects that are exempt from CEQA are deemed to be consistent with the City's CAP, and no further review is necessary, with the exception of a Class 32 "In-Fill Development Projects" categorical exemption (State CEQA Guidelines Section 15332), for which projects are required to demonstrate consistency with the CAP through this Checklist.

General procedures for Checklist compliance and review are described below. Specific guidance is also provided under each of the questions under Steps 1 and 2 of the Checklist.

- The City's Community Development Department reviews development applications relative to environmental review requirements under Article 47 of the Escondido Zoning Code. These environmental quality regulations implement CEQA and State CEQA Guidelines by applying the provisions and procedures contained in CEQA to development projects proposed within the City.
- The project proponent or applicant must demonstrate if the project request is CAP compliant to the satisfaction of the Director of Community Development. In doing so, the project proponent or applicant must provide written documentation to demonstrate the applicability of the Checklist; and provide substantial evidence that demonstrates how the proposed project would implement each applicable Checklist requirement described herein.
- If a question in the Checklist is deemed not applicable (N/A) to a project, written documentation and substantial evidence supporting that conclusion shall be provided to the satisfaction of the Director of Community Development.
- Development projects requiring discretionary review that cannot demonstrate consistency with the CAP using this Checklist shall prepare a separate, project-level GHG analysis as part of the CEQA document prepared for the project and may be required to prepare an Environment Impact Report ("EIR").
- The specific applicable requirements outlined in the Checklist shall be required as conditions of project approval for CAP compliant projects with streamlined GHG emissions assessments.

¹ In this context, a project is any action that meets the definition of a "Project" in Section 15378 of the State CEQA Guidelines.

Application Information

Contact Information

Project No. and Name: 503 West Mission Commercial Project

Property Address and APN: 503 W. Mission Avenue, Escondido, CA 92025

Applicant Name and Co.: Nilesh Patel

Contact Phone: (858) 442-2495 Contact Email: _____

Was a consultant retained to complete this checklist? Yes No
 If Yes, complete the following:

Consultant Name: Katie Wilson Contact Phone: (714) 795-3100 x202

Company Name: Ganddini Group Contact Email: katie@ganddini.com

Project Information

1. What is the size of the project site (acres)? 1.5 acres
2. Identify all applicable proposed land uses:
 - Residential (indicate # of single-family dwelling units): _____
 - Residential (indicate # of multi-family dwelling units): _____
 - Commercial (indicate total square footage): 6,110 SF
 - Industrial (indicate total square footage): _____
 - Other (describe use and indicate size): _____

3. Provide a description of the project proposed. This description should match the basic project description used for the CEQA document. The description may be attached to the Checklist if there are space constraints.

The proposed project involves demolition of the existing restaurant and redevelopment of the site with three new commercial/food service uses totaling 6,110 square feet, including one 1,460 square foot coffee shop with drive through window, one 2,300 square foot fast food restaurant with drive through window (pick up only – no drive through ordering), and one 2,350 square foot fast food restaurant with drive through window. Project site access is proposed via one existing driveway at Mission Avenue and one new driveway at Centre City Parkway.

Step 1: Land Use Consistency

The first step in this section evaluates a project's GHG emissions consistent with the City's *Guidance to Demonstrating Consistency with the City of Escondido Climate Action Plan for Discretionary Projects Subject to CEQA* (Guidance Document). A summary of the process for determining the required level of analysis for these projects is provided in Figure 1, "Require Level of Analysis Flowchart," provided in the Guidance Document.

The CAP contains in-City GHG projections for 2020, 2030, and 2035. Measures to reduce GHG emissions for projects with land use consistent with the General Plan are found in the CAP. If any one of these calculations is erroneous, the CAP fails to accomplish this purpose. Therefore, the first step of this checklist is to determine if the project's anticipated growth would have been included in the CAP's business-as-usual land use and activity projections. This section allows the City to determine a project's consistency with the land use assumptions used in the CAP. Projects that are consistent with the General Plan may incorporate by reference the CAP's cumulative GHG analysis.

For projects that are determined to be consistent with CAP projections, the next step is to identify if the project would be estimated to emit fewer than 500 metric tons of carbon dioxide equivalent (MTCO_{2e}) annually. If found to emit fewer than 500 MTCO_{2e}, a project would not contribute considerably to cumulative climate change impacts as stated in the City's Guidance Document. Therefore, these projects would be considered consistent with the CAP.

Additionally, at the time of this CAP Checklist preparation, the City is in the process of developing screening thresholds for vehicle miles traveled (VMT) consistent with State legislation. . Thus, projects that would be below both the GHG and VMT screening level thresholds would not be anticipated to result in cumulative GHG impacts and conflict with the City's ability to achieve its GHG reduction targets.

Step 1: Land Use Consistency		
Checklist Item (Check the appropriate box and provide an explanation and supporting documentation for your answer)	Yes	No
<p>1. Is the proposed project consistent with the City’s existing General Plan land use designation?</p> <p>If “Yes”, proceed to Question 3 of Step 1. <i>See analysis in report for project’s consistency with the General Plan</i></p> <p>If “No”, proceed to Question 2 of Step 1.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>2. If the proposed project is not consistent with the existing General Plan land use designation, does the project include a General Plan Amendment that would generate GHG emissions equal to or less than estimated emissions generated under the existing designation?</p> <p>If “Yes”, provide estimated project emissions under both existing and proposed designation(s) for comparison and proceed to Question 3 of Step 1.</p> <p>If “No”, the project’s GHG impact is potentially significant, and a GHG analysis must be prepared in accordance with the City’s Guidance Document and applicable CEQA Guidelines. The project would not be eligible for GHG streamlining provisions of the CAP. The project must incorporate each of the measures identified in Step 2 to mitigate cumulative GHG emissions impacts unless a measure is determined to be infeasible in accordance with CEQA Guidelines Section 15091. Proceed and complete a project specific GHG analysis, and Step 2 of the Checklist.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>3. The size and type of projects listed below would emit fewer than 500 MTCO_{2e} per year. Based on this threshold, does the proposed project exceed these characteristics?</p> <ul style="list-style-type: none"> ▪ <u>Single-Family Housing</u>²: 36 dwelling units ▪ <u>Multi-Family Housing</u>: 55 dwelling units ▪ <u>Office</u>: 43,000 square feet ▪ <u>Commercial Space</u>: 20,000 square feet ▪ <u>Regional Shopping Center</u>: 18,000 square feet ▪ <u>Restaurant</u>: 6,500 square feet ▪ <u>General Light Industrial</u>: 58,000 square feet ▪ <u>Warehouse (Unrefrigerated)</u>: 233,000 square feet ▪ <u>Warehouse (Refrigerated)</u>: 62,000 square feet ▪ <u>Mixed-Use</u>: See the City’s Guidance Document³ for methods to estimate mixed-use development thresholds ▪ <u>Other</u>: For project types not listed in this section the need for GHG analysis and mitigation will be made on a project-specific basis, considering the 500 MTCO_{2e} per year screening threshold. <i>Project proposes a total of 6,110 SF of restaurant uses. See report for more detail.</i> <p>If “Yes”, proceed to Step 2.</p> <p>If “No”, in accordance with the City’s CAP screening criteria, the project’s GHG impact is less than significant and is not subject to the measures of the CAP.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

² Single-Family Housing developments are defined as single-family detached homes on individual lots. All other residential use types (e.g. single-family attached, condo/townhouse, apartment) should be considered “Multi-Family Housing” for the purposes of comparing a project to the screening thresholds.

³ *Guidance for Demonstrating Consistency with the City of Escondido Climate Action Plan for discretionary Projects Subject to CEQA*, available at https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/ClimateActionPlan/Final/Escondido_ThresholdsMemoFinal3.10.2021.pdf

Step 2: CAP Measures Consistency

The second step of CAP consistency review is to evaluate a project’s consistency with the applicable strategies and measures of the CAP. Each Checklist item is associated with specific GHG reduction measures in the City’s CAP.

Step 2: CAP Measures Consistency			
Checklist Item (Check the appropriate box and provide an explanation for your answer. Please use additional sheets if necessary)	Yes	No	N/A
Parking and Transportation Demand Management			
<p>1. Electric Vehicle Charging Stations (Measures T-1.3 & T-1.4)</p> <p><u>All Projects:</u> Will the project install electric vehicle charging stations (EVCSs) consistent with the following requirements:</p> <ul style="list-style-type: none"> • Comply with the most recently updated version of the California Building Energy Efficiency Standards (Title 24, Part 6)? • For multi-family residential and commercial (i.e. office and retail commercial) projects, will the project install electric vehicle charging stations at a minimum of 10 percent of the total parking spaces provided? • For single-family residential projects, will the project install at least one EVCS in each new single-family home? <p>Check “N/A” only if the project is not proposing any parking; or if the project does not propose any construction activities.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Please substantiate how the project satisfies question 1:			
<p>2. Pedestrian Infrastructure (Measure T-3.2)</p> <p><u>All Projects:</u> If the following conditions are met, would the project pay its fair-share contribution or fully install pedestrian infrastructure improvements?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The project frontage is located along a roadway for which pedestrian improvements are identified in the City’s Street Design Manual, Pedestrian Master Plan, Trail Master Plan, or Safe Routes to School and Transit Plans; <input type="checkbox"/> The proposed project would include site design amenities with pedestrian access points from the existing, identified roadway; and, <input type="checkbox"/> The identified pedestrian improvements have not yet been installed. Or if they have been installed, the infrastructure is being redesigned, upgraded, and/or maintained to promote universal access. <p>Check “N/A” only if the project does not propose any construction activities.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Please substantiate how the project satisfies question 2:

3. Transportation Demand Management and Transit (Measures T-3.4 and T-3.6)

Single-Family Projects: N/A

Multi-Family Residential Projects: If the project is located in the Downtown Specific Plan area and is proposing a reduction in over 15 percent of the required amount of on-site vehicular parking, would the project implement the following policies or programs?

- The project would provide six-month transit passes to new residents;
- The project establishes strong connections in site design to promote convenient access and transit orientation; and,
- The project would monitor transit use by new residents for the first six months of project operations.

Non-Residential Projects: If the project is located within the Downtown Specific Plan, South Centre City Specific Plan, or East Valley Parkway Specific Plan, will the project implement Transportation Demand Management (TDM) program that includes, at a minimum:

- “End-of-trip” facilities for bicycle commuters (e.g. bicycle parking spaces, showers, lockers);
- Discounted monthly North County Transit District (NCTD) passes or transit subsidies;
- Informational material (provided to each employee or tenant) for carpool and vanpool ride-matching services; and
- Parking cash-out policies.

Check “N/A” only if the project is a single-family residential project; if the project is multi-family or non-residential but not located within the aforementioned specific plans; or if the project does not propose any construction activities..

	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Please substantiate how the project satisfies question 3:

<p>4. Bicycle Infrastructure (Measure T-3.5)</p> <p><u>All Projects:</u> If the following conditions are met, would the project pay its fair-share contribution to bicycle infrastructure improvements?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Intersection or roadway improvements are proposed as part of the project; and <input type="checkbox"/> The City’s Bicycle Master Plan for identifies bicycle infrastructure improvements at any intersection(s) or roadway segment(s) that would be impacted as part of the project. <p>Check “N/A” if the intersection or roadway improvements required are fully in place to the satisfaction of the Director of Community Development; or if the project does not propose any construction activities.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Please substantiate how the project satisfies question 4:

Building Energy Use and Efficiency

<p>5. Alternatively Fueled Water Heaters (Measures E-4.1 and E-4.2)</p> <p><u>Residential Projects:</u> If the project is a new single-family or multi-family residential development, will the project install electric heat pump water heaters?</p> <p><u>Non-Residential Projects:</u> If the project is non-residential, will the project install electric heat pump water heaters?</p> <p>Check “N/A” only if the project is non-residential and has an alteration and addition with a permit value of \$200,000 or less; or if the project does not propose any construction activities.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Please substantiate how the project satisfies question 5:

<p>6. Electric Cooking Appliances (Measure E-4.2)</p> <p><u>Single-Family Residential Projects:</u> N/A</p> <p><u>Multi-Family Residential Projects:</u> If the project is a new multi-family residential development, will the project install only electric cooking appliances?</p> <p><u>Non-Residential Projects:</u> N/A</p> <p>Check "N/A" only if the project is a single-family residential or non-residential project, or if the project does not propose any construction activities.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Please substantiate how the project satisfies question 6:

<p>7. Zero Net Energy (Measure E-5.2)</p> <p><u>Residential Projects:</u> N/A</p> <p><u>Commercial Projects:</u> If the project is a new commercial retail or office development, would the project achieve zero net energy (i.e. the total amount of energy used on-site is equal to the amount of renewable energy created on-site) and comply with the most recently updated California Building Energy Efficiency Standards (Title 24, Part 6)?</p> <p>Check "N/A" only if the project is a residential or project, or if the project does not propose any construction activities.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Please substantiate how the project satisfies question 7:

Landscaping and Land Conservation

8. Landscape Water Consumption (Measure W-6.2)

Single-Family Residential Projects: If the project is proposing a single-family or townhome model home development, would the project:

- Fully equip all model homes with greywater systems and rain barrels (or other rainwater capture systems); and,
- Offer greywater systems and rain barrels (or other rainwater capture systems) as an add-on option for new homes.

Non-Residential Projects: N/A

Check "N/A" if the project is not a single-family or townhome model home development; or if the project does not propose any construction activities.

Please substantiate how the project satisfies question 8:

9. Tree Planting (Measure C-9.1)

All Projects: Would the project plant trees consistent with the following requirements?

- Would the project plant a minimum of one tree for every four new parking spaces and/or demonstrate 50% canopy coverage in parking areas?

Residential Projects: In addition to the planting requirements above for all projects, would the project be consistent with the following requirement?

- Would the project plant a minimum of one tree per dwelling unit or pay an in-lieu fee?

Check "N/A" only if the project is not proposing any landscaping; or if the City's landscape ordinance would not apply to the project.

Please substantiate how the project satisfies question 9:

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Air District

Region: San Diego County APCD

Calendar Year: 2024

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Energy Consumption	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	Total VMT	Total VMT	Miles Per Gallon	Vehicle Class
San Diego County APCD	2024	HHDT	Aggregate	Aggregate	Gasoline	8.191687392	163.8992813	0	0.135558299	135.5582988	332093.3955	492.454592	1934574.872	5.83	HHDT
San Diego County APCD	2024	HHDT	Aggregate	Aggregate	Diesel	14731.68364	220550.9135	0	317.7018708	317701.8708	332093.3955	1859684.668	1934574.872	5.83	HHDT
San Diego County APCD	2024	HHDT	Aggregate	Aggregate	Electricity	45.31523961	621.5857161	8983.105391	0	0	0	4872.602649	1934574.872	5.83	HHDT
San Diego County APCD	2024	HHDT	Aggregate	Aggregate	Natural Gas	1074.442881	6690.792697	0	14.2559664	14255.9664	332093.3955	69525.14659	1934574.872	5.83	HHDT
San Diego County APCD	2024	LDA	Aggregate	Aggregate	Gasoline	1175418.459	5461506.034	0	1662.787767	1662787.767	1695205.087	46842847.47	51672446.94	30.48	LDA
San Diego County APCD	2024	LDA	Aggregate	Aggregate	Diesel	5631.047063	23871.34141	0	4.31999021	4319.999021	1695205.087	172212.5896	51672446.94	30.48	LDA
San Diego County APCD	2024	LDA	Aggregate	Aggregate	Electricity	63266.94036	315006.529	1198824.717	0	0	0	3105099.584	51672446.94	30.48	LDA
San Diego County APCD	2024	LDA	Aggregate	Aggregate	Plug-in Hybrid	32449.0861	134176.971	236849.6521	28.09732078	28097.32078	1695205.087	1552287.29	51672446.94	30.48	LDA
San Diego County APCD	2024	LDT1	Aggregate	Aggregate	Gasoline	129009.4789	561038.5358	0	191.4651398	191465.1398	191618.635	4429822.548	4448573	23.22	LDT1
San Diego County APCD	2024	LDT1	Aggregate	Aggregate	Diesel	60.94873199	174.1573663	0	0.039474197	39.4741974	191618.635	887.9331638	4448573	23.22	LDT1
San Diego County APCD	2024	LDT1	Aggregate	Aggregate	Electricity	244.5610238	1177.386863	4208.864218	0	0	0	10901.46236	4448573	23.22	LDT1
San Diego County APCD	2024	LDT1	Aggregate	Aggregate	Plug-in Hybrid	133.7236371	552.9472394	1164.418201	0.114021053	114.0210528	191618.635	6961.056324	4448573	23.22	LDT1
San Diego County APCD	2024	LDT2	Aggregate	Aggregate	Gasoline	556633.3557	2594887.434	0	991.40203	991402.03	997723.8918	22430753.47	22829239.43	22.88	LDT2
San Diego County APCD	2024	LDT2	Aggregate	Aggregate	Diesel	2078.608268	9900.088755	0	2.93101705	2931.01705	997723.8918	87677.92127	22829239.43	22.88	LDT2
San Diego County APCD	2024	LDT2	Aggregate	Aggregate	Electricity	2965.092503	15170.82141	43744.46336	0	0	0	113303.3988	22829239.43	22.88	LDT2
San Diego County APCD	2024	LDT2	Aggregate	Aggregate	Plug-in Hybrid	3943.058244	16304.54584	31841.34365	3.390844726	3390.844726	997723.8918	197504.6365	22829239.43	22.88	LDT2
San Diego County APCD	2024	LHDT1	Aggregate	Aggregate	Gasoline	42013.60568	625940.1243	0	172.8674945	172867.4945	247169.8777	1671762.223	2878002.462	11.64	LHDT1
San Diego County APCD	2024	LHDT1	Aggregate	Aggregate	Diesel	30083.46369	378412.1282	0	74.30238324	74302.38324	247169.8777	1194852.754	2878002.462	11.64	LHDT1
San Diego County APCD	2024	LHDT1	Aggregate	Aggregate	Electricity	144.7598655	2022.077924	7409.426327	0	0	0	11387.48492	2878002.462	11.64	LHDT1
San Diego County APCD	2024	LHDT2	Aggregate	Aggregate	Gasoline	5983.018214	89138.05669	0	26.98225132	26982.25132	63225.95693	231444.1973	717485.9131	11.35	LHDT2
San Diego County APCD	2024	LHDT2	Aggregate	Aggregate	Diesel	11684.10547	146971.3483	0	36.24370561	36243.70561	63225.95693	483249.1016	717485.9131	11.35	LHDT2
San Diego County APCD	2024	LHDT2	Aggregate	Aggregate	Electricity	37.4660505	495.9370223	1787.419819	0	0	0	2792.614199	717485.9131	11.35	LHDT2
San Diego County APCD	2024	MCY	Aggregate	Aggregate	Gasoline	70199.56619	140399.1324	0	11.02982364	11029.82364	11029.82364	430235.858	430235.858	39.01	MCY
San Diego County APCD	2024	MDV	Aggregate	Aggregate	Gasoline	333953.2218	1535373.209	0	707.062898	707062.898	719693.5197	13160207.11	13641622.31	18.95	MDV
San Diego County APCD	2024	MDV	Aggregate	Aggregate	Diesel	5837.03882	27174.05573	0	10.45956853	10459.56853	719693.5197	235562.3085	13641622.31	18.95	MDV
San Diego County APCD	2024	MDV	Aggregate	Aggregate	Electricity	3228.869597	16518.07709	47629.13114	0	0	0	123365.1535	13641622.31	18.95	MDV
San Diego County APCD	2024	MDV	Aggregate	Aggregate	Plug-in Hybrid	2430.386414	10049.64782	19343.1337	2.171053211	2171.053211	719693.5197	122487.7345	13641622.31	18.95	MDV
San Diego County APCD	2024	MH	Aggregate	Aggregate	Gasoline	10135.55459	1013.960881	0	21.13678274	21136.78274	25355.08113	93222.28885	132824.1961	5.24	MH
San Diego County APCD	2024	MH	Aggregate	Aggregate	Diesel	4094.619648	409.4619648	0	4.218298391	4218.298391	25355.08113	39601.90723	132824.1961	5.24	MH
San Diego County APCD	2024	MHDT	Aggregate	Aggregate	Gasoline	3473.007275	69487.92956	0	41.45910634	41459.10634	132018.9544	196459.3898	962526.7276	7.29	MHDT
San Diego County APCD	2024	MHDT	Aggregate	Aggregate	Diesel	17479.19095	202508.1165	0	88.58979522	88589.79522	132018.9544	748443.1077	962526.7276	7.29	MHDT
San Diego County APCD	2024	MHDT	Aggregate	Aggregate	Electricity	56.78967375	740.7263793	3700.213972	0	0	0	3311.055182	962526.7276	7.29	MHDT
San Diego County APCD	2024	MHDT	Aggregate	Aggregate	Natural Gas	322.18244	3826.372909	0	1.970052797	1970.052797	132018.9544	14313.17488	962526.7276	7.29	MHDT
San Diego County APCD	2024	OBUS	Aggregate	Aggregate	Gasoline	1164.517152	23299.65917	0	11.88069266	11880.69266	19693.32536	56792.68216	110158.1043	5.59	OBUS
San Diego County APCD	2024	OBUS	Aggregate	Aggregate	Diesel	595.4995039	7617.744619	0	7.009053046	7009.053046	19693.32536	47363.04896	110158.1043	5.59	OBUS
San Diego County APCD	2024	OBUS	Aggregate	Aggregate	Electricity	2.222469648	44.46717273	243.6407097	0	0	0	219.6377739	110158.1043	5.59	OBUS
San Diego County APCD	2024	OBUS	Aggregate	Aggregate	Natural Gas	93.90306301	835.7372608	0	0.803579657	803.5796575	19693.32536	5782.73537	110158.1043	5.59	OBUS
San Diego County APCD	2024	SBUS	Aggregate	Aggregate	Gasoline	272.9945972	1091.978389	0	1.588112369	1588.112369	7261.004003	15743.27221	61754.07177	8.50	SBUS
San Diego County APCD	2024	SBUS	Aggregate	Aggregate	Diesel	2130.750933	30853.27351	0	5.595751568	5595.751568	7261.004003	45339.0525	61754.07177	8.50	SBUS
San Diego County APCD	2024	SBUS	Aggregate	Aggregate	Electricity	7.190218958	91.34139144	224.9767415	0	0	0	213.5607268	61754.07177	8.50	SBUS
San Diego County APCD	2024	SBUS	Aggregate	Aggregate	Natural Gas	17.70253776	256.3327467	0	0.077140066	77.1400658	7261.004003	458.186335	61754.07177	8.50	SBUS
San Diego County APCD	2024	UBUS	Aggregate	Aggregate	Gasoline	135.233433	540.933732	0	1.570833898	1570.833898	22195.45749	13564.69797	126624.3401	5.70	UBUS
San Diego County APCD	2024	UBUS	Aggregate	Aggregate	Electricity	25.45475467	101.8190187	5500.705862	0	0	0	3155.442088	126624.3401	5.70	UBUS
San Diego County APCD	2024	UBUS	Aggregate	Aggregate	Natural Gas	894.3814307	3577.525723	0	20.62462359	20624.62359	22195.45749	109904.2	126624.3401	5.70	UBUS

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Air District

Region: San Diego County APCD

Calendar Year: 2025

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Energy Consumption	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	Total VMT	Total VMT	Miles Per Gallon	Vehicle Class
San Diego County APCD	2025	HHDT	Aggregate	Aggregate	Gasoline	7.033691582	140.7301012	0	0.127142395	127.1423953	330857.5006	477.7265269	1965628.762	5.94	HHDT
San Diego County APCD	2025	HHDT	Aggregate	Aggregate	Diesel	15090.82986	226484.8998	0	315.9430507	315943.0507		1880530.877			
San Diego County APCD	2025	HHDT	Aggregate	Aggregate	Electricity	102.6559953	1358.118339	21173.04359	0	0		11480.72009			
San Diego County APCD	2025	HHDT	Aggregate	Aggregate	Natural Gas	1140.659532	7065.205246	0	14.78730755	14787.30755		73139.4388			
San Diego County APCD	2025	LDA	Aggregate	Aggregate	Gasoline	1163596.254	5402698.045	0	1619.328593	1619328.593	1652860.327	46599752.27	52068883.66	31.50	LDA
San Diego County APCD	2025	LDA	Aggregate	Aggregate	Diesel	5162.279972	21728.71347	0	3.852391775	3852.391775		154640.3509			
San Diego County APCD	2025	LDA	Aggregate	Aggregate	Electricity	71862.9683	356557.5327	1403024.913	0	0		3634002.546			
San Diego County APCD	2025	LDA	Aggregate	Aggregate	Plug-in Hybrid	35220.43208	145636.4867	262596.401	29.67934248	29679.34248		1680488.486			
San Diego County APCD	2025	LDT1	Aggregate	Aggregate	Gasoline	124744.8402	541305.6888	0	182.6902753	182690.2753	182883.7779	4295869.365	4320829.856	23.63	LDT1
San Diego County APCD	2025	LDT1	Aggregate	Aggregate	Diesel	55.09345602	154.4302365	0	0.034897891	34.89789073		785.5598347			
San Diego County APCD	2025	LDT1	Aggregate	Aggregate	Electricity	297.7872042	1445.409003	5483.437801	0	0		14202.76058			
San Diego County APCD	2025	LDT1	Aggregate	Aggregate	Plug-in Hybrid	192.0900699	794.292439	1707.487207	0.158604684	158.6046841		9972.171201			
San Diego County APCD	2025	LDT2	Aggregate	Aggregate	Gasoline	557048.7736	2595042.569	0	973.1802547	973180.2547	979997.3921	22572000.61	23044891.9	23.52	LDT2
San Diego County APCD	2025	LDT2	Aggregate	Aggregate	Diesel	2113.282108	10026.40996	0	2.911661021	2911.661021		88769.84974			
San Diego County APCD	2025	LDT2	Aggregate	Aggregate	Electricity	3968.968637	20224.03865	58165.20614	0	0		150654.8495			
San Diego County APCD	2025	LDT2	Aggregate	Aggregate	Plug-in Hybrid	4694.722502	19412.67755	38497.64337	3.905476369	3905.476369		233466.5831			
San Diego County APCD	2025	LHDT1	Aggregate	Aggregate	Gasoline	41448.06348	617514.3882	0	169.6785024	169678.5024	244161.5599	1670644.364	2902433.135	11.89	LHDT1
San Diego County APCD	2025	LHDT1	Aggregate	Aggregate	Diesel	30080.41385	378373.765	0	74.48305755	74483.05755		120240.55			
San Diego County APCD	2025	LHDT1	Aggregate	Aggregate	Electricity	399.0752686	5579.210824	19080.59775	0	0		29318.22009			
San Diego County APCD	2025	LHDT2	Aggregate	Aggregate	Gasoline	5937.831977	88464.84909	0	26.54097829	26540.97829	63269.83936	231177.6845	732029.5692	11.57	LHDT2
San Diego County APCD	2025	LHDT2	Aggregate	Aggregate	Diesel	11919.52487	149932.628	0	36.72886108	36728.86108		493662.1828			
San Diego County APCD	2025	LHDT2	Aggregate	Aggregate	Electricity	103.0284867	1366.259336	4604.092935	0	0		7189.70188			
San Diego County APCD	2025	MCY	Aggregate	Aggregate	Gasoline	69656.62848	139313.257	0	10.86795731	10867.95731	10867.95731	425156.8058	425156.8058	39.12	MCY
San Diego County APCD	2025	MDV	Aggregate	Aggregate	Gasoline	332056.3528	1526242.735	0	690.8533817	690853.3817	703387.5846	13179760.11	13719278.9	19.50	MDV
San Diego County APCD	2025	MDV	Aggregate	Aggregate	Diesel	5727.051143	26509.81906	0	9.99375868	9993.75868		228362.4913			
San Diego County APCD	2025	MDV	Aggregate	Aggregate	Electricity	4296.125349	21882.65987	62897.49301	0	0		162912.0392			
San Diego County APCD	2025	MDV	Aggregate	Aggregate	Plug-in Hybrid	2943.229581	12170.25432	24127.00101	2.540444272	2540.444272		148244.2547			
San Diego County APCD	2025	MH	Aggregate	Aggregate	Gasoline	9552.961706	955.678289	0	19.98954525	19989.54525	24140.36478	88181.20735	127139.5404	5.27	MH
San Diego County APCD	2025	MH	Aggregate	Aggregate	Diesel	4060.707663	406.0707663	0	4.150819528	4150.819528		38958.33302			
San Diego County APCD	2025	MHDT	Aggregate	Aggregate	Gasoline	3413.785275	68303.01579	0	40.94711107	40947.11107	131529.808	196476.0298	972677.286	7.40	MHDT
San Diego County APCD	2025	MHDT	Aggregate	Aggregate	Diesel	17786.84546	206359.3853	0	88.59393965	88593.93965		752420.1333			
San Diego County APCD	2025	MHDT	Aggregate	Aggregate	Electricity	162.4972231	2102.442811	10323.26594	0	0		9323.889988			
San Diego County APCD	2025	MHDT	Aggregate	Aggregate	Natural Gas	332.0274424	3939.342103	0	1.988757248	1988.757248		14457.2329			
San Diego County APCD	2025	OBUS	Aggregate	Aggregate	Gasoline	1125.440188	22517.80728	0	11.20384251	11203.84251	18970.99522	54073.79901	108026.6773	5.69	OBUS
San Diego County APCD	2025	OBUS	Aggregate	Aggregate	Diesel	616.3950387	7916.939486	0	6.985140897	6985.140897		47739.06253			
San Diego County APCD	2025	OBUS	Aggregate	Aggregate	Electricity	5.45561073	109.1558595	590.2838669	0	0		532.1304253			
San Diego County APCD	2025	OBUS	Aggregate	Aggregate	Natural Gas	95.31022775	848.261027	0	0.782011812	782.0118117		5681.685306			
San Diego County APCD	2025	SBUS	Aggregate	Aggregate	Gasoline	272.4022615	1089.609046	0	1.576317931	1576.317931	7195.301208	15799.40207	61894.19743	8.60	SBUS
San Diego County APCD	2025	SBUS	Aggregate	Aggregate	Diesel	2123.719469	30751.45791	0	5.537353145	5537.353145		45117.86263			
San Diego County APCD	2025	SBUS	Aggregate	Aggregate	Electricity	15.74407402	200.1287897	515.2299047	0	0		489.0855481			
San Diego County APCD	2025	SBUS	Aggregate	Aggregate	Natural Gas	18.98534761	274.9078334	0	0.081630132	81.63013202		487.8471802			
San Diego County APCD	2025	UBUS	Aggregate	Aggregate	Gasoline	139.8797631	559.5190523	0	1.460164559	1460.164559	22624.61847	14033.31187	131004.4936	5.79	UBUS
San Diego County APCD	2025	UBUS	Aggregate	Aggregate	Electricity	31.98417083	127.9366833	6885.463998	0	0		3949.799069			
San Diego County APCD	2025	UBUS	Aggregate	Aggregate	Natural Gas	919.7023559	3678.809423	0	21.16445391	21164.45391		113021.3827			



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