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MEMORANDUM

DATE: December 14, 2023

TO: Jerry Bajwa, The Bajwa Group

FROM: Ronald Brugger, Senior Air Quality Specialist

SUBJECT: Air Quality, Greenhouse Gas Emissions, and Energy Impact Analysis for the Proposed Cajon Pass Commercial Project (LSA Project No. BAJ2101)

INTRODUCTION

This air quality, greenhouse gas (GHG) emissions, and energy impact analysis for the proposed Cajon Pass Commercial Project (project) proposed near the Interstate 15 (I-15) and State Route 138 (SR-138) junction in the County of San Bernardino, has been prepared using methods and assumptions recommended in the Mojave Desert Air Quality Management District's (MDAQMD) *CEQA Air Quality Handbook*. This analysis includes a description of the existing regulatory framework an assessment of project operational air quality emissions and GHG emissions and energy use. Measures to reduce or eliminate significant impacts are identified where appropriate.

PROJECT LOCATION

The proposed project site is located along the Cajon Pass adjacent to I-15, south of the SR-138 Junction in an unincorporated area of the County of San Bernardino. The project site is located in the undeveloped lot south of the existing McDonalds along Wagon Train Road. Figure 1 shows the project location and vicinity (all figures are provided in Attachment A).

PROJECT DESCRIPTION

The proposed project would develop a 24-hour fueling station with a convenience store and a drive-through car wash on an undeveloped 1.42-acre lot. The proposed on-site structures include a 4,900-square foot convenience store, a 67-foot by 84-foot canopy with nine multiple product dispensers (MPD) for fueling up to 18 vehicles, two underground fuel storage tanks located southwest of the canopy, a 22-foot by 44-foot square foot drive through car wash, and eight Tesla electric vehicle charging stations with charging posts and cabinets in the southern corner of the site. The project includes 18 additional auto parking stalls, two of which are designed in accordance with the Americans with Disabilities Act (ADA), a separate loading area for the convenience store, and a trash enclosure facility. The project site would include approximately 14,470 square feet of landscaping that will include trees, shrubs, groundcover, and shrub mass. The tentative construction schedule would begin late 2023 and last approximately 6 months. Figure 2 shows the project's site plan provided in Attachment A.

Sensitive Receptors and Land Uses in the Project Vicinity

Sensitive receptors include residences such as private homes, condominiums, apartments, and living quarters, schools, preschools, daycare centers, in-home daycares, health facilities (e.g., hospitals, long-term care facilities, retirement, and nursing homes), community centers, places of worship, parks (excluding trails*),* prisons, and dormitories. The project site is surrounded by commercial land use types, with nearest sensitive receptor identified as the single-family residence approximately 2.5 miles away located west along SR-138. The areas adjacent to the project site include the following uses:

- **North:** McDonald, Chevron Gas Station, and SR-138.
- **South:** Undeveloped land and I-15.
- **East:** Undeveloped land.
- **West:** I-15.

REGIONAL CLIMATE AND AIR QUALITY

The project site is in unincorporated San Bernardino County, which is part of the Mojave Desert Air Basin (Basin) and is under the jurisdiction of MDAQMD. This Basin is an assemblage of mountain ranges interspersed with long, broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor.

Both the State of California (State) and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants. As detailed in Table A, these pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in size (PM_{10}), particulate matter less than 2.5 microns in size ($PM_{2.5}$), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table B summarizes the most common health and environmental effects for each of the air pollutants for which there is a national and/or California AAQS, as well as for toxic air contaminants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (by the United States Environmental Protection Agency [EPA]), these health effects would not occur unless the standards are exceeded by a large margin or for a prolonged period of time. State AAQS are typically more stringent than federal AAQS. Among the pollutants, O3 and particulate matter ($PM_{2.5}$ and PM_{10}) are considered pollutants with regional effects, while the others have more localized effects (CARB 2022a).

Table A: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
O_3[8]	1-Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10})[9]	24-Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter ($PM_{2.5}$)[9]	24-Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³	15 µg/m³	
CO	1-Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	—	
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
NO_2[10]	1-Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
SO_2[11]	1-Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3-Hour	—		—	0.5 ppm (1,300 µg/m³)	
	24-Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30-Day Average	1.5 µg/m³	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[13]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m³		
Visibility-Reducing Particles[14]	8-Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24-Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24-Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

Source: California Air Resources Board (CARB). 2016. *Ambient Air Quality Standards* (California Air Resources Board [CARB], May 4, 2016). Website: www.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf (accessed May 2023).

[1] California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1- and 24-hour), NO_2, and PM (PM_{10}, $PM_{2.5}$, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. California AAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than for O_3 and PM and those based on the annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current national policies.

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

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

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

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

[7] The reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

[8] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[9] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

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

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

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[12] CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[13] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated as Nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[14] In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
µg/m^3 = micrograms per cubic meter
AAQS = ambient air quality standards
CARB = California Air Resources Board
CO = carbon monoxide
EPA = United States Environmental Protection Agency
mg/m^3 = milligrams per cubic meter
NO_2 = nitrogen dioxide
O_3 = ozone
PM = particulate matter
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ppb = parts per billion
ppm = parts per million
SO_2 = sulfur dioxide

Table B: Summary of Health and Environmental Effects of the Criteria Air Pollutants

Pollutant	Effects on Health and the Environment
Ozone (O_3)	• Respiratory symptoms • Worsening of lung disease leading to premature death • Damage to lung tissue • Crop, forest and ecosystem damage • Damage to a variety of materials, including rubber, plastics, fabrics, paint and metals
$PM_{2.5}$ (particulate matter less than 2.5 microns in aerodynamic diameter)	• Premature death • Hospitalization for worsening of cardiovascular disease • Hospitalization for respiratory disease • Asthma-related emergency room visits • Increased symptoms, increased inhaler usage
PM_{10} (particulate matter less than 10 microns in aerodynamic diameter)	• Premature death & hospitalization, primarily for worsening of respiratory disease • Reduced visibility and material soiling
Nitrogen Oxides (NO_X)	• Lung irritation • Enhanced allergic responses
Carbon Monoxide (CO)	• Chest pain in patients with heart disease • Headache • Light-headedness • Reduced mental alertness
Sulfur Oxides (SO_X)	• Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits
Lead	• Impaired mental functioning in children • Learning disabilities in children • Brain and kidney damage
Hydrogen Sulfide (H_2S)	• Nuisance odor (rotten egg smell) • At high concentrations: headache & breathing difficulties
Sulfate	• Same as $PM_{2.5}$, particularly worsening of asthma and other lung diseases • Reduces visibility
Vinyl Chloride	• Central nervous system effects, such as dizziness, drowsiness & headaches • Long-term exposure: liver damage & liver cancer
Visibility Reducing Particles	• Reduced airport safety, scenic enjoyment, road safety, and discourages tourism
Toxic Air Contaminants About 200 chemicals have been listed as toxic air contaminants	• Cancer • Reproductive and developmental effects • Neurological effects

Source: Common Air Pollutants (CARB 2022a).
CARB = California Air Resources Board

The California Clean Air Act (CCAA) provides MDAQMD and other air districts with the authority to manage transportation activities at indirect sources. Indirect sources of pollution include any facility, building, structure, or installation, or combination thereof, that attracts or generates mobile-source emissions of any pollutant. In addition, area-source emissions that are generated when minor sources collectively emit a substantial amount of pollution are also managed by the local air districts. Examples of this would be the motor vehicles at an intersection, at a mall, and on highways. MDAQMD also regulates stationary sources of pollution throughout its jurisdictional area. The California Air Resources Board (CARB) regulates direct emissions from motor vehicles.

Climate/Meteorology

Air quality in the planning area is affected not only by various emission sources (e.g., mobile and industry) but also by atmospheric conditions (e.g., wind speed, wind direction, temperature, and rainfall). As described above, the project site is in the Mojave Desert Air Basin, which is an assemblage of mountain ranges interspersed with long, broad valleys that often contain dry lakes. Prevailing winds in the Basin are out of the west and southwest. These prevailing winds are due to the proximity of the Basin to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the Basin. The Basin is separated from the Southern California coastal and central California valley regions by mountains (highest elevation is approximately 10,000 feet), whose passes form the main channels for these air masses. The Mojave Desert is bordered on the southwest by the San Bernardino Mountains, separated from the San Gabriel Mountains by the Cajon Pass (4,200 feet). A lesser pass lies between the San Bernardino Mountains and the Little San Bernardino Mountains in the Morongo Valley.

During the summer, the Basin is generally influenced by a Pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The Basin is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The Basin averages between 3 and 7 inches of precipitation per year (from 16 to 30 days with at least 0.01 inch of precipitation). The Basin is classified as a dry hot desert climate, with portions classified as dry very hot desert, to indicate that at least 3 months have maximum average temperatures over 100.4^{o}F.

Snow is common above 5,000 feet in elevation, resulting in moderate snowpack and limited spring runoff. Below 5,000 feet, any precipitation normally occurs as rainfall. Pacific storm fronts normally move into the area from the west, driven by prevailing winds from the west and southwest. During late summer, moist high-pressure systems from the Pacific Ocean collide with rising heated air from desert areas, resulting in brief, high intensity thunderstorms that can cause high winds and localized flash flooding. During the fall and winter months, strong, dry Santa Ana winds from the northeast can cause rapid temperature variations of significant magnitude.

Air Pollution Constituents and Attainment Status

CARB coordinates and oversees both State and federal air pollution control programs in the State. CARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the EPA and local air districts. CARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by CARB and the EPA to classify air basins as Attainment, Nonattainment, Nonattainment-Transitional, or Unclassified, based on air quality data for the most recent 3 calendar years compared with the AAQS.

Attainment areas may be the following:

- **Attainment/Unclassified** ("Unclassifiable" in some lists). These basins have never violated the air quality standard of interest or do not have enough monitoring data to establish Attainment or Nonattainment status.

- **Attainment-Maintenance** (national ambient air quality standards [NAAQS] only). These basins violated a NAAQS that is currently in use (were Nonattainment) in or after 1990, but now attain the standard and are officially redesignated as Attainment by the EPA with a Maintenance State Implementation Plan (SIP).

- **Attainment** (usually only for California ambient air quality standards [CAAQS], but sometimes for NAAQS). These basins have adequate monitoring data to show attainment, have never been Nonattainment, or, for NAAQS, have completed the official Maintenance period.

Nonattainment areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards. Table C lists the attainment status for the criteria pollutants in the Basin.

Table C: Attainment Status of Criteria Pollutants in the Mojave Desert Air Basin

Pollutant	State	Federal
O_3	Nonattainment	Nonattainment[1]
PM_{10}	Nonattainment	Nonattainment[2]
$PM_{2.5}$	Nonattainment[1]	Attainment/Unclassified
CO	Attainment	Attainment/Unclassified
NO_2	Attainment	Attainment/Unclassified
SO_2	Attainment	Attainment/Unclassified
Lead[1]	Attainment	Attainment/Unclassified
All Others	Attainment/Unclassified	N/A

Source: Mojave Desert Air Quality Management District (n.d.-b).

[1] Only the southwest corner of the desert portion of San Bernardino County is Nonattainment

[2] Only the San Bernardino County portion is Nonattainment

CO = carbon monoxide

N/A = not applicable

NO_2 = nitrogen dioxide

O_3 = ozone

$PM_{2.5}$ = particulate matter less than 2.5 microns in size

PM_{10} = particulate matter less than 10 microns in size

SO_2 = sulfur dioxide

Local Air Quality

The MDAQMD, together with the CARB, maintains ambient air quality monitoring stations. The air quality monitoring station that monitors air pollutant data closest to the site is the Victorville Monitoring Station at 14306 Park Avenue, Victorville, California, approximately 16 miles northeast of the project site. The air quality trends from this station are used to represent the ambient air quality in the project area. The ambient air quality data in Table D show that $PM_{2.5}$, and NO_2 levels are below the applicable State and federal standards. However, annual average concentrations of PM_{10} and O_3 concentrations frequently exceed their respective standards.

Table D: Air Quality Concentrations in the Project Vicinity

Pollutant	Standard	2019	2020	2021
O_3				
Maximum 1-hour concentration (ppm)		0.104	0.112	0.112
No. of days exceeded	State: 0.09 ppm	3	4	8
Max 8-hour concentration (ppm)		0.081	0.094	0.098
No. of days exceeded	State: 0.07 ppm	29	35	34
	Federal: 0.07 ppm	29	35	34
PM_{10}				
Maximum 24-hour concentration (µg/m^3)		170	261	591
No. of days exceeded	State: 50 µg/m^3	ND	ND	ND
	Federal: 150 µg/m^3	2	2	1
Annual avg. concentration (µg/m^3)		27.0	34.1	33.8
Exceeds Standard?	State: 20 µg/m^3	Yes	Yes	Yes
$PM_{2.5}$				
Maximum 24-hour concentration (µg/m^3)		20	48.7	87.1
No. of days exceeded	Federal: 35 µg/m^3	0	4	1
Annual avg. concentration (µg/m^3)		7.0	10.4	10.3
Exceeds Standard?	State: 12 µg/m^3	No	No	No
	Federal: 12 µg/m^3	No	No	No
NO_2				
Maximum 1-hour concentration (ppb):		56.0	59.4	56.6
No. of days exceeded	State: 180 ppb	0	0	0
	Federal: 100 ppb	0	0	0
Annual avg. concentration (ppb):		11	12	12
Exceeds standard?	State: 30 ppb	No	No	No
	Federal: 53 ppb	No	No	No

Source: CARB's iADAM (CARB n.d.-b).
Note: Pollutant concentration data from the Victorville Monitoring Station at 14306 Park Avenue, Victorville, CA.

µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
CO = carbon monoxide
ND = No data available
NO_2 = nitrogen dioxide
O_3 = ozone
$PM_{2.5}$ = particulate matter smaller than 2.5 microns in size
PM_{10} = particulate matter smaller than 10 microns in size
ppb = parts per billion
ppm = parts per million

DESCRIPTION OF GREENHOUSE GASES AND SOURCES

Higher temperatures from excessive concentrations of GHGs in the atmosphere can result in increased mean temperatures and are conducive to air pollution formation and could worsen air quality in California. While climate change may increase the concentration of ground-level ozone, the magnitude of the effect and, therefore, its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would exacerbate air quality. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State (California Department of Public Health 2014). However, if higher temperatures are accompanied by wetter, rather than drier, conditions, the rains would temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus reducing the pollution associated with wildfires. GHGs are present in the atmosphere naturally, are released by natural

sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change are:[1]

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which can cause global warming. Although GHGs produced by human activities include naturally occurring GHGs (e.g., CO_2, CH_4, and N_2O), some gases (e.g., HFCs, PFCs, and SF_6) are completely new to the atmosphere. Water vapor is a GHG, but it is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes (e.g., oceanic evaporation). For the purposes of this air quality study, the term "GHGs" will refer collectively to the six gases identified in the bulleted list provided above.

These GHGs vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. For example, N_2O is from 265 to 310 times more potent at contributing to global warming than CO_2. GHG emissions are typically measured in terms of metric tons of CO_2 equivalents (MT CO_2e). Table E identifies the GWP for the three GHGs analyzed in this report. The EPA and the CARB use GWP values from the 2007 Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4). The IPCC has published the 2021 IPCC Sixth Assessment Report (AR6) with updated GWP values.

Table E: Global Warming Potential for Selected Greenhouse Gases

Pollutant	AR4 Values	AR6 Values
Carbon Dioxide (CO_2)	1 (by definition)	1 (by definition)
Methane (CH_4)	25	29.8 ± 11
Nitrous Oxide (N_2O)	298	273 ± 30

Sources: *California's 2022 Climate Change Scoping Plan* (CARB 2022a), IPCC Sixth Assessment Report (2021).
[1] The EPA and CARB use global warming potential values from the IPCC Fourth Assessment Report (2007).
AR4 = 2007 IPCC Fourth Assessment Report
AR6 = 2021 IPCC Sixth Assessment Report
CARB = California Air Resources Board
EPA = United States Environmental Protection Agency
IPCC = Intergovernmental Panel on Climate Change

[1] The greenhouse gases listed are consistent with the definition in Assembly Bill 32 (Government Code 38505), as discussed later in this section.

ENERGY BACKGROUND

Energy usage is typically associated with electricity and natural gas consumption and fuel usage, as described below.

Electricity

Electricity is a manmade resource. The production of electricity requires the consumption or conversion of energy resources (including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources) into energy. Electricity is used for a variety of purposes (e.g., lighting, heating, cooling, and refrigeration, and for operating appliances, computers, electronics, machinery, and public transportation systems). The project site is within the service territory of Southern California Edison (SCE). SCE provides electricity to more than 15 million people in a 50,000-square-mile area of Central, coastal, and Southern California (SCE n.d.). According to the California Energy Commission (CEC), total electricity consumption in the SCE service area in 2022 was 85,870 gigawatt-hours (GWh), and total electricity consumption in San Bernardino County in 2022 was 16,629.6 GWh (16,629,614,195 kilowatt-hours [kWh]) (CEC n.d.-a).

Natural Gas

Natural gas is a non-renewable fossil fuel. Fossil fuels form when layers of decomposing plant and animal matter are exposed to intense heat and pressure under the surface of the Earth over millions of years. Natural gas is a combustible mixture of hydrocarbon compounds (primarily methane) used as a fuel source. Natural gas is found in naturally occurring reservoirs in deep underground rock formations. Natural gas is used for a variety of uses (e.g., heating buildings, generating electricity, and powering appliances such as stoves, washing machines and dryers, gas fireplaces, and gas grills).

The Southern California Gas Company (SoCalGas) is the natural gas service provider for the project sites. SoCalGas provides natural gas to approximately 21.8 million people in a 24,000-square-mile service area throughout Central and Southern California, from Visalia to the Mexican border (SoCalGas n.d.). According to the CEC, total natural gas consumption in the SoCalGas service area in 2022 was 5,026 million therms, and total natural gas consumption in San Bernardino County in 2022 was 562.1 million therms (562,123,065 therms) (CEC n.d.-b).

Vehicle Fuels

Petroleum is also a non-renewable fossil fuel. Petroleum is a thick, flammable, yellow-to-black mixture of gaseous, liquid, and solid hydrocarbons that occurs naturally beneath the earth's surface. Petroleum is primarily recovered by oil drilling. It is refined into a large number of consumer products, primarily fuel oil, gasoline, and diesel. The average fuel economy for light-duty vehicles (automobiles, pickups, vans, and SUVs) in the United States has steadily increased from about 13.1 miles per gallon (mpg) in 1975 to 25.3 mpg in 2021 (EPA 2021). The average fuel economy for heavy-duty trucks in the United States has also steadily increased, from 5.7 mpg in 2013 to a projected 8.0 mpg in 2021 (CEC 2015).

Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline consumed by light-duty cars, pickup trucks, and sport utility vehicles. According to the most recent data available, total gasoline consumption in California was 289,918 thousand barrels, or 1,464.7 trillion British thermal units (BTU) in 2020. Of the total gasoline consumption, 273,289 thousand barrels or

1,380.7 trillion BTU were consumed for transportation (CEC n.d.-c). Based on fuel consumption obtained from CARB's California Emissions Factor Model, Version 2021 (EMFAC2021), approximately 325.0 million gallons of diesel and approximately 907.3 million gallons of gasoline will be consumed from vehicle trips in San Bernardino County in 2023.

REGULATORY FRAMEWORK

Federal Regulations

Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established the NAAQS. The NAAQS were established for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations to protect public health.

The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization responsible for ensuring compliance with the requirements of the CAA for the Basin.

On September 15, 2011, the EPA and the United States Department of Transportation (USDOT) issued final rule for the first national standards to improve fuel efficiency of medium- and heavy-duty trucks and buses, model years 2014 to 2018. For combination tractors, the agencies proposed engine and vehicle standards that would achieve up to a 20 percent reduction from the model year 2014 in fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies proposed separate gasoline and diesel truck standards, which would achieve up to a 10 percent reduction from the model year 2014 for gasoline vehicles and a 15 percent reduction for diesel vehicles (12 and 17 percent, respectively, if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10 percent reduction from model year 2014 in fuel consumption. On October 25, 2016, the EPA and USDOT issued Phase 2 of the national standards to improve fuel efficiency standards for medium- and heavy-duty trucks and buses for model years 2021 to 2027 to achieve vehicle fuel savings as high as 25 percent, depending on the vehicle category.

On August 2, 2018, the previous Administration released a notice of proposed rulemaking, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule) to amend the Corporate Average Fuel Economy (CAFE) and GHG emission standards established in 2012 for model years 2021 through 2026. The SAFE Vehicle Rule would decrease fuel economy and would withdraw the California Waiver for the California Advanced Clean Car program, Zero Emissions Vehicle mandate, and GHG emission standards for model years 2021 through 2026.

The current administration withdrew portions of the SAFE Rule, concluding that the SAFE Rule overstepped the agency's legal authority and finalized updated CAFE Standards for model years 2024 through 2026. The final rule establishes standards that would require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024 and 2025, and 10 percent annually for model years 2026. The agency projects the final standards will save consumers nearly $1,400 in total fuel expenses over the lifetimes of vehicles produced in these model years and avoid the consumption of about 234 billion gallons of gas between model years 2030 to 2050. The

National Highway Transportation Safety Administration also projects that the standards will cut GHGs from the atmosphere, reduce air pollution, and reduce the country's dependence on oil.

State Agencies and Regulations

California Air Resources Board

In 1967, the State Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (i.e., the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board) to establish the CARB. Since its formation, CARB has worked with the public, the business sector, and local governments to find solutions to the State's air pollution problems. California adopted the California Clean Air Act in 1988. CARB administers the California ambient air quality standards for the 10 air pollutants designated in the California Clean Air Act. These 10 State air pollutants are the 6 criteria pollutants designated by the federal CAA as well as 4 others: visibility-reducing particulates, H_2S, sulfates, and vinyl chloride.

California Energy Commission

The CEC is the State's primary energy policy and planning agency, and it plays a critical role in creating a clean and modern energy system. SB 1389 (Chapter 568, Statutes of 2002) requires the CEC to prepare an Integrated Energy Policy Report biennially at a minimum. The report should include a description of the international energy market prospects and an evaluation of its export promotion activities.

AB 2076 (passed in 2000, Shelley, Chapter 936, Statutes of 2000) directs the CARB and the CEC to develop and adopt recommendations for the Governor and the Legislature on a strategy to reduce California's dependence on petroleum.

In 2002, the Legislature passed SB 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels for the California Energy Policy Report. 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 in implementing incentive programs for zero emission vehicles and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

The CEC adopted the 2022 Integrated Energy Policy Report Update on February 28, 2023. The 2022 Integrated Energy Policy Report Update provides the results of the CEC's assessment of a variety of issues, including ensuring that the State has sufficient, reliable, and safe energy infrastructure to meet current and future energy demands; monitoring publicly owned utilities' progress toward achieving 10-year energy efficiency targets; defining and including zero-net-energy goals in State building standards; overcoming challenges to increased use of geothermal heat pump/ground loop technologies and procurement of biomethane; using demand response to meet California's energy needs and integrate renewable technologies; removing barriers to bioenergy development; planning for California's electricity infrastructure needs given the potential retirement of power plants; estimating new generation costs for utility-scale renewable and fossil-fueled generation; planning for new or upgraded transmission infrastructure; monitoring utilities' progress in implementing past recommendations related to nuclear power plants; tracking natural gas market trends; implementing the Alternative and Renewable Fuel and Vehicle Technology Program; addressing the

vulnerability of California's energy supply and demand infrastructure to the effects of climate change; and planning for potential electricity system needs in 2030 (CEC 2023).

Regional Air Quality Planning Framework

SCAG is a council of governments for Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. SCAG is a regional planning agency and a forum for regional issues relating to transportation, the economy and community development, and the environment. Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality.

On September 3, 2020, the Regional Council of SCAG adopted Connect SoCal, also known as the *2020–2045 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability, and High Quality of Life* (a.k.a., 2020–2045 RTP/SCS) (SCAG 2020). The 2020–2045 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. Connect SoCal embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses, and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura.

Mojave Desert Air Quality Management District

MDAQMD is the agency principally responsible for comprehensive air pollution control in the Basin. To that end, MDAQMD, a regional agency, works directly with SCAG, county transportation commissions, and local governments, and cooperates actively with State and federal government agencies. MDAQMD develops air quality-related rules and regulations, establishes permitting requirements, inspects emissions sources, and provides regulatory enforcement through such measures as educational programs or fines, when necessary.

San Bernardino County, including Apple Valley, is in non-attainment for O_3 and particulate matter. To meet the requirements for basins that are in nonattainment, the MDAQMD has established attainment plans for O_3, PM_{10}, and $PM_{2.5}$.

Regional Air Quality Management Plan

The MDAQMD is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain CAAQS and NAAQS in the Mojave Desert Air Basin. All areas designated as non-attainment under the CCAA are required to prepare plans showing how they will meet the air quality standards. The MDAQMD prepared Air Quality Attainment Plans (AQAP) to address CAA and CCAA requirements by identifying policies and control measures. The SCAG assists by preparing the transportation portion of an AQAP. The applicable AQAP is the 2017 MDAQMD Federal 75 ppb (parts per billion) Ozone Attainment Plan (Western Mojave Desert Nonattainment Area) (MDAQMD 2017).

The MDAQMD Rules & Regulations website (MDAQMD n.d.-a) lists the current attainment plans for the region. Consistency with the applicable AQAP would be achieved if the project complies with all applicable MDAQMD rules and regulations and is consistent with the growth forecasts in the applicable plan. Consistency with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast.

The MDAQMD provides the *California Environmental Quality Act (CEQA) And Federal Conformity Guidelines* (MDAQMD 2020a) to facilitate projects compliance with CEQA. MDAQMD also recommends using approved models to calculate emissions from land use projects, such as the California Emissions Estimator Model (CalEEMod). These recommendations were followed in the preparation of this analysis.

The following MDAQMD rules and regulations would apply to the proposed project:

- MDAQMD Rule 403 (MDAQMD 2020b) requires projects to incorporate fugitive dust control measures.
- MDAQMD Rule 1113 (MDAQMD 2020c) limits the volatile organic compound (VOC) content of architectural coatings.

Greenhouse Gas Emissions

This section describes regulations related to global climate change at the federal, State, and local level.

Federal Regulations

The United States has historically had a voluntary approach to reducing GHG emissions; however, on April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO_2 emissions under the CAA. The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and that the EPA did not have a valid rationale for not regulating GHGs. In December 2009, the EPA issued an endangerment finding for GHGs under the CAA.

On December 7, 2009, the EPA Administrator signed a final action under the CAA, finding that six GHGs (i.e., CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare and that the combined emissions from motor vehicles cause and contribute to global climate change.

State Agencies

The California Global Warming Solutions Act of 2006, widely known as Assembly Bill (AB) 32, requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB was directed to set a statewide GHG emissions limit and set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

In 2016, the State Legislature passed, and Governor Jerry Brown signed, Senate Bill (SB) 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 Executive Order (EO) B-30-15. SB 32 builds on AB 32 and keeps California on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an IPCC analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million (ppm) CO_2e and reduce the likelihood of catastrophic impacts from climate change. The companion bill to SB 32 (i.e., AB 197) provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions.

CARB adopted the 2022 Scoping Plan Update on December 15, 2022. The 2022 Scoping Plan Update assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

SB 97 and *State CEQA Guidelines*. In August 2007, the State Legislature adopted SB 97, requiring the Office of Planning and Research (OPR) to prepare and transmit new CEQA guidelines for the mitigation of GHG emissions or the effects of GHG emissions to the California Natural Resources Agency. The OPR submitted its proposed guidelines to the Secretary for Natural Resources on April 13, 2009, and the *State CEQA Guidelines* amendments became effective on March 18, 2010.

The *State CEQA Guidelines* amendments do not specify a threshold of significance for GHG emissions or prescribe assessment methodologies or specific mitigation measures. Instead, the amendments encourage lead agencies to consider many factors in performing a CEQA analysis but rely on the lead agencies in making their own significance determinations based upon substantial evidence. The *State CEQA Guidelines* amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

The *State CEQA Guidelines* amendments require a lead agency to make a good-faith effort based on the extent possible on scientific and factual data to describe, calculate, or estimate the amount of GHG emissions resulting from a project. The *State CEQA Guidelines* amendments give discretion to the lead agency whether to: (1) use a model or methodology to quantify GHG emissions resulting from a project and which model or methodology to use; and/or (2) rely on a qualitative analysis or performance-based standards. The California Natural Resources Agency is required to periodically update the guidelines to incorporate new information or criteria established by the CARB pursuant to AB 32.

California Green Building Standards. The California Green Building Standards Code, which is Part 11 of the California Code of Regulations, is commonly referred to as the CALGreen Code. The first edition of the CALGreen Code was released in 2008 and contained only voluntary standards. The 2022 CALGreen Code was updated in 2022, became effective on January 1, 2023, and applies to non-residential and residential developments. The CALGreen Code contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The CALGreen Code provides for design options that allow the designer to determine how best to achieve compliance for a given site or building condition. The CALGreen Code also requires building commissioning, which is a process for the verification that all building systems (e.g., heating and cooling equipment and lighting systems) function at their maximum efficiency.

Local Regulations

San Bernardino County Regional Greenhouse Gas Reduction Plan Update. As a response to the 2006 AB 32 law, a project partnership led by the San Bernardino Associated Governments (SANBAG), the predecessor agency to the San Bernardino County Transportation Authority (SBCTA), has compiled an inventory of GHG emissions and developed reduction measures that was adopted

by the 21 Partnership Cities of San Bernardino County. The San Bernardino County *Regional Greenhouse Gas Reduction Plan Update* (GHGRP) (SBCOG 2021) was last updated in September 2021. Together with the San Bernardino County GHGRP, the County of San Bernardino adopted its *Greenhouse Gas Emissions Development Review Processes* (DRP) (County of San Bernardino 2015) in 2016. The DRP procedures are designed to be followed to evaluate project-level GHG impacts and determine significance for CEQA purposes. All projects in San Bernardino County need to comply with the following GHG performance standards identified in the DRP:

> **GHG – Construction Performance Standards.** The project developer shall submit for review and obtain approval from City Planning of a signed letter agreeing to include as a condition of all construction contracts/subcontracts requirements to reduce GHG emissions and submitting documentation of compliance. The developer/construction contractors shall do the following:
>
> - Implement the approved Coating Restriction Plans.
> - Select construction equipment based on low GHG emissions factors and high-energy efficiency. All diesel/gasoline-powered construction equipment shall be replaced, where possible, with equivalent electric or CNG equipment.
> - Grading contractor shall implement the following when possible:
>   - Training operators to use equipment more efficiently.
>   - Identifying the proper size equipment for a task can also provide fuel savings and associated reductions in GHG emissions
>   - Replacing older, less fuel-efficient equipment with newer models
>   - Use GPS for grading to maximize efficiency
> - Grading plans shall include the following statements:
>   - "All construction equipment engines shall be properly tuned and maintained in accordance with the manufacturers specifications prior to arriving on site and throughout construction duration."
>   - "All construction equipment (including electric generators) shall be shut off by work crews when not in use and shall not idle for more than 5 minutes."
> - Schedule construction traffic ingress/egress to not interfere with peak-hour traffic and to minimize traffic obstructions. Queuing of trucks on and off site shall be firmly discouraged and not scheduled. A flagperson shall be retained to maintain efficient traffic flow and safety adjacent to existing roadways.
> - Recycle and reuse construction and demolition waste (e.g., soil, vegetation, concrete, lumber, metal, and cardboard) per County Solid Waste procedures.

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

GHG – Operational Performance Standards. The developer shall implement the following as greenhouse gas (GHG) mitigation during the operation of the approved project:

- **Waste Stream Reduction.** The "developer" shall provide to all tenants and project employees County-approved informational materials about methods and the need to reduce the solid waste stream and listing available recycling services.

- **Vehicle Trip Reduction.** The "developer" shall provide to all tenants and project employees County-approved informational materials about the need to reduce vehicle trips and the program elements this project is implementing. Such elements may include: participation in established ride-sharing programs, creating a new ride-share employee vanpool, designating preferred parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles with benches in waiting areas, and/or providing a web site or message board for coordinating rides.

- **Provide Educational Materials.** The "developer" shall provide to all tenants and staff education materials and other publicity about reducing waste and available recycling services. The education and publicity materials/program shall be submitted to County Planning for review and approval. The "developer" shall also provide to all tenants and require that the tenants shall display in their stores current transit route information for the project area in a visible and convenient location for employees and customers.

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

THRESHOLDS OF SIGNIFICANCE

Certain air districts (e.g., MDAQMD) have created guidelines and requirements to conduct air quality analyses. MDAQMD's current guidelines, the *California Environmental Quality Act (CEQA) And Federal Conformity Guidelines* (MDAQMD 2020a), were followed in this assessment of air quality and climate impacts for the proposed project.

Based on the *State CEQA Guidelines*, Appendix G (Public Resources Code Sections 15000–15387), a project would normally be considered to have a significant effect on air quality if the project would violate any CAAQS, contribute substantially to an existing air quality violation, expose sensitive receptors to substantial pollutants concentrations, or conflict with adopted environmental plans and goals of the community in which it is located.

Air Quality Thresholds

The MDAQMD has established daily emissions thresholds for construction and operation of a proposed project in the Basin. The emissions thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants.

Regional Emissions Thresholds

Table F lists the CEQA significance thresholds for construction and operational emissions established for the Basin.

Table F: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Emissions Thresholds (lbs/day)					
	VOCs	**NO_X**	**CO**	**SO_X**	PM_{10}	$PM_{2.5}$
Construction	137	137	548	137	82	65
Operations	137	137	548	137	82	65

Source: MDAQMD Air Quality Significance Thresholds (MDAQMD 2020a)

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
MDAQMD = Mojave Desert Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

Projects in the Basin with construction- or operation-related emissions that exceed any of their respective emissions thresholds would be considered significant under MDAQMD guidelines. These thresholds, which MDAQMD developed, and which apply throughout the Basin, apply as both project and cumulative thresholds. If a project exceeds these standards, it is considered to have a project-specific and cumulative impact.

Local Microscale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project site are above or below State and federal CO standards. Because ambient CO levels are below the standards throughout the Basin, a project would be considered to have a significant CO impact if project emissions result in an exceedance of one or more of the 1-hour or 8-hour standards. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20 ppm
- California State 8-hour CO standard of 9 ppm

Greenhouse Gas Emissions Threshold

State CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Appendix G of the *State CEQA Guidelines* includes significance thresholds for GHG emissions. A project would normally have a significant effect on the environment if it would do either of the following:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Currently, there is no statewide GHG emissions threshold that has been used to determine the potential GHG emissions impacts of a project. Threshold methodology and thresholds are still being developed and revised by air districts in California.

This analysis will consider whether the project is compliant with the SCBTA's *Greenhouse Gas Emissions Reduction Plan Update* (SBCTA 2021) and GHG Development Review Process (DRP) (County of San Bernardino 2015). All projects need to apply the GHG performance standards identified in the DRP and comply with State requirements. For projects exceeding the review standard of 3,000 MT CO_2e per year, the use of screening tables or a project-specific technical analysis to quantify and mitigate project emissions is required. If the GHG emissions from the project are less than 3,000 MT CO_2e per year and the project would apply GHG performance standards and State requirements, project-level and cumulative GHG emissions would be less than significant.

Energy

While no quantitative thresholds related to energy are included in the *State CEQA Guidelines*, the *State CEQA Guidelines* indicate that a project would normally have a significant adverse energy impact if the project would do either of the following:

- Result in a 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.

For the purposes of this analysis, impacts to energy resources will be considered significant if the project would result in the wasteful, inefficient, or unnecessary consumption of fuel or energy; and/or conversely, if the project would not incorporate renewable energy or energy efficiency measures into building design, equipment use, transportation, or other project features.

IMPACTS AND MITIGATION MEASURES

This section evaluates the impacts related to air quality, GHG emissions, and energy use associated with the proposed project. Mitigation measures are identified where necessary to reduce impacts to a less than significant level.

Air Quality Impacts

Air pollutant emissions associated with the project would occur over the short term from construction activities and over the long term from project-related vehicular trips and due to energy consumption (e.g., electricity and natural gas usage) by the proposed land uses.

Consistency with Applicable Air Quality Plans

An air quality plan describes the pollution control strategies to be undertaken by a city or county in a region classified as nonattainment to meet the requirements of the federal CAA. The main purpose of the plan is to bring an area into compliance with the requirements of federal and State ambient air quality standards. The applicable air quality plan is the MDAQMD AQAP - *2017 MDAQMD Federal 75 ppb (parts per billion) Ozone Attainment Plan (Western Mojave Desert Nonattainment Area)* (MDAQMD 2017). For development projects, such as the proposed project, consistency can be determined if growth forecasts in the plan are consistent with land uses associated with the proposed development.

The AQAP emissions projections were predicated on the aggregation of individual emissions predictions from jurisdictions throughout the MDAQMD. The Project site has a San Bernardino County General Plan Land Use Designation of General Commercial and has a zoning designation of CG-General Commercial-Sign Control Property. The Project includes development of a convenience store, gasoline station, and drive-through car wash, all consistent with the land use designation and zoning, upon which the AQAP emissions projections were predicated. Therefore, the project would not affect the regional emissions inventory or conflict with strategies in the AQAP.

Criteria Pollutant Analysis

The Mojave Desert Air Basin is designated as nonattainment for O_3 and PM_{10} for federal standards and nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards. The MDAQMD's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, MDAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Construction Emissions. Construction activities produce combustion emissions from various sources (e.g., utility engines, tenant improvements, and motor vehicles transporting the construction crew). Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change.

The construction analysis includes estimating the construction equipment that would be used during each construction activity, the hours of use for that construction equipment, the quantities of earth and debris to be moved, and the on-road vehicle trips (e.g., worker, soil-hauling, and vendor trips). The proposed earthwork for the project assumes the site would be balanced (no import or export needed).

Since the details of the construction equipment and operations are not known at the time of this analysis, to be conservative, CalEEMod defaults are assumed for the construction activities, off-road equipment, and on-road construction fleet mix and trip lengths. The tentative construction schedule

would begin late 2023 and last approximately 6 months. Table G lists the tentative project construction schedule.

Table G: Tentative Project Construction Schedule

Phase Name	Phase Start Date	Phase End Date	Number of Days
Site Preparation	10/3/2023	10/9/2023	5
Grading	10/10/2023	10/30/2023	15
Building Construction	10/31/2023	3/18/2024	100
Architectural Coating	12/21/2023	3/30/2024	72
Paving	3/19/2024	4/17/2024	22

Source: Estimated by LSA Associates, Inc. from the project information provided (May 2023).

The most recent version of CalEEMod (Version 2022.1) was used to develop the construction equipment inventory and calculate the construction emissions. Table H lists the estimated construction equipment that would be used during project construction as estimated by CalEEMod default values. The CalEEMod output is included as Attachment B.

Table H: Diesel Construction Equipment Used by Construction Phase

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
Site Preparation	Graders	1	8	148	0.41
	Rubber Tired Dozers	1	8	367	0.40
	Tractors/Loaders/Backhoes	1	7	84	0.37
Grading	Graders	1	8	148	0.41
	Rubber Tired Dozers	1	8	367	0.40
	Tractors/Loaders/Backhoes	2	7	84	0.37
Building Construction	Cranes	1	6	367	0.29
	Forklifts	1	6	82	0.20
	Tractors/Loaders/Backhoes	1	8	84	0.37
	Generator Sets	1	8	14	0.74
	Welders	3	8	46	0.45
Paving	Cement and Mortar Mixers	1	6	10	0.56
	Pavers	1	7	81	0.42
	Rollers	1	8	36	0.38
	Tractors/Loaders/Backhoes	1	8	84	0.37
Architectural Coating	Air Compressors	1	6	37	0.48

Source: Compiled by LSA using CalEEMod defaults (May 2023).
CalEEMod = California Emissions Estimator Model

The emissions rates shown in Table I are from the CalEEMod output tables and are the combination of the on- and off-site emissions and the greater of summer and winter emissions. No exceedances of any criteria pollutants are expected. Standard measures are documented in the CalEEMod output in Attachment B.

Table I: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions (lbs/day)							
	VOCs	NO_X	CO	SO_X	PM_{10}		$PM_{2.5}$	
					Exhaust	Fugitive	Exhaust	Fugitive
Site Preparation	2	15	14	<1	<1	2	<1	<1
Grading	2	18	17	<1	<1	2	<1	<1
Building Construction	1	10	10	<1	<1	<1	<1	<1
Architectural Coating	<1	<1	1	<1	<1	<1	<1	<1
Paving	<1	5	8	<1	<1	<1	<1	<1
Peak Daily	**2**	**18**	**17**	**<1**	**3**		**1**	
MDAQMD Threshold	**137**	**137**	**548**	**137**	**82**		**65**	
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA (May 2023).
Note: It was assumed that the architectural coatings were applied during the building construction and paving phases.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
MDAQMD = Mojave Desert Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

Fugitive Dust. Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction. The construction calculations prepared for this project assumed that dust control measures (watering a minimum of two times daily consistent with MDAQMD Rule 403) would be employed to reduce emissions of fugitive dust during site grading. Furthermore, all construction would need to comply with MDAQMD Rule 403 regarding the emission of fugitive dust. Table I lists total construction emissions (i.e., fugitive dust emissions and construction equipment exhausts) that have incorporated the following Rule 403 measures that would be implemented to significantly reduce PM10 emissions from construction:

- Water active sites at least twice daily (locations where grading is to occur shall be thoroughly watered prior to earthmoving).
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 2 feet (0.6 meter) of freeboard (vertical space between the top of the load and the top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour (mph) or less.

These Rule 403 measures were incorporated in the CalEEMod analysis.

Architectural Coatings. Architectural coatings contain VOCs that are part of the O_3 precursors. Based on the proposed project, it is estimated that application of the architectural coatings for the proposed peak construction day would result in a peak of less than 2 pounds per day (lbs/day) of VOCs (<1 lbs/day from architectural coating application and 1 lbs/day from concurrent building construction). Therefore, VOC emissions from architectural-coating applications would not exceed the MDAQMD VOC threshold of 137 lbs/day.***Odors from Construction Activities.*** Heavy-duty equipment in the project area during construction would emit odors, primarily from the equipment exhaust. However, the construction-produced odors would cease to occur after individual construction is completed. No other sources of objectionable odors have been identified for the

proposed project, and no mitigation measures are required.MDAQMD Rule 402 regarding nuisances 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 proposed uses are not anticipated to emit any objectionable odors. Therefore, objectionable odors posing a health risk to potential on-site and existing off-site uses would not occur as a result of the proposed project.

Construction Emissions Conclusions. Table I shows that daily regional construction emissions would not exceed the daily thresholds of any criteria pollutant emissions thresholds established by MDAQMD; thus, during construction, there would be no air quality impacts. **Operational Emissions.** Long-term air pollutant emission impacts are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity and natural gas), and area sources (e.g., architectural coatings and the use of landscape maintenance equipment) related to the proposed project.

The proposed project would generate emissions from daily operations. The project's *Transportation Impact Study* (LSA 2023) determined that the convenience store with gas station and car wash would generate 4,628 vehicle trips daily. However, of that total, 2,441 would be pass-by trips and 1,053 would be diverted trips. Thus, the net project trip generation would be 1,134 daily trips.

The eight Tesla EV charging stations would generate 480 daily trips; however, all of these would be diverted trips. Additionally, all of these vehicles would be zero-emissions electric vehicles.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emissions processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy source emissions result from activities in buildings for which electricity and natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems (e.g., heating and air conditioning, lighting) and plug-in electronics (e.g., computers). Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources (e.g., renewable energy) producing fewer emissions than conventional sources.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the project would include emissions from the use of landscaping equipment and the use of consumer products.

Emission estimates for operation of the project were calculated using CalEEMod and are shown in Table J. The peak daily emissions associated with project operations are identified in Table J for VOCs, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$.

Table J: Project Operation Emissions (lbs/day)

Source Category	VOCs	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area Source Emissions	<1	0	0	0	0	0
Energy Source Emissions	<1	<1	<1	<1	<1	<1
Mobile Source Emissions	8	14	119	<1	9	2
Total Project Emissions	**9**	**15**	**120**	**<1**	**10**	**3**
MDAQMD Significance Threshold	**137**	**137**	**548**	**137**	**82**	**65**
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (May 2023).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
MDAQMD = Mojave Desert Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

The results shown in Table J indicate the project would not exceed the significance criteria for daily VOCs, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ emissions; therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS. CalEEMod results listing the details of the emissions results are attached (Attachment B).

Objectionable Odors. MDAQMD addresses odor criteria within the CEQA Handbook. The MDAQMD has not established a rule or standard regarding odor emissions, rather, the MDAQMD has a nuisance rule: "Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact."

There are not any sensitive receptors near the project site. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Health Risk on Nearby Sensitive Receptors. Sensitive receptors are defined as people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential dwelling units. As described above, the project site is surrounded by commercial land use types, with nearest sensitive receptor identified as the single-family residence approximately 2.5 miles away located west along SR-138. At this distance, the project would not result in a health risk impact to any sensitive receptors during project construction or operation.

Greenhouse Gas Emission Impacts

The following sections describe the proposed project's construction- and operation-related GHG impacts and consistency with applicable GHG reduction plans.

Generation of Greenhouse Gas Emissions

Construction and operation of the proposed project would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the project's operation.

Overall, the following activities associated with the proposed project could directly or indirectly contribute to the generation of GHG emissions.

Construction Activities. Construction activities would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As shown in Table K, the project construction emissions would total 125 MT CO_2e. (See the CalEEMod output in Attachment B for details.)

Table K: Construction Greenhouse Gas Emissions

Construction Phase	Total Emissions per Phase (MT)			Total Emissions per Phase (MT CO_2e)
	CO_2	CH_4	N_2O	
Site Preparation	5	<1	<1	5
Grading	18	<1	<1	18
Building Construction	84	<1	<1	85
Architectural Coating	5	<1	<1	5
Paving	12	<1	<1	12
Total Emissions for the Entire Construction Process				**125**
Total Construction Emissions Amortized over 30 Years				**4**

Source: Compiled by LSA (May 2023).
CH_4 = methane
CO_2 = carbon dioxide
MT = metric tons
MT CO_2e = metric tons of carbon dioxide equivalent
N_2O = nitrous oxide

Operational GHG Emissions. Long-term GHG emissions are typically generated from mobile sources (e.g., cars, trucks, and buses), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions would include project-generated car and truck trips to and from the project site. Waste source emissions generated by the proposed project include energy generated by landfilling and other methods of disposal related to transporting and managing project-generated waste.

GHG emissions were estimated using CalEEMod. Table L shows the calculated GHG emissions for the proposed project. As shown in Table L, the project would generate 4,392 MT CO_2e per year.

Table L: Long-Term Operational Greenhouse Gas Emissions

Source	Pollutant Emissions per Year (MT)					
	Bio-CO_2	**Nbio-CO_2**	**Total CO_2**	**CH_4**	**N_2O**	**CO_2e**
Construction Emissions Amortized over 30 Years						9
Operational Emissions						
Area	0	<1	<1	<1	<1	<1
Energy	0	61	61	<1	<1	61
Mobile	0	4,254	4,254	<1	<1	4,322
Water	<1	3	3	<1	<1	3
Waste	2	<1	2	<1	<1	6
Refrigerant	-	-	-	-	-	8
Total Project Emissions	**3**	**192**	**194**	**<1**	**<1**	4,392
San Bernardino County Review Threshold						**3,000**
Emissions Exceed Threshold?						**Yes**

Source: Compiled by LSA (May 2023).
Bio-CO_2 = biologically generated carbon dioxide
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT = metric tons
N_2O = nitrous oxide
Nbio-CO_2 = non-biologically generated carbon dioxide

For projects exceeding 3,000 $MTCO_2e$ per year of GHG emissions, the County provides Screening Tables as a tool to assist with calculating GHG reduction measures and the determination of a significance finding. Projects that garner a 100 or greater points would not require quantification of project specific GHG emissions. The point system was devised to ensure to Project compliance with the reduction measures in the GHG Plan such that the GHG emissions from new development, when considered together with those existing development, support the County's reductions in GHG emissions beyond 2020. Consistent with the CEQA Guidelines, such projects are consistent with the Plan and therefore will be determined to have a less than significant individual and cumulative impact for GHG emissions. Table M shows that the project would achieve 115 points. Therefore, the project would not result in the generation of GHG emissions that would have a significant impact on the environment.

Table M: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Reduction Measure Energy: Exceed Energy Efficiency Standards in New Commercial Units			
Building Envelope			
Insulation	• 2019 Title 24 Requirements (walls R-16; roof/attic R-32) • Modestly Enhanced Insulation (walls R-15, roof/attic R-38) • Enhanced Insulation (rigid wall insulation R-13, roof/attic R-38) • Greatly Enhanced Insulation (spray foam insulated walls R-18 or higher, roof/attic R-38 or higher)	0 points 9 points 11 points 12 points	9 points
Windows	• 2019 Title 24 Windows (0.57 U-factor, 0.4 SHGC) • Modestly Enhanced Window Insulation (0.4 U-factor, 0.32 SHGC) • Enhanced Window Insulation (0.32 U-factor, 0.25 SHGC) • Greatly Enhanced Window Insulation (0.28 or less U-factor, 0.22 or less SHGC)	0 points 4 points 5 points 7 points	4 points
Cool Roofs	• Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance) • Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)	8 points 10 points	
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage. • Air barrier applied to exterior walls, caulking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent) • Blower Door HERS Verified Envelope Leakage or equivalent	7 points 6 points	
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls. • Modest Thermal Mass (10% of floor or 10% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials) • Enhanced Thermal Mass (20% of floor or 20% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials) • Enhanced Thermal Mass (80% of floor or 80% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials)	2 points 4 points 14 points	
Indoor Space Efficiencies			
Heating/Cooling Distribution System	• Modest Duct insulation (R-6 required) • Enhanced Duct Insulation (R-8) • Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)	0 points 6 points 8 points	
Space Heating/ Cooling Equipment	• 2019 Title 24 Minimum HVAC Efficiency (SEER 13/75% AFUE or 7.7 HSPF) • Improved Efficiency HVAC (SEER 14/78% AFUE or 8 HSPF) • High Efficiency HVAC (SEER 15/80% AFUE or 8.5 HSPF)	0 points 4 points 5 points	

Table M: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
	• Very High Efficiency HVAC (SEER 16/82% AFUE or 9 HSPF)	7 points	
Commercial Heat Recovery Systems	Heat recovery strategies employed with commercial laundry, cooking equipment, and other commercial heat sources for reuse in HVAC air intake or other appropriate heat recovery technology. Point values for these types of systems will be determined based upon design and engineering data documenting the energy savings.	TBD	
Water Heaters	• 2019 Title 24 Minimum Efficiency (0.57 Energy Factor) • Improved Efficiency Water Heater (0.675 Energy Factor) • High Efficiency Water Heater (0.72 Energy Factor) • Very High Efficiency Water Heater (0.92 Energy Factor) • Solar Pre-heat System (0.2 Net Solar Fraction) • Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)	0 points 8 points 10 points 11 points 2 points 5 points	8 points
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours. • All peripheral rooms within building have at least one window or skylight • All rooms within building have daylight (through use of windows, solar tubes, skylights, etc.) • All rooms daylighted	0 points 1 point 1 point	1 point
Artificial Lighting	• Efficient Lights (25% of in-unit fixtures considered high efficiency. High efficiency is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40 watt) • High Efficiency Lights (50% of in-unit fixtures are high efficiency) • Very High Efficiency Lights (100% of in-unit fixtures are high efficiency	5 points 7 points 8 points	8 points
Appliances	• Energy Star Commercial Refrigerator (new) • Energy Star Commercial Dishwasher (new) • Energy Star Commercial Clothes Washer (new)	2 points 2 points 2 points	4 points
Miscellaneous Commercial Building Efficiencies			
Building Placement	North/south alignment of building or other building placement such that the orientation of the buildings optimizes conditions for natural heating, cooling, and lighting.	4 points	
Shading	At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on June 21st.	6 points	
Other	This allows innovation by the applicant to provide design features that increase the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	
Existing Commercial Buildings Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing commercial buildings to further the point value of their project. Retrofitting existing commercial buildings within the County is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case-by-case basis and shall have the approval from the County of San Bernardino Planning Department. The decision to allow	TBD	

Table M: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
	applicants to participate in this program will be evaluated based upon, but not limited to the following: • Will the energy efficiency retrofit project benefit low income or disadvantaged communities? • Does the energy efficiency retrofit project provide co-benefits important to the County? • Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.		
Reduction Measure Energy-3: All Electric Buildings			
All-Electric Buildings	All electric buildings reduce GHG emissions, as the grid electricity they use is generated using less carbon over time. Grid electricity in California will be 60 percent renewable energy by 2030 and 100 percent renewable energy by 2040.	15 points	
Reduction Measure Energy-7: Clean Energy			
Commercial/Industrial Renewable Energy Generation			
Photovoltaic	Solar Photovoltaic panels installed on commercial buildings or in collective arrangements within a commercial development such that the total power provided augments: • 30 percent of the power needs of the project • 40 percent of the power needs of the project • 50 percent of the power needs of the project • 60 percent of the power needs of the project • 70 percent of the power needs of the project • 80 percent of the power needs of the project • 90 percent of the power needs of the project • 100 percent of the power needs of the project	8 points 12 points 16 points 19 points 23 points 26 points 30 points 34 points	
Wind Turbines	Some areas of the County lend themselves to wind turbine applications. Analysis of the areas capability to support wind turbines should be evaluated prior to choosing this feature. Wind turbines as part of the commercial development such that the total power provided augments: • 30 percent of the power needs of the project • 40 percent of the power needs of the project • 50 percent of the power needs of the project • 60 percent of the power needs of the project • 70 percent of the power needs of the project • 80 percent of the power needs of the project • 90 percent of the power needs of the project • 100 percent of the power needs of the project	8 points 12 points 16 points 19 points 23 points 26 points 30 points 34 points	
Off-site Renewable Energy Project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing residential or existing commercial/industrial. These off-site renewable energy retrofit project proposals will be determined on a case-by-case basis accompanied by a detailed plan documenting the quantity of renewable energy the proposal will generate. Point values will be based upon the energy generated by the proposal.	TBD	
Other Renewable	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from	TBD	

Table M: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Energy Generation	renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed would be decided based upon engineering data documenting the ability to generate electricity.		
Reduction Measure Water 1-3: Exceed Water Efficiency Standards			
Commercial Irrigation and Landscaping			
Water Efficient Landscaping	• Eliminate conventional turf from landscaping • Only moderate water using plants • Only low water using plants • Only California Native landscape that requires supplemental irrigation	no or only 0 point 2 points 3 points 5 points	2 points
Water Efficient Irrigation Systems	• Low precipitation spray heads< 0.75"/hr or drip irrigation • Weather based irrigation control systems combined with drip irrigation (demonstrate 20% reduced water use)	1 point 3 points	3 points
Storm Water Reuse Systems	Innovative on-site storm water collection, filtration, and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	
Commercial Potable Water			
Showers	Water Efficient Showerheads (2.0 gpm)	2 points	
Toilets	• Water Efficient Toilets/Urinals (1.5 gpm) • Waterless Urinals (note that commercial buildings having both waterless urinals and high efficiency toilets will have a combined point value of 6 points)	3 points 3 points	6 points
Faucets	Water Efficient faucets (1.28 gpm)	2 points	2 points
Commercial Dishwashers	Water Efficient dishwashers (20% water savings)	2 points	2 points
Commercial Laundry Washers	• Water Efficient laundry (15% water savings) • High Efficiency laundry equipment that captures and reuses rinse water (30% water savings)	2 points 4 points	
Commercial Water Operations Program	Establish an operational program to reduce water loss from pools, water features, etc., by covering pools, adjusting fountain operational hours, and using water treatment to reduce draw down and replacement of water. Point values for these types of plans will be determined based upon design and engineering data documenting the water savings.	TBD	
Increase Commercial/Industrial Reclaimed Water Use			
Recycled Water	Graywater (purple pipe) irrigation system on site	5 points	
Reduction Measure On Road: Alternative Transportation Options			
Mixed-Use Development			
Mixed-Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed-use projects will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.	TBD	
Local Retail Near	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The	TBD	

Table M: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
Residential (Commercial only Projects)	point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled.		
Preferential Parking			
Parking	• Provide reserved preferential parking spaces for car-share, carpool, and ultra-low or zero emission vehicles. • Provide larger parking spaces that can accommodate vans used for ride-sharing programs and reserve them for vanpools and include adequate passenger waiting/loading areas.	1 point 1 point	
Signal Synchronization and Intelligent Traffic Systems			
Signal Improvements	Techniques for improving traffic flow include: traffic signal coordination to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds. • Synchronize signals along arterials used by project. • Connect signals along arterials to existing ITS.	1 point/signal 3 points/signal	
Increase Public Transit			
Public Transit	The point value of a project's ability to increase public transit use will be determined based upon a Transportation Impact Analysis (TIA) demonstrating decreased use of private vehicles and increased use of public transportation. Increased transit accessibility (1–15 points)	TBD	
Reduction Measure: Install Electric Vehicle Chargers			
Worker and Customer Based Electric Vehicle Chargers	Installation of Electric Vehicle (EV) Chargers for passenger EVs: Level 2 240-volt AC Fast Chargers Level 3 480-volt DC Rapid Chargers	 5 points/charger 8 points/charger	64 points
Electric Commercial Truck Chargers	Installation of electric chargers for medium duty and heavy-duty trucks: Level 1 AC Chargers for EV Medium Duty Trucks Level 1 AC Chargers for EV Class 8 (Heavy Duty) Trucks Level 2 AC Chargers for EV Medium Duty Trucks Level 2 AC Chargers for EV Class 8 (Heavy Duty) Trucks Level 3 DC Fast Chargers for EV Class 8 (Heavy Duty) Trucks	 3 points/charger 5 points/charger 8 points/charger 12 points/charger 16 points/charger	
Reduction Measure: Adopt and Implement a Bicycle Master Plan to Expand Bike Routes around the County			
Sidewalks	• Provide sidewalks on both sides of the street (required) • Provide pedestrian linkage between commercial and residential land uses within 1 mile	0 points 3 points	
Bicycle Paths	• Provide bicycle paths within project boundaries • Provide bicycle path linkages between commercial and other land uses • Provide bicycle path linkages between commercial and transit	1 point 2 points 5 points	
Reduction Measure: Reduce Waste to Landfills			
Recycling	County initiated recycling program diverting 80% of waste requires coordination with commercial development to realize this goal. The	2 points	2 points

Table M: Screening Table for Implementing GHG Performance Standards for Commercial Development and Public Facilities

Feature	Description	Assigned Point Values	Project Points
	following recycling features will help the County fulfill this goal: • Provide separated recycling bins within each commercial building/floor and provide large external recycling collection bins at central location for collection truck pick-up		
	• Provide commercial/industrial recycling programs that fulfills an onsite goal of 80% diversion of solid waste • Recycle construction waste	5 points 4 points	
Other GHG Reduction Feature Implementation			
Other GHG Emissions Reduction Features	This allows innovation by the applicant to provide commercial design features that the GHG emissions from construction and/or operation of the project not provided in the table. Note that engineering data will be required documenting the GHG reduction amount and point values given based upon emission reductions calculations using approved models, methods, and protocols.	TBD	
Total Points Earned by Commercial/Industrial Project:			115 points

Source: County of San Bernardino Greenhouse Gas Emissions Development Review Processes and Project Plans

Consistency with Greenhouse Gas Reduction Plans

Because the project achieves more than the County's Screening Table 100 point threshold, would apply the San Bernardino County's *Greenhouse Gas Emissions Development Review Processes* performance standards (County of San Bernardino 2015), and would adhere to State requirements, project-level and cumulative GHG emissions would be less than significant.

Consistency with the Scoping Plan

The following discussion evaluates the proposed project according to the goals of the 2022 Scoping Plan, EO B-30-15, SB 32, and AB 197.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan (the 2022 Scoping Plan [CARB 2022a]), to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on AB 32 and keeps the State on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32 (i.e., AB 197) provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to provide easier public access to air emissions data that are collected by the CARB was posted in December 2016.

In addition, the 2022 Scoping Plan assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term

climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

The 2022 Scoping Plan focuses on building clean energy production and distribution infrastructure for a carbon-neutral future, including transitioning existing energy production and transmission infrastructure to produce zero-carbon electricity and hydrogen, and utilizing biogas resulting from wildfire management or landfill and dairy operations, among other substitutes. The 2022 Scoping Plan states that in almost all sectors, electrification will play an important role. The 2022 Scoping Plan evaluates clean energy and technology options and the transition away from fossil fuels, including adding four times the solar and wind capacity by 2045 and about 1,700 times the amount of current hydrogen supply. As discussed in the 2022 Scoping Plan, EO N-79-20 requires that all new passenger vehicles sold in California will be zero-emission by 2035, and all other fleets will have transitioned to zero-emission as fully possible by 2045, which will reduce the percentage of fossil fuel combustion vehicles.

Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts (including new technologies and new policy and implementation mechanisms), and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As discussed above, the proposed project would comply with the CALGreen Code regarding energy conservation and green building standards. Therefore, the proposed project would comply with applicable energy measures.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, the project would comply with the CALGreen Code, which includes a variety of different measures, including reduction of wastewater and water use. In addition, the proposed project would be required to comply with the California Model Water Efficient Landscape Ordinance. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to develop regional GHG emissions reduction targets for passenger vehicles. Specific regional emission targets for transportation emissions would not directly apply to the proposed project. The second phase of the Pavley standards will reduce GHG emissions from new cars by 34 percent from 2016 levels by 2025, resulting in a 3 percent decrease in average vehicle emissions for all vehicles by 2020. Fossil-fuel-powered vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program (CARB 2012) and a percentage of the vehicles would be zero-emissions. Therefore, the proposed project would not conflict with the identified transportation and motor vehicle measures.

Energy

The proposed project would increase the demand for electricity, natural gas, and gasoline when compared to the existing condition of the site. The discussion and analysis provided below is based on the data included in the CalEEMod output, which is included as Attachment B.

Construction-Period Energy Use

The anticipated construction schedule assumes that the proposed project would be built over approximately 6 months. The proposed project would require site preparation, grading, building construction, paving, and architectural coating during construction.

Construction of the proposed project would require energy for the manufacture and transportation of building materials and for preparation of the site for grading activities and building construction. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities.

Construction activities are not anticipated to result in an inefficient use of energy because gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the proposed project. Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Therefore, construction energy impacts would be less than significant, and no mitigation would be required.

Operational Energy Use

Energy use includes both direct and indirect sources of emissions. Direct sources of emissions include on-site natural gas usage for heating, while indirect sources include electricity generated by off-site power plants. Natural gas use in CalEEMod is measured in units of a thousand British thermal units (kBTU) per year; however, this analysis converts the results to natural gas in units of therms. Electricity use in CalEEMod is measured in kWh per year.

CalEEMod divides building electricity and natural gas use into uses that are subject to Title 24 standards and those that are not. For electricity, Title 24 uses include the major building envelope systems covered by Part 6 (California Energy Code) of Title 24 (e.g., space heating, space cooling, water heating, and ventilation). Non-Title 24 uses include all other end uses (e.g., appliances, electronics, and other miscellaneous plug-in uses). Because some lighting is not considered as part of the building envelope energy budget, CalEEMod considers lighting as a separate electricity use category.

For natural gas, uses are likewise categorized as Title 24 or non-Title 24. Title 24 uses include building heating and hot water end uses. Non-Title 24 natural gas uses include appliances.

Table N shows the estimated potential increased electricity, natural gas, gasoline, and diesel demand associated with the proposed project. The electricity and natural gas rates are from the CalEEMod analysis, while the gasoline and diesel rates are based on the traffic analysis (see Attachment C) in conjunction with DOT fuel efficiency data.

Table N: Estimated Annual Energy Use of the Proposed Project

Land Use	Electricity Use (kWh/yr)	Natural Gas Use (kBTU/yr)	Gasoline (gal/yr)	Diesel (gal/yr)
Commercial	230,973	102,712	401,628	281,654

Source: Compiled by LSA (May 2023).
gal/yr = gallons per year
kBTU/yr = thousand British thermal units per year
kWh/yr = kilowatt-hours

As shown in Table N, the estimated potential increased electricity demand associated with the proposed project is 230,973 kWh/year. According to the California Energy Commission (CEC), total electricity consumption in the SCE service area in 2022 was 85,870 GWh. Of this total, San Bernardino County consumed 16,629,614,195 kWh/year (CEC n.d.-a). Therefore, electricity demand associated with the proposed project would be approximately 0.001 percent of San Bernardino County's total electricity demand.

Also shown in Table N, the estimated potential increased natural gas demand associated with the proposed project is 102,712 kBTU/year or 1,027 therms. According to the CEC, total natural gas consumption in the SoCalGas service area in 2022 was 5,026 million therms, while San Bernardino County consumed 562,123,065 therms (CEC n.d.-b). Therefore, natural gas demand associated with the proposed project would be approximately 0.0002 percent of San Bernardino County's total natural gas demand.

Furthermore, the proposed project would result in energy usage associated with gasoline and diesel to fuel project-related trips. The average fuel economy for light-duty vehicles (automobiles, pickups, vans, and sport utility vehicles) in the United States has steadily increased, from about 13.1 mpg in 1975 to 25.3 mpg in 2021 (EPA 2021). The average fuel economy for heavy-duty trucks in the United States has also steadily increased, from 5.7 mpg in 2013 to a projected 8.0 mpg in 2021 (CEC 2015).

Using the EPA gasoline fuel economy estimates for 2021, the California diesel fuel economy estimates for 2021, and the traffic data from the project traffic analyses, the proposed project would result in the annual consumption of 401,628 gallons of gasoline and 281,654 gallons of diesel fuel. Based on fuel consumption obtained from CARB's California Emissions Factor Model, Version 2021 (EMFAC2021), approximately 325.0 million gallons of diesel and approximately 907.3 million gallons of gasoline will be consumed from vehicle trips in San Bernardino County in 2023. Therefore, gasoline and diesel demand generated by vehicle trips associated with the proposed project would be a minimal fraction of gasoline and diesel fuel consumption in San Bernardino County.

In addition, vehicles associated with trips to and from the project site would be subject to fuel economy and efficiency standards, which are applicable throughout the State. As such, the fuel efficiency of vehicles associated with project operations would increase throughout the life of the proposed project. Therefore, implementation of the proposed project would not result in a substantial increase in transportation-related energy uses.

Energy Use Summary

As described above, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of fuel or energy and would incorporate renewable energy or energy efficiency measures into building design, equipment uses, and transportation. Impacts would be less than significant, and no mitigation measures would be necessary.

Conflict with or Obstruction of a State or Local Plan for Renewable Energy or Energy Efficiency

As indicated above, energy usage on the project site during construction would be temporary in nature. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the State's available energy sources, and energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are

conducted at a regional level and because the project's total impacts to regional energy supplies would be minor, the proposed project would not conflict with California's energy conservation plans as described in the CEC's *2022 Integrated Energy Policy Report Update*. In addition, the proposed project would comply with Title 24 and CALGreen standards. Thus, as shown above, the proposed project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and would not result in any irreversible or irretrievable commitments of energy. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would be less than significant, and no mitigation measures would be necessary.

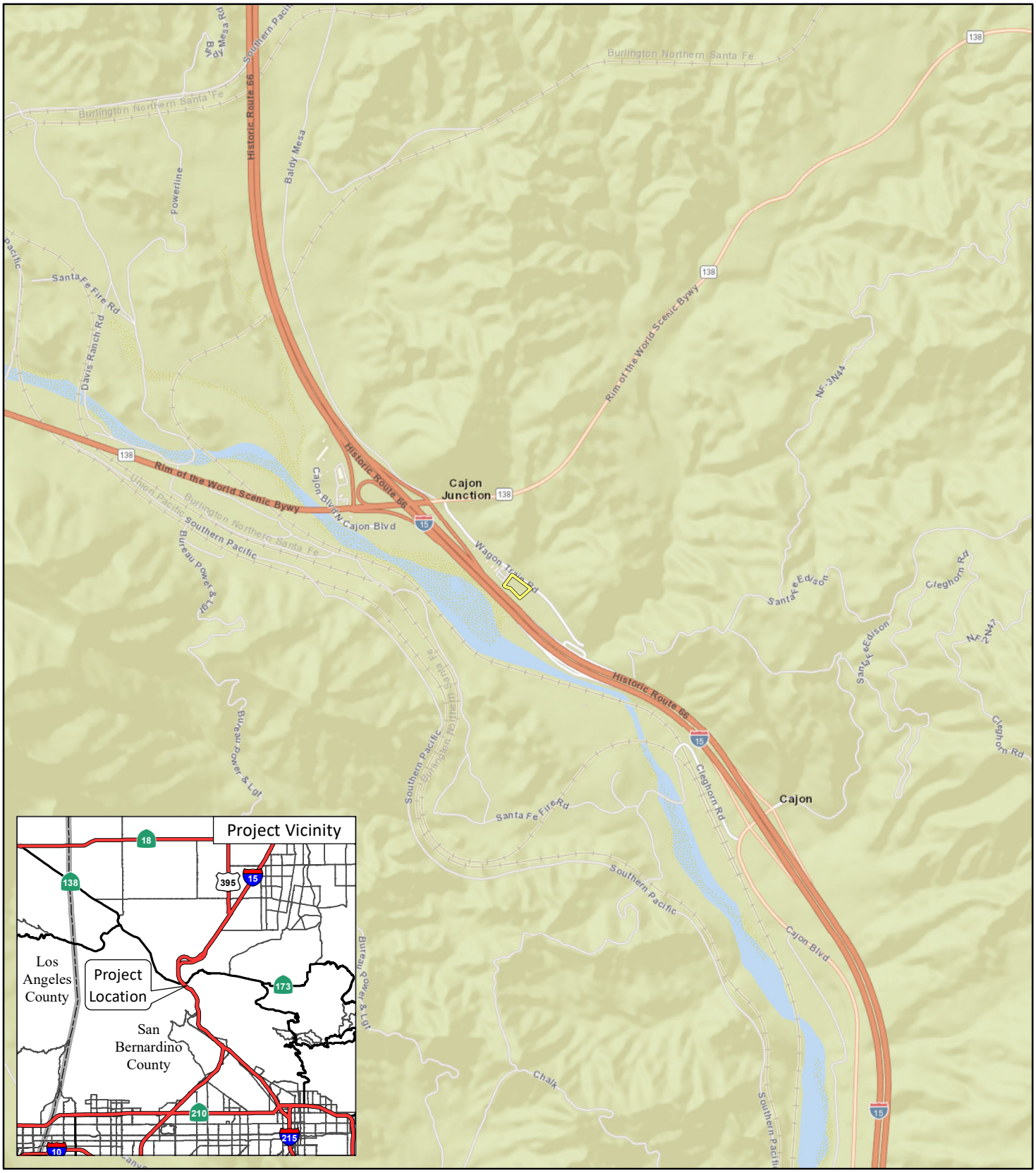
CONCLUSION

Based on the analysis presented above, neither construction nor operational emissions associated with the proposed project would exceed established MDAQMD significance thresholds. The proposed project is not expected to produce significant emissions that would affect nearby sensitive receptors. The proposed project would also not result in objectionable odors affecting a substantial number of people. GHG emissions released during construction and operation of the project are estimated to be lower than significance thresholds and would not be cumulatively considerable. Additionally, the project would not conflict with the goals and objectives of a State or regional plan, or policy or regulation of an agency adopted for the purpose of reducing GHG emissions.

Attachments: A – Figures
B – CalEEMod Output
C – Fuel Usage Worksheet
D - References

ATTACHMENT A

FIGURES



LSA

LEGEND

Project Location

FIGURE 1

N

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FEET

SOURCE: ESRI 2023

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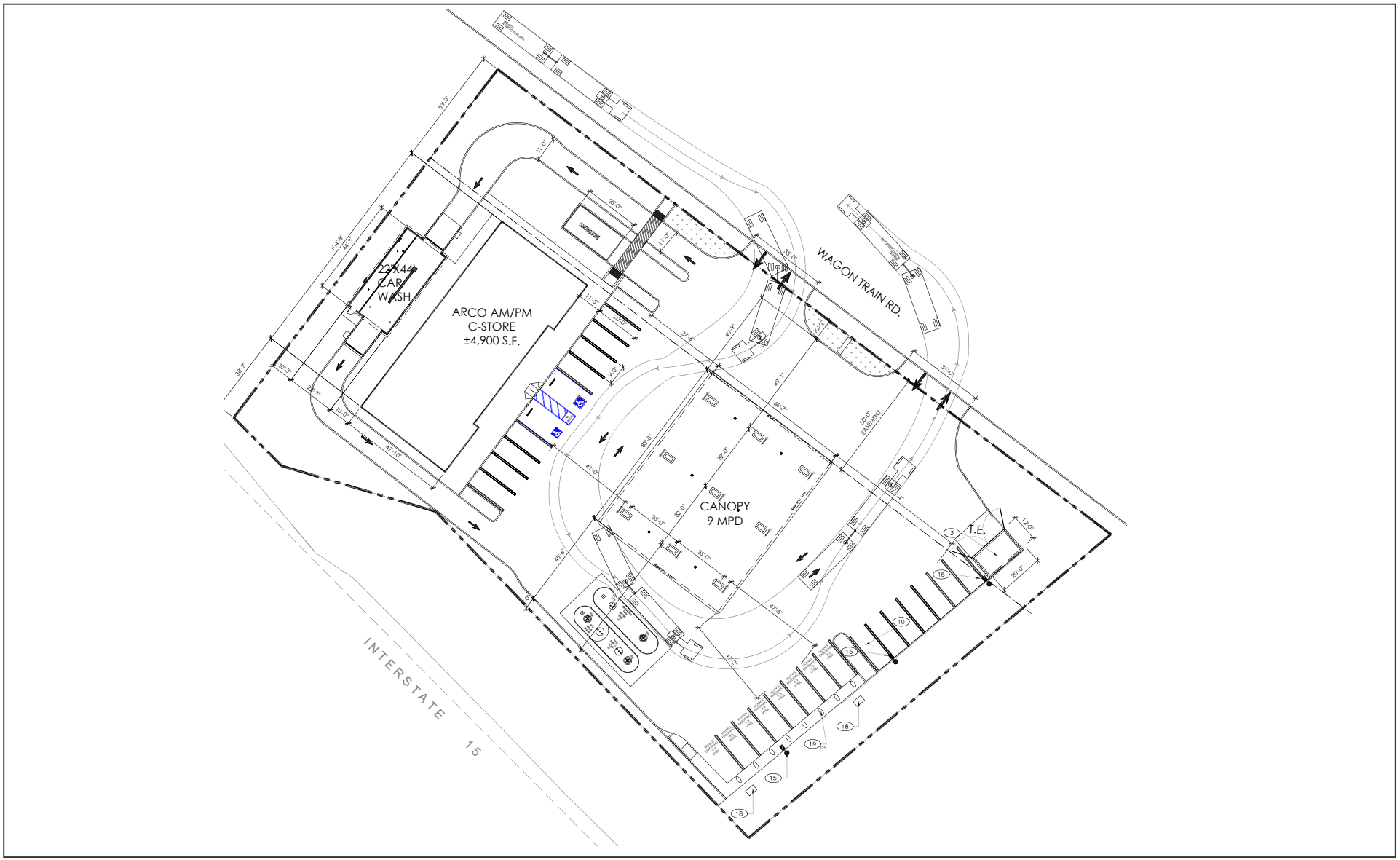
Cajon Pass Commercial Project

Regional and Project Location



LSA

FIGURE 2

N

0 35 70

FEET

SOURCE: AGC Design Concept, Inc.

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Cajon Pass Commercial Project

Site Plan

ATTACHMENT B

CALEEMOD OUTPUT

Cajon Pass Commercial Project (BAJ2101) Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cajon Pass Commercial Project (BAJ2101)
Construction Start Date	10/3/2023
Operational Year	2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.80
Precipitation (days)	6.20
Location	34.3080208531451, -117.46906757613529
County	San Bernardino-Mojave Desert
City	Unincorporated
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5150
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southwest Gas Corp.
App Version	2022.1.1.13

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

Convenience Market with Gas Pumps	4.90	1000sqft	0.11	4,900	14,470	0.00	—	—
Parking Lot	26.0	Space	0.86	0.86	0.00	0.00	—	—
User Defined Retail	1.14	User Defined Unit	0.10	1,140	0.00	0.00	—	—
Other Asphalt Surfaces	0.10	Acre	0.10	0.00	0.00	0.00	—	—

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.71	4.96	7.66	0.01	0.23	0.16	0.40	0.21	0.04	0.25	—	1,178	1,178	0.05	0.01	0.73	1,184
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.83	17.6	16.9	0.02	0.83	1.97	2.81	0.77	0.92	1.69	—	2,588	2,588	0.11	0.02	0.02	2,598
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.32	2.15	2.22	< 0.005	0.09	0.11	0.20	0.09	0.05	0.14	—	378	378	0.02	< 0.005	0.03	380
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.06	0.39	0.40	< 0.005	0.02	0.02	0.04	0.02	0.01	0.03	—	62.6	62.6	< 0.005	< 0.005	0.01	62.9

Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	0.00	—	150	—	—	55.0	0.00	—	—	—	—	—	—
Unmit.	No	No	No	No	Yes	—	No	—	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	0.00	—	150	—	—	55.0	0.00	—	—	—	—	—	—
Unmit.	No	No	No	No	Yes	—	No	—	—	No	—	—	—	—	—	—	—

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.71	4.96	7.66	0.01	0.23	0.16	0.40	0.21	0.04	0.25	—	1,178	1,178	0.05	0.01	0.73	1,184
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	1.83	17.6	16.9	0.02	0.83	1.97	2.81	0.77	0.92	1.69	—	2,588	2,588	0.11	0.02	0.02	2,598
2024	1.75	10.4	11.4	0.02	0.40	0.17	0.44	0.37	0.04	0.38	—	1,997	1,997	0.08	0.02	0.02	2,006
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.26	2.15	2.17	< 0.005	0.09	0.11	0.20	0.09	0.05	0.14	—	365	365	0.01	< 0.005	0.03	366
2024	0.32	1.91	2.22	< 0.005	0.08	0.02	0.09	0.07	< 0.005	0.07	—	378	378	0.02	< 0.005	0.03	380
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.05	0.39	0.40	< 0.005	0.02	0.02	0.04	0.02	0.01	0.03	—	60.4	60.4	< 0.005	< 0.005	< 0.005	60.7
2024	0.06	0.35	0.40	< 0.005	0.01	< 0.005	0.02	0.01	< 0.005	0.01	—	62.6	62.6	< 0.005	< 0.005	0.01	62.9

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.47	12.7	119	0.27	0.22	8.64	8.86	0.21	1.52	1.73	10.5	27,990	28,000	1.86	1.09	1,127	29,498
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.60	13.8	87.7	0.25	0.22	8.64	8.86	0.21	1.52	1.73	10.5	25,515	25,525	1.86	1.13	1,019	26,928
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.68	14.2	95.8	0.25	0.22	8.64	8.86	0.21	1.52	1.73	10.5	26,078	26,089	1.87	1.15	1,064	27,543
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.40	2.59	17.5	0.05	0.04	1.58	1.62	0.04	0.28	0.32	1.73	4,318	4,319	0.31	0.19	176	4,560
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,000

Unmit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Yes

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.33	12.7	119	0.27	0.22	8.64	8.85	0.20	1.52	1.72	—	27,604	27,604	0.78	1.08	111	28,058
Area	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	370	370	0.02	< 0.005	—	371
Water	—	—	—	—	—	—	—	—	—	—	0.70	16.3	17.0	0.07	< 0.005	—	19.3
Waste	—	—	—	—	—	—	—	—	—	—	9.78	0.00	9.78	0.98	0.00	—	34.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,016	1,016
Total	8.47	12.7	119	0.27	0.22	8.64	8.86	0.21	1.52	1.73	10.5	27,990	28,000	1.86	1.09	1,127	29,498
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	7.46	13.8	87.6	0.25	0.22	8.64	8.85	0.20	1.52	1.72	—	25,129	25,129	0.79	1.13	2.87	25,488
Area	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	370	370	0.02	< 0.005	—	371
Water	—	—	—	—	—	—	—	—	—	—	0.70	16.3	17.0	0.07	< 0.005	—	19.3
Waste	—	—	—	—	—	—	—	—	—	—	9.78	0.00	9.78	0.98	0.00	—	34.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,016	1,016
Total	7.60	13.8	87.7	0.25	0.22	8.64	8.86	0.21	1.52	1.73	10.5	25,515	25,525	1.86	1.13	1,019	26,928
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	7.54	14.2	95.7	0.25	0.22	8.64	8.85	0.20	1.52	1.72	—	25,693	25,693	0.80	1.15	47.8	26,103
Area	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	370	370	0.02	< 0.005	—	371
Water	—	—	—	—	—	—	—	—	—	—	0.70	16.3	17.0	0.07	< 0.005	—	19.3
Waste	—	—	—	—	—	—	—	—	—	—	9.78	0.00	9.78	0.98	0.00	—	34.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,016	1,016
Total	7.68	14.2	95.8	0.25	0.22	8.64	8.86	0.21	1.52	1.73	10.5	26,078	26,089	1.87	1.15	1,064	27,543
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.38	2.59	17.5	0.05	0.04	1.58	1.62	0.04	0.28	0.31	—	4,254	4,254	0.13	0.19	7.92	4,322
Area	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	61.2	61.2	< 0.005	< 0.005	—	61.4
Water	—	—	—	—	—	—	—	—	—	—	0.12	2.70	2.81	0.01	< 0.005	—	3.20
Waste	—	—	—	—	—	—	—	—	—	—	1.62	0.00	1.62	0.16	0.00	—	5.66
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	168	168
Total	1.40	2.59	17.5	0.05	0.04	1.58	1.62	0.04	0.28	0.32	1.73	4,318	4,319	0.31	0.19	176	4,560

3. Construction Emissions Details

3.1. Site Preparation (2023) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.54	15.1	13.7	0.02	0.72	—	0.72	0.66	—	0.66	—	2,063	2,063	0.08	0.02	—	2,070

Dust From Material Movement	—	—	—	—	—	1.63	1.63	—	0.78	0.78	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	28.3	28.3	< 0.005	< 0.005	—	28.4
Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	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	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.68	4.68	< 0.005	< 0.005	—	4.70
Dust From Material Movement	—	—	—	—	—	< 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	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.05	0.49	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	102
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.24
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2023) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	17.5	16.3	0.02	0.83	—	0.83	0.77	—	0.77	—	2,453	2,453	0.10	0.02	—	2,462
Dust From Material Movement	—	—	—	—	—	1.84	1.84	—	0.89	0.89	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.72	0.67	< 0.005	0.03	—	0.03	0.03	—	0.03	—	101	101	< 0.005	< 0.005	—	101

Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	16.7	16.7	< 0.005	< 0.005	—	16.7
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	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	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.07	0.66	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	135	135	0.01	< 0.005	0.02	136
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.69	5.69	< 0.005	< 0.005	0.01	5.77
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.94	0.94	< 0.005	< 0.005	< 0.005	0.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2023) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	9.81	10.2	0.02	0.41	—	0.41	0.38	—	0.38	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.19	1.24	< 0.005	0.05	—	0.05	0.05	—	0.05	—	219	219	0.01	< 0.005	—	219
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.22	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.2	36.2	< 0.005	< 0.005	—	36.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.0	26.0	< 0.005	< 0.005	< 0.005	26.3
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.7	32.7	< 0.005	< 0.005	< 0.005	34.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.25	3.25	< 0.005	< 0.005	0.01	3.29
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.96	3.96	< 0.005	< 0.005	< 0.005	4.13
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.55
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.66	0.66	< 0.005	< 0.005	< 0.005	0.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. 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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	9.44	10.1	0.02	0.37	—	0.37	0.34	—	0.34	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	1.44	1.54	< 0.005	0.06	—	0.06	0.05	—	0.05	—	275	275	0.01	< 0.005	—	276
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.26	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	45.5	45.5	< 0.005	< 0.005	—	45.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.5	25.5	< 0.005	< 0.005	< 0.005	25.8
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.2	32.2	< 0.005	< 0.005	< 0.005	33.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.01	4.01	< 0.005	< 0.005	0.01	4.06
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.91	4.91	< 0.005	< 0.005	0.01	5.11
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.66	0.66	< 0.005	< 0.005	< 0.005	0.67
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.85
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.53	4.90	6.53	0.01	0.23	—	0.23	0.21	—	0.21	—	992	992	0.04	0.01	—	995
Paving	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	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.53	4.90	6.53	0.01	0.23	—	0.23	0.21	—	0.21	—	992	992	0.04	0.01	—	995
Paving	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	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.30	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.8	59.8	< 0.005	< 0.005	—	60.0
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	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.90	9.90	< 0.005	< 0.005	—	9.93
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	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	1.13	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	186	186	0.01	0.01	0.73	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.08	0.76	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	165	165	0.01	0.01	0.02	167
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.2	10.2	< 0.005	< 0.005	0.02	10.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.69	1.69	< 0.005	< 0.005	< 0.005	1.72
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2023) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.93	1.15	< 0.005	0.04	—	0.04	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.87	2.87	< 0.005	< 0.005	—	2.88
Architectural Coatings	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	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.48	0.48	< 0.005	< 0.005	—	0.48
Architectural Coatings	< 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	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.20	5.20	< 0.005	< 0.005	< 0.005	5.27
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	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	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	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.91	1.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.16	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Architectural Coatings	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.89	3.89	< 0.005	< 0.005	—	3.91
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	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.10	5.10	< 0.005	< 0.005	< 0.005	5.16
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. 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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	8.33	12.7	119	0.27	0.22	8.64	8.85	0.20	1.52	1.72	—	27,604	27,604	0.78	1.08	111	28,058
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Retail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	8.33	12.7	119	0.27	0.22	8.64	8.85	0.20	1.52	1.72	—	27,604	27,604	0.78	1.08	111	28,058

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	7.46	13.8	87.6	0.25	0.22	8.64	8.85	0.20	1.52	1.72	—	25,129	25,129	0.79	1.13	2.87	25,488
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Retail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	7.46	13.8	87.6	0.25	0.22	8.64	8.85	0.20	1.52	1.72	—	25,129	25,129	0.79	1.13	2.87	25,488
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	1.38	2.59	17.5	0.05	0.04	1.58	1.62	0.04	0.28	0.31	—	4,254	4,254	0.13	0.19	7.92	4,322
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Retail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.38	2.59	17.5	0.05	0.04	1.58	1.62	0.04	0.28	0.31	—	4,254	4,254	0.13	0.19	7.92	4,322

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	231	231	0.01	< 0.005	—	231
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	47.8	47.8	< 0.005	< 0.005	—	48.0
User Defined Retail	—	—	—	—	—	—	—	—	—	—	—	58.3	58.3	< 0.005	< 0.005	—	58.5
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	337	337	0.02	< 0.005	—	338
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	231	231	0.01	< 0.005	—	231
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	47.8	47.8	< 0.005	< 0.005	—	48.0
User Defined Retail	—	—	—	—	—	—	—	—	—	—	—	58.3	58.3	< 0.005	< 0.005	—	58.5

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	337	337	0.02	< 0.005	—	338
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	38.2	38.2	< 0.005	< 0.005	—	38.3
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	7.92	7.92	< 0.005	< 0.005	—	7.95
User Defined Retail	—	—	—	—	—	—	—	—	—	—	—	9.65	9.65	< 0.005	< 0.005	—	9.69
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	55.7	55.7	< 0.005	< 0.005	—	55.9

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.5	26.5	< 0.005	< 0.005	—	26.6
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

User Defined Retail	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.41	6.41	< 0.005	< 0.005	—	6.43
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	32.9	32.9	< 0.005	< 0.005	—	33.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.5	26.5	< 0.005	< 0.005	—	26.6
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Retail	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.41	6.41	< 0.005	< 0.005	—	6.43
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	32.9	32.9	< 0.005	< 0.005	—	33.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.39	4.39	< 0.005	< 0.005	—	4.40
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Retail	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.06	1.06	< 0.005	< 0.005	—	1.06

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.45	5.45	< 0.005	< 0.005	—	5.47

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer Products	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	0.70	5.02	5.72	0.07	< 0.005	—	8.03
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Retail	—	—	—	—	—	—	—	—	—	—	0.00	11.3	11.3	< 0.005	< 0.005	—	11.3
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.70	16.3	17.0	0.07	< 0.005	—	19.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Convenience	—	—	—	—	—	—	—	—	—	—	0.70	5.02	5.72	0.07	< 0.005	—	8.03
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Retail	—	—	—	—	—	—	—	—	—	—	0.00	11.3	11.3	< 0.005	< 0.005	—	11.3
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.70	16.3	17.0	0.07	< 0.005	—	19.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	0.12	0.83	0.95	0.01	< 0.005	—	1.33
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Retail	—	—	—	—	—	—	—	—	—	—	0.00	1.87	1.87	< 0.005	< 0.005	—	1.87
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.12	2.70	2.81	0.01	< 0.005	—	3.20

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Retail	—	—	—	—	—	—	—	—	—	—	1.84	0.00	1.84	0.18	0.00	—	6.45
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	9.78	0.00	9.78	0.98	0.00	—	34.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Retail	—	—	—	—	—	—	—	—	—	—	1.84	0.00	1.84	0.18	0.00	—	6.45
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	9.78	0.00	9.78	0.98	0.00	—	34.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Convenience	—	—	—	—	—	—	—	—	—	—	1.31	0.00	1.31	0.13	0.00	—	4.60
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Retail	—	—	—	—	—	—	—	—	—	—	0.31	0.00	0.31	0.03	0.00	—	1.07
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	1.62	0.00	1.62	0.16	0.00	—	5.66

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,016	1,016
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,016	1,016
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,016	1,016

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,016	1,016
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	168	168
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	168	168

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	10/3/2023	10/9/2023	5.00	5.00	—
Grading	Grading	10/10/2023	10/30/2023	5.00	15.0	—
Building Construction	Building Construction	10/31/2023	3/18/2024	5.00	100	—
Paving	Paving	3/19/2024	4/17/2024	5.00	22.0	—
Architectural Coating	Architectural Coating	12/21/2023	3/30/2024	5.00	72.0	—

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
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.40
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

Grading	Tractors/Loaders/Backh	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	6.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backh oes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backh oes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
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
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT

Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	1.93	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	0.99	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.39	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	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%
Sweep paved roads once per month	9%	9%

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	9,060	3,020	2,509

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	0.50	0.00	—
Grading	0.00	0.00	1.50	0.00	—
Paving	0.00	0.00	0.00	0.00	0.96

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Convenience Market with Gas Pumps	0.00	0%
Parking Lot	0.86	100%
User Defined Retail	0.00	0%
Other Asphalt Surfaces	0.10	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O

2023	0.00	532	0.03	< 0.005
2024	0.00	532	0.03	< 0.005
2024	0.00	532	0.03	< 0.005
2024	0.00	532	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
Convenience Market with Gas Pumps	1,134	1,134	1,134	413,913	31,371	31,371	31,371	11,450,518
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Retail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	9,060	3,020	2,509

5.10.3. Landscape Equipment

Season	Unit	Value

Snow Days	day/yr	20.0
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)
Convenience Market with Gas Pumps	158,156	532	0.0330	0.0040	82,712
Parking Lot	32,816	532	0.0330	0.0040	0.00
User Defined Retail	40,000	532	0.0330	0.0040	20,000
Other Asphalt Surfaces	0.00	532	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Convenience Market with Gas Pumps	362,955	320,345
Parking Lot	0.00	0.00
User Defined Retail	0.00	1,825,000
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Convenience Market with Gas Pumps	14.7	—

Parking Lot	0.00	—
User Defined Retail	3.42	—
Other Asphalt Surfaces	0.00	—

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
Convenience Market with Gas Pumps	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Convenience Market with Gas Pumps	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	No demolition required. Assumed architectural coatings would be applied during the building construction and paving phases.
Construction: Paving	Paved areas from the project plans, assumed 100 percent asphalt.
Land Use	Total site area = 1.42 acres, building area: C-Store=4,900 sf., carwash=1,140 sf., landscaping = 14,470 sf.
Construction: Dust From Material Movement	No material import or export planned.
Operations: Vehicle Data	Traffic study shows 1,134 net daily trips, already includes pass-by & divert. Tesla station would generate 480 daily trips, but would be 100% zero emissions.
Operations: Landscape Equipment	It does snow in the project location.
Construction: Architectural Coatings	Assume all architectural coatings & paint comply with SCAQMD Rule 1113.
Operations: Energy Use	Estimated electricity and natural gas usage rates for the carwash.
Operations: Water and Waste Water	Estimated the carwash water usage rate using 100 gal/car, assumed 50 cars/day.
Operations: Solid Waste	Assumed carwash waste generation rate similar to the convenience store.

ATTACHMENT C

FUEL USAGE WORKSHEET

Fuel Consumption Worksheet

Annual VMT from CalEEMod modeling	Gasoline-Fueled Percentage	Diesel-Fueled Percentage	Average Gasoline mpg	Gasoline Consumption (gallons/yr)	Average Diesel mpg	Diesel Consumption (gallons/yr)
11,450,518	80.3%	19.7%	22.9	401,628	8	281,654

Fleet Mix from CalEEMod modeling

Land Use	ADT	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	
Commercial	1,134	48.664	4.5873	20.497	15.85	3.5385	0.946978	0.5317	1.9054	0.05047	0.0237	2.659	0.1059	0.6395	100
Vehicle Percentages by fuel type															
Gasoline-powered:		98%	95%	75%	50%	50%	10%	5%	5%	0%	0%	100%	10%	50%	
Diesel-powered:		2%	5%	25%	50%	50%	90%	95%	95%	100%	100%	0%	90%	50%	

truck % = 47.86%

ATTACHMENT D

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