

MEMORANDUM

DATE: May 4, 2021

TO: Ryan Fowler, Senior Planner
Community Development Department/Planning Division
City of Menifee

FROM: Amy Fischer, Principal
Jeffrey Haynes, Air Quality Analyst

SUBJECT: Air Quality and Greenhouse Gas Emissions Analysis for the Proposed Boulder Mixed-Use Project (LSA Project Number CIM2002)

INTRODUCTION

This air quality and greenhouse gas (GHG) technical analysis has been prepared to evaluate the potential air quality and GHG impacts associated with the proposed Boulder Mixed-Use Project (proposed project). The proposed project is located on 10.14 acres on the northeast corner of Berea Road and Normandy Road in the City of Menifee (City). The City encompasses approximately 46 square miles of land (approximately 29,440 acres) within the County of Riverside. The City is bounded by the adjacent City of Perris to the north, the Cities of Canyon Lake and Lake Elsinore to the west, and the City of Murrieta to the south, and City of Winchester to the east.

PROJECT DESCRIPTION

The existing project site is vacant. The proposed project would develop a 234-dwelling unit mid-rise apartment complex, an 8,250-square foot daycare facility with outdoor play area, and a 25,745-square foot three-story general office building. The office building area includes the apartment leasing office and resident amenities with common areas. The apartment complex would consist of nine three-story buildings, with ground level covered parking. The entire project would provide 429 total parking spaces (207 covered garage, 27 covered carports, and 195 open space parking). The parking would include 41 Neighborhood Electric Vehicle (NEV) charging stations. Construction would begin in December of 2021 and finish in April of 2023, a duration of 16 months.

Figure 1 presents the location map and regional location of the proposed project. Figure 2 shows the project site plan. All figures are included in Attachment A.

SURROUNDING SENSITIVE USES

Certain land uses are considered sensitive to air quality. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The closest off-site sensitive receptors are the residential and school land uses located northeast of the proposed project site. The nearest sensitive receptors are the single-family residences located along Dorval Court, approximately 38 feet (12 meters) north of the project boundary across the drainage channel and

associated access road. Additionally, surrounding sensitive receptors include the single-family residences along Edina Road to the east. The Champion Self Storage Facility is located across Berea Road to the west, but is not considered a sensitive land use for air quality assessments. Spirit Park, a public park, is located across Normandy Road to the south. The nearest school to the project site is Taawila Elementary School, which is located approximately 1,300 feet south of the project site.

EXISTING SETTING

The proposed project site is located in the City of Menifee, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

Climate/Meteorology

Air quality in the planning area is affected not only by various emission sources (e.g., mobile, stationary, and area sources) but also by atmospheric conditions such as wind speed, wind direction, temperature, and rainfall. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the Basin the worst air pollution problem in the nation.

Climate in the Basin is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern border, and high mountains surround the rest of the Basin, which lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a climate that is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted; however, periods of extremely hot weather, winter storms, or Santa Ana wind conditions do occur.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. Climate data were obtained from the Lake Elsinore Monitoring Station (approximately 6 miles west from project site) ranges from 65.4°F in January to 98.1°F in July and August. The monthly average minimum temperature ranges from 36.4°F in January to 59.8°F in August (Western Regional Climate Center 2018). January is typically the coldest month and August is typically the warmest month in this area of the Basin.

Most rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The monthly average rainfall in Lake Elsinore typically varies from 2.54 inches in February to 0.02 inch in June with an annual total of 12.01 inches.¹ Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Although the Basin has a semi-arid climate, air near the surface is generally moist because of the presence of a shallow marine layer. With very low average wind speeds, there is a limited capacity

¹ Western Regional Climate Center. 2021. Website: <http://www.wrcc.dri.edu> (accessed April 2021).

to disperse air contaminants horizontally. The dominant daily wind pattern is an onshore 6 mile per hour (mph) daytime breeze and an offshore 5 mph nighttime breeze.² The typical wind flow pattern fluctuates only with occasional winter storms or strong northeasterly (Santa Ana) winds from the mountains and deserts northeast of the Basin. Summer wind flow patterns represent worst-case conditions because this is the period of higher temperatures and more sunlight, which result in ozone (O₃) formation.

Temperature normally decreases with altitude, and a reversal of this atmospheric state, where temperature increases with altitude, is called an inversion. The height from the Earth to the inversion base is known as the mixing height. Persistent low inversions and cool coastal air tend to create morning fog and low stratus clouds. Cloudy days are less likely in the eastern portions of the Basin and are about 25 percent more likely along the coast. The vertical dispersion of air pollutants in the Basin is limited by temperature inversions in the atmosphere close to the Earth's surface.

Inversions are generally lower in the nighttime when the ground is cooler than during daylight hours when the sun warms the ground and, in turn, the surface air layer. As this heating process continues, the temperature of the surface air layer approaches the temperature of the inversion base, causing heating along its lower edge. If enough warming takes place, the inversion layer becomes weak and opens up to allow the surface air layers to mix upward. This can be seen in the middle-to-late afternoon on a hot summer day when the smog appears to clear up suddenly. Winter inversions typically break earlier in the day, preventing excessive smog buildup.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversions or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problem is the accumulation of carbon monoxide (CO) and nitrogen oxides (NO_x) due to extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_x to form photochemical smog.

Local Air Quality

The SCAQMD, together with the California Air Resources Board (CARB) maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the Lake Elsinore Monitoring Station, which monitors air pollutant data for ozone, CO, nitrogen dioxide (NO₂), and sulfur dioxide (SO₂), and. Particulate matter less than 10 microns in size (PM₁₀) data were obtained from the Perris Monitoring Station. Particulate matter less than 2.5 microns in size (PM_{2.5}) and sulfur dioxide (SO₂) data were obtained from the Riverside-Rubidoux Monitoring Station. The air quality trends from these two stations are used to represent the ambient air quality in the vicinity of the proposed project site. Table A lists the ambient air quality data monitored at these stations within the past three years.

² Iowa State University. Wind Rows. 2021. Website: https://mesonet.agron.iastate.edu/sites/windrose.php?station=RIV&network=CA_ASOS (accessed April 2021).

Table A: Ambient Air Quality Monitored in the Project Vicinity

Pollutant	Standard	2017	2018	2019
Ozone (O₃) – Lake Elsinore Monitoring Station				
Maximum 1-hour concentration (ppm)		0.121	0.116	0.108
Number of days exceeded:	State: > 0.09 ppm	23	16	4
Maximum 8-hour concentration (ppm)		0.098	0.096	0.089
Number of days exceeded:	State: > 0.07 ppm	56	31	31
	Federal: > 0.07 ppm	54	30	28
Coarse Particulates (PM₁₀) – Perris Monitoring Station				
Maximum 24-hour concentration (µg/m ³)		75.4	64.4	97.0
Number of days exceeded:	State: > 50 µg/m ³	11	2	4
	Federal: > 150 µg/m ³	0	0	0
Annual arithmetic average concentration (µg/m ³)		32.6	30.2	25.8
Exceeded for the year:	State: > 20 µg/m ³	Yes	No	Yes
Fine Particulates (PM_{2.5}) – Riverside-Rubidoux Monitoring Station				
Maximum 24-hour concentration (µg/m ³)		50.3	68.3	57.6
Number of days exceeded:	Federal: > 35 µg/m ³	7	3	5
Annual arithmetic average concentration (µg/m ³)		12.2	12.5	11.2
Exceeded for the year:	State: > 12 µg/m ³	Yes	Yes	No
	Federal: > 15 µg/m ³	No	No	No
Carbon Monoxide (CO) – Lake Elsinore Monitoring Station				
Maximum 1-hour concentration (ppm)		1.2	1.1	1.6
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.8	0.8	0.7
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
Nitrogen Dioxide (NO₂) – Lake Elsinore Monitoring Station				
Maximum 1-hour concentration (ppm)		0.049	0.041	0.038
Number of days exceeded:	State: > 0.18 ppm	0	0	0
	Federal: > 0.10 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.008	0.008	0.006
Exceeded for the year:	State: > 0.030 ppm	No	No	No
	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO₂) – Riverside-Rubidoux Monitoring Station				
Maximum 24-hour concentration (ppm)		0.0012	0.0009	0.0009
Number of days exceeded:	State: > 0.04 ppm	0	0	0
Maximum 1-hour concentration (ppm)		0.0025	0.0017	0.0018
Number of days exceeded:	State: > 0.25 ppm	0	0	0
	Federal: > 0.075 ppm	0	0	0

Source: EPA. Air Data Air Quality Monitors. Website: http://www.epa.gov/airdata/ad_maps.html (accessed April 2021).

µg/m³ = micrograms per cubic meter

NA = not available

EPA = United States Environmental Protection Agency

ppm = parts per million

As shown in Table A, the ambient air quality data indicate that CO, PM₁₀, PM_{2.5}, NO₂, and SO₂ levels are consistently below the relevant State and federal standards. The State 1-hour O₃ standard was exceeded between 4 and 23 times and the State 8-hour O₃ standard was exceeded between 31 and 56 times between 2017 and 2019. The federal 8-hour O₃ standard was exceeded between 28 and 54 times between 2017 and 2019. The State 24-hour and annual PM₁₀ standards were exceeded at between 2 and 11 times between 2017 and 2019. The federal 24-hour and annual PM₁₀ standards were not exceeded during the same timeframe.

Air Pollution Constituents and Attainment Status

The CARB coordinates and oversees both State and federal air pollution control programs in the State. The CARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution and oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the United States Environmental Protection Agency (EPA) and local air quality districts. 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 three calendar years compared with the ambient air quality standards (AAQS).

Attainment areas may be:

- Attainment/unclassified (“unclassifiable” in some lists), which 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), which violated an NAAQS that is currently in use (was nonattainment) in or after 1990, but now attains the standard and is officially re-designated as attainment by the EPA with a maintenance State Implementation Plan (SIP); or
- Attainment (usually only for California ambient air quality standards [CAAQS], but sometimes for NAAQS), which have adequate monitoring data to show attainment, have never been nonattainment, or, for NAAQS, have completed the official maintenance period.

Additional restrictions are imposed on nonattainment areas as required by the EPA. The air quality data collected from monitoring stations are also used to monitor progress in attaining air quality standards. Table B lists the attainment status for the criteria pollutants in the Basin.

Table B: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O ₃ 1-hour	Nonattainment	N/A
O ₃ 8-hour	Nonattainment	Extreme Nonattainment ¹
PM ₁₀	Nonattainment	Attainment/Maintenance
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO ₂	Attainment	Unclassified/Attainment (1-hour) Attainment/Maintenance (Annual)

Table B: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
SO ₂	Attainment	Unclassified/Attainment
Lead	Attainment ²	Unclassified/Attainment ¹
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB. Air Quality Standards and Area Designations. Website: <http://www.arb.ca.gov/desig/desig.htm> (accessed April 2021).

¹ Area has a design value of 0.175 ppm and above.

² Except in Los Angeles County.

CARB = California Air Resources Board

N/A = not applicable

O₃ = ozone

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

CO = carbon monoxide

NO₂ = nitrogen dioxide

PM₁₀ = particulate matter less than 10 microns in size

ppm = parts per million

SO₂ = sulfur dioxide

Description of Global Climate Change and its Sources

Global climate change (GCC) is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (e.g., precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures.

Climate change refers to any change in measures of weather (e.g., temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from natural factors (e.g., changes in the sun's intensity), natural processes within the climate system (e.g., changes in ocean circulation), or human activities (e.g., the burning of fossil fuels, land clearing, or agriculture). The primary observed effect of GCC has been a rise in the average global tropospheric³ temperature of 0.36°F per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling shows that further warming may occur, which may induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of the State could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones. Specific effects in the State might include a decline in the Sierra Nevada snowpack, erosion of the State's coastline, and seawater intrusion in the San Joaquin Delta.

Global surface temperatures have risen by 1.33°F ±0.32°F over the last 100 years. The rate of warming over the last 50 years is almost double that over the last 100 years. The latest projections, based on state-of-the-art climate models, indicate that temperatures in the State are expected to rise 3°F to 10.5°F by the end of the century (California Energy Commission 2006). The prevailing scientific opinion on climate change is that "most of the warming observed over the last 60 years is attributable to human activities."⁴ Increased amounts of carbon dioxide (CO₂) and other GHGs are the primary causes of the human-induced component of warming. The observed warming effect associated with the

³ The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

⁴ Intergovernmental Panel on Climate Change (IPCC). 2013. The Global Warming Potential Concept. Section 8.7.1.2. IPCC 2013 Fifth Assessment Report (AR5). Website: <http://www.ipcc.ch/report/ar5/wg1/> (accessed April 2021).

presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as “the greenhouse effect.”⁵

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 GCC are:⁶

- Carbon dioxide (CO₂);
- Methane (CH₄);
- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs);
- Nitrogen Trifluoride (NF₃);
- Perfluorocarbons (PFCs); and
- Sulfur hexafluoride (SF₆).

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 some scientists believe can cause global warming. While GHGs produced by human activities include naturally occurring GHGs (e.g., CO₂, CH₄, and N₂O), some gases (e.g., HFCs, PFCs, NF₃, and SF₆) are completely new to the atmosphere. Certain other gases (e.g., water vapor) are short-lived in the atmosphere compared to these GHGs, which remain in the atmosphere for significant periods of time and contribute to climate change in the long term. Water vapor 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 gases 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 CO₂, 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 CO₂ over a specified time period. GHG emissions are typically measured in terms of metric tons of “CO₂ equivalents” (metric tons [MT] of CO₂e).⁷ For example, N₂O

⁵ The temperature on Earth is regulated by a system commonly known as the “greenhouse effect.” Just as the glass in a greenhouse allows heat from sunlight in and reduces the amount of heat that escapes, GHGs like CO₂, CH₄, and N₂O in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

⁶ The GHGs listed are consistent with the definition in Assembly Bill 32 (Government Code 38505), as discussed later in this memorandum.

⁷ A metric ton is equivalent to approximately 1.1 tons.

is 298 times more potent at contributing to global warming than CO₂. Table C identifies the GWP for each GHG analyzed in this memorandum.

Table C: Global Warming Potential for Selected Greenhouse Gases

Pollutant	Lifetime (Years)	Global Warming Potential (100-year) ¹
Carbon Dioxide (CO ₂)	~100 ²	1
Methane (CH ₄)	12	25
Nitrous Oxide (N ₂ O)	121	298

Source: CARB. First Update to the Climate Change Scoping Plan (2014).

¹ The 100-year global warming potential estimates are from Section 8.7.1.2 of The Global Warming Potential Concept in the IPCC 2007 Fourth Assessment Report (AR4). Website: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm (accessed April 2021).

² CO₂ has a variable atmospheric lifetime and cannot be readily approximated as a single number.

CARB = California Air Resources Board

CO₂ = carbon dioxide

IPCC = Intergovernmental Panel on Climate Change

The following discussion summarizes the characteristics of the seven primary GHGs.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form as CO₂. Natural sources of CO₂ include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter; and evaporation from the oceans. Human-caused sources of CO₂ include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. The Earth maintains a natural carbon balance, and when concentrations of CO₂ are upset, the system gradually returns to its natural state through natural processes. Natural changes to the carbon cycle work slowly, especially compared to the rapid rate at which humans are adding CO₂ to the atmosphere. Natural removal processes (e.g., photosynthesis by land- and ocean-dwelling plant species) cannot keep pace with this extra input of human-made CO₂, and consequently the gas is building up in the atmosphere. The concentration of CO₂ in the atmosphere has risen approximately 30 percent since the late 1800s.⁸

The transportation sector remained the largest source of GHG emissions in 2017, representing 40 percent of the State's GHG emission inventory.⁹ The largest emissions category within the transportation sector is on-road, which consists of passenger vehicles (cars, motorcycles, and light-duty trucks) and heavy-duty trucks and buses. Emissions from on-road sources constitute more than 92 percent of the transportation sector total. Industry and electricity generation were the State's second- and third-largest categories of GHG emissions, respectively.

⁸ California Environmental Protection Agency (CalEPA). Climate Action Team Report to Governor Schwarzenegger and the Legislature. Website: <https://research.fit.edu/media/site-specific/researchfitedu/coast-climate-adaptation-library/united-states/west-coast-amp-hawaix27i/california---statewide/Bonner-et-al.--2010.--Climate-Action-Team-Report-to-State-Officials.pdf> (accessed April 2021).

⁹ CalEPA. California Air Resources Board. California GHG Emission Inventory. Website: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/ghg_inventory_trends_00-18.pdf (accessed April 2021).

Methane

CH₄ is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH₄ include fires, geologic processes, and bacteria that produce CH₄ in a variety of settings (most notably, wetlands). Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (e.g., the burning of coal, oil, and natural gas). As with CO₂, the major removal process of atmospheric CH₄—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH₄ concentrations in the atmosphere are increasing.

Nitrous Oxide

N₂O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N₂O is also a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion sources emit N₂O. The quantity of N₂O emitted varies according to the types of fuel, technology, and pollution control devices used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N₂O emissions in the State.

Hydrofluorocarbons, Perfluorocarbons, Nitrogen Trifluoride, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for O₃-depleting substances regulated under the Montreal Protocol.¹⁰ PFCs, NF₃, and SF₆ are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in the State; however, the rapid growth in the semiconductor industry, which is active in the State, has led to greater use of PFCs. However, there are no known project-related emissions of these three GHGs; therefore, these substances are not discussed further in this analysis.

Emissions Sources and Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, national, State, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere, accumulate over time, and are generally well mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

¹⁰ The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the O₃ layer by phasing out the production of several groups of halogenated hydrocarbons that are believed to be responsible for O₃ depletion and are also potent GHGs.

Global Emissions

Worldwide emissions of GHGs in 2018 totaled 25.6 billion MT CO₂e. Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change.¹¹

United States Emissions

In 2018, the United States emitted approximately 6.44 billion MT CO₂e, down from 7.4 billion MT CO₂e in 2007. United States emissions increased by 3.7 percent from 2017 to 2018. This increase was uncharacteristic of the emission reduction trend since 2005. As policies are implemented, the downward trend would continue as further reductions of fossil fuels and the shift from coal to natural gas and the increased use of renewables in the electric power sector, and milder weather that contributed to less overall electricity use. In 2018, the total United States GHG emissions were approximately 13 percent less than 2005 levels.

State of California Emissions

According to CARB emission inventory estimates, the State emitted 425 MMT CO₂e emissions in 2018. This is a decrease representing an overall decrease of 18 percent since peak levels in 2004 and 6 MMT CO₂e below the 1990 level and the State's 2020 GHG target.¹²

CARB estimates that transportation was the source of approximately 40 percent of the State's GHG emissions in 2018, followed by electricity generation (both in State and out of State) at 15 percent and industrial sources at 21 percent. The remaining sources of GHG emissions were residential and commercial activities at 10 percent, agriculture at 8 percent, waste at 2 percent, and other unspecified sources at 1 percent.

REGULATORY SETTING

Federal Regulations/Standards

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 in order to protect public health.

As discussed above, data collected at permanent monitoring stations are used by the EPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA. The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the Basin.

¹¹ United Nations Framework Convention on Climate Change (UNFCCC). 2019. GHG data from UNFCCC. Website: <https://unfccc.int/process-and-meetings/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc/ghg-data-from-unfccc> (accessed April 2021).

¹² California Air Resources Board (CARB). 2020. GHG Current California Emission Inventory Data. Website: <http://www.arb.ca.gov/cc/inventory/data/data.htm> (accessed April 2021).

SAFE Vehicle Rule

On September 27, 2019, the United States Environmental Protection Agency and the National Highway Safety Administration published the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program.” The Part One Rule revokes California’s authority to set its own GHG emissions standards and sets zero-emission vehicle mandates in California. To account for the effects of the Part One Rule, the CARB released off-model adjustment factors on November 20, 2019, to adjust criteria air pollutant emissions outputs from the EMFAC model. These off-model adjustment factors are to be applied by multiplying the emissions calculated for light- and medium-duty vehicles by the adjustment factor. With the incorporation of these adjustment factors, operational emissions generated by light-duty automobiles, light-duty trucks, and medium-duty trucks associated with project-related vehicle trips at the year 2024 would have a negligible impact on overall operational emissions generated by the project and would not alter the significance of the project’s operational emissions as discussed further below.

State Regulations/Standards

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, the CARB has worked with the public, the business sector, and local governments to find solutions to the State’s air pollution problems.

The California Air Pollution Control Officers Association (CAPCOA) is a nonprofit association of the air pollution control officers from all 35 local air quality agencies throughout California. CAPCOA was formed in 1976 to promote clean air and to provide a forum for sharing knowledge, experience, and information among the air quality regulatory agencies around the State. CAPCOA meets regularly with federal and State air quality officials to develop statewide rules and to ensure consistent application of rules and regulations. CAPCOA works with specialized task forces (including regulated industry) by participating actively in the legislative process, and continuing to coordinate local efforts with those of the State and federal air agencies. The goal is to protect public health while maintaining economic vitality. California adopted the California Clean Air Act (CCAA) in 1988. The CARB administers the CAAQS for the 10 air pollutants designated in the CCAA. These 10 State air pollutants are the six criteria pollutants designated by the CAA as well as four others: visibility-reducing particulates, H₂S, sulfates, and vinyl chloride.

California Climate Action Milestones

In 1988, AB 4420 directed the California Energy Commission (CEC) to report on “how global warming trends may affect the State’s energy supply and demand, economy, environment, agriculture, and water supplies” and offer “recommendations for avoiding, reducing and addressing the impacts.” This marked the first statutory direction to a State agency to address climate change.

The California Climate Action Registry was created to encourage voluntary reporting and early reductions of GHG emissions with the adoption of Senate Bill (SB) 1771 in 2000. The CEC was directed to assist by developing metrics and identifying and qualifying third-party organizations to provide technical assistance and advice to GHG emission reporters. The next year, SB 527 amended SB 1771 to emphasize third-party verification.

SB 1771 also contained several additional requirements for the CEC, including (1) updating the State's GHG inventory from an existing 1998 report and continuing to update it every five years; (2) acquiring, developing, and distributing information on GCC to agencies and businesses; (3) establishing a State interagency task force to ensure policy coordination; and (4) establishing a climate change advisory committee to make recommendations on the most equitable and efficient ways to implement GCC requirements. In 2006, AB 1803 transferred preparation of the inventory from the CEC to CARB with AB 1803. CARB updates the inventory annually.

AB 1493, authored by Assembly Member Fran Pavley in 2002, directed the CARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles. The so-called "Pavley" regulations, or Clean Car regulations, were approved by the CARB in 2004. On September 24, 2009, the CARB adopted amendments to the "Pavley" regulations that reduced GHG emissions in new passenger vehicles from 2009 through 2016. AB 1493 also directed the State's Climate Action Registry to adopt protocols for reporting reductions in GHG emissions from mobile sources prior to the operative date of the regulations.

The California Renewable Portfolio Standard Program, which requires electric utilities and other entities under the jurisdiction of the California Public Utilities Commission to meet 20 percent of its retail sales with renewable power by 2017, was established by SB 1078 in 2002. The Renewable Portfolio Standard was accelerated to 20 percent by 2010 by SB 107 in 2006. The program was subsequently expanded by the renewable electricity standard approved by the CARB in September 2010, requiring all utilities to meet a 33 percent target by 2020. The renewable electricity standard is projected to reduce GHG emissions from the electricity sector by at least 12 MMT CO₂e in 2020.

Executive Order (EO) S-3-05 (June 2005) established GHG targets for the State (e.g., returning to year 2000 emission levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050). EO S-3-05 directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate efforts to meet the targets with the heads of other State agencies. This group became the Climate Action Team.

In 2006, the State Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multiyear program to reduce GHG emissions in California. AB 32 required the CARB to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the CARB in 2008 and must be updated every five years. The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. In 2016, the State Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the State Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan. The CARB has prepared a second update to the Scoping Plan to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

California is implementing the world's first Low Carbon Fuel Standard for transportation fuels, pursuant to both EO S-01-07 (signed January 2007) and AB 32. The standard requires a reduction of at least 10 percent in the CO intensity of the State's transportation fuels by 2020. This reduction is expected to reduce GHG emissions in 2020 by 17.6 MMT CO₂e. Also in 2007, AB 118 created the Alternative and Renewable Fuel and Vehicle Technology Program. The CEC and CARB administer this

program, which provides funding for alternative fuel and vehicle technology research, development, and deployment in order to attain the State's climate change goals, achieve the State's petroleum reduction objectives and clean air and GHG emission reduction standards, develop public and private partnerships, and ensure a secure and reliable fuel supply.

In addition to vehicle emissions regulations and the Low Carbon Fuel Standard, the third effort to reduce GHG emissions from transportation is the reduction in the demand for personal vehicle travel (i.e., vehicle miles traveled, or VMT). This measure was addressed in September 2008 through the Sustainable Communities and Climate Protection Act of 2008, or SB 375. The enactment of SB 375 initiated an important new regional land use planning process to mitigate GHG emissions by integrating and aligning planning for housing, land use, and transportation for California's 18 MPOs. The bill directed CARB to set regional GHG emission reduction targets for most areas of the State. SB 375 also contained important elements related to federally mandated regional transportation plans and the alignment of State transportation and housing planning processes.

The CARB released the Final 2017 Climate Change Scoping Plan Update in November 2017. This Scoping Plan Update establishes a proposed framework of action for California to meet the target of 40 percent reduction in GHGs by 2030 compared to 1990 levels. This goal builds on California's success in establishing effective policies that have helped reduce emissions of GHGs while delivering substantial economic and environmental benefits. Further, the goal aligns California with the rest of the world in the global effort to fight climate change.

The first Scoping Plan was required by AB 32, the Global Warming Solutions Act, and was adopted in 2008. Under that plan, California set in place a range of effective programs to slash GHGs from cars, trucks, fuels, industry, and electrical generation, and the State is well on its way to achieving the goal of AB 32 to reach 1990 levels of GHGs by 2020. The 2017 Climate Change Scoping Plan Update builds on those programs and takes aim at the 2030 target established by SB 32 (Pavley). That bill, and related laws, is designed specifically to continue California's leadership in the fight against climate change and guide the State toward an equitable clean energy economy and prosperous future. To reach that future, the 2017 Climate Change Scoping Plan Update draws on the successes and the lessons learned from the first chapter of California's efforts to fight climate change under AB 32. The 2017 Climate Change Scoping Plan Update builds on key programs such as the Cap-and-Trade Regulation; the Low Carbon Fuel Standard; and much cleaner cars, trucks, and freight movement, powering the State with cleaner renewable energy, and strategies to reduce methane emissions from agricultural and other wastes by using methane to meet energy needs.

REGIONAL AIR QUALITY PLANNING FRAMEWORK

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

The CARB is responsible for incorporating air quality management plans for local air basins into an SIP for EPA approval. Significant authority for air quality control within them has been given to local air quality districts that regulate stationary-source emissions and develop local nonattainment plans.

SCAQMD Rules

The proposed project would be required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures (BACMs) so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM₁₀ component). Compliance with these rules would reduce impacts on nearby sensitive receptors.

SCAQMD Rule 403 Measures

- Water active sites at least three times daily (locations where grading is to occur will be thoroughly watered prior to earthmoving).
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).
- Traffic speeds on all unpaved roads shall be reduced to 15 mph or less.

REGIONAL AIR QUALITY MANAGEMENT PLAN

The SCAQMD is responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. The SCAQMD prepares a new AQMP every three years, updating the previous plan and 20-year horizon.

The latest plan is the 2016 AQMP, which incorporates the latest scientific and technological information and planning assumptions, including the 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal)¹³ and updated emission inventory methodologies for various source categories. The 2016 AQMP included the integrated strategies and measures needed to meet the NAAQS, implementation of new technology measures, and demonstrations of attainment of the 1-hour and 8-hour ozone NAAQS as well as the latest 24-hour and annual PM_{2.5} standards. Key elements of the 2016 AQMP include:

- Calculation and credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation);
- A strategy with fair-share emission reductions at the federal, State, and local levels;
- Investment in strategies and technologies meeting multiple air quality objectives;
- Identification of new partnerships and significant funding for incentives to accelerate deployment of zero and near zero technologies;

¹³ Southern California Association of Governments (SCAG). 2020. Connect SoCal. September. Website: <https://scag.ca.gov/read-plan-adopted-final-plan> (accessed April 2021).

- Enhanced socioeconomic assessment, including an expanded environmental justice analysis;
- Attainment of the 24-hour PM_{2.5} standard in 2019 with no additional measures;
- Attainment of the annual PM_{2.5} standard by 2025 with implementation of a portion of the ozone strategy; and
- Attainment of the 1-hour ozone standard by 2022 with no reliance on “black box” future technology (CAA Section 182(e)(5) measures).

LOCAL POLICIES

City of Menifee General Plan

State law requires that every city and county adopt a comprehensive, long-term General Plan. A General Plan represents the community’s view of its future and is often referred to as a blueprint for growth and development. As a result, local decision-makers oftentimes use the goals and policies of the General Plan as a basis on which to formulate land use decisions. The City’s General Plan was adopted in 2013. Relevant policies that apply to the proposed project are listed under the Air Quality Section in the City of Menifee’s General Plan Conservation and Open Space Element; contain the following air quality-related goals and policies that are applicable to the proposed project:

Open Space & Conservation Element: Air Quality

Goal OSC-9: Reduced impacts to air quality at the local level by minimizing pollution and particulate matter.

Policy OSC-9.1: Meet state and federal clean air standards by minimizing particulate matter emissions from construction activities.

Policy OSC-9.2: Buffer sensitive land uses, such as residences, schools, care facilities, and recreation areas from major air pollutant emission sources, including freeways, manufacturing, hazardous materials storage, wastewater treatment, and similar uses.

Policy OSC-9.3: Comply with regional, state, and federal standards and programs for control of all airborne pollutants and noxious odors, regardless of source.

Policy OSC-9.5: Comply with the mandatory requirements of Title 24 Part 11 of the California Building Standards Code (CALGreen) and Title 24 Part 6 Building and Energy Efficiency Standards.

Energy conservation is another strategy for improving air quality. The City will promote energy conservation by implementing State Title 24 energy performance requirements through building codes. In addition, the relationship between project design and future energy requirements will be considered when reviewing proposals for new development. Energy will be conserved in public buildings and the provision of electric vehicle charging areas will be encouraged in new public and private developments.

THRESHOLDS OF SIGNIFICANCE

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse air quality impact if project-generated pollutant emissions would do any of the following:

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

Certain air districts (e.g., SCAQMD) have created guidelines and requirements to conduct air quality analysis. The SCAQMD's current guidelines, the *CEQA Air Quality Handbook*¹⁴ with associated updates, were followed in this assessment of construction air quality impacts for the proposed project.

Regional Emissions Thresholds

The SCAQMD has established daily emission thresholds for construction and operation of a proposed project in the Basin. The emission thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety, these emission thresholds are regarded as conservative and would overstate an individual project's contribution to health risks. Table D lists the CEQA significance thresholds for construction emissions established for the Basin.

Table D: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Emissions Threshold (lbs/day)					
	VOC	NOx	CO	PM ₁₀	PM _{2.5}	SOx
Construction	75	100	550	150	55	150
Operations	55	55	550	150	55	150

Source: SCAQMD. Air Quality Significance Thresholds. Website: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf> (accessed April 2021).

CO = carbon monoxide
lbs/day = pounds per day

NOx = nitrogen oxides

PM₁₀ = particulate matter less than 10 microns in size

PM_{2.5} = particulate matter less than 2.5 microns in size
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides
VOC = volatile organic compounds

Projects in the Basin with construction- or operation-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidelines. These thresholds, which the SCAQMD developed and that apply throughout the Basin, apply as both

¹⁴ South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*. Website: [http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-\(1993\)](http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993)) (accessed April 2021).

project and cumulative thresholds. If a project exceeds these standards, it is considered to have a project-specific and cumulative impact.

Greenhouse Gases *State CEQA Guidelines* Section 15064(b) states, “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. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting.”

The thresholds for GHG emission impact analysis are consistent with Appendix G of the *State CEQA Guidelines*. A project would normally have a significant effect on the environment if the project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

On December 30, 2009, the Natural Resources Agency adopted amendments to the *State CEQA Guidelines* that became effective on March 18, 2010. The amendments to the *State CEQA Guidelines* include new requirements for evaluating GHG emissions. Pursuant to the amended *State CEQA Guidelines*, a lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

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

The City, as a lead agency, may assess the significance of GHG emissions by determining a project’s consistency with a local GHG reduction plan that qualifies under Section 15183.5 of the *CEQA Guidelines*.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting held in September 2010 (Meeting No. 15), the SCAQMD proposed to adopt a tiered approach for evaluating GHG emissions for development projects where the SCAQMD is not the lead agency:

- **Tier 1. Exemptions:** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2. Consistency with a Locally Adopted Ghg Reduction Plan:** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG

emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

- **Tier 3. Numerical Screening Threshold:** If GHG emissions are less than the numerical screening-level threshold, project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, the SCAQMD requires an assessment of GHG emissions. SCAQMD, under Option 1, proposed a "bright-line" screening-level threshold of 3,000 MT CO₂e per year for all land use types or, under Option 2, the following land-use-specific thresholds: 1,400 MT CO₂e for commercial projects, 3,500 MT CO₂e for residential projects, or 3,000 MT CO₂e for mixed-use projects. This bright-line threshold is based on a review of the OPR database of CEQA projects. Based on that review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal and therefore less than cumulatively considerable impact on GHG emissions.

- **Tier 4. Performance Standards:** If emissions exceed the numerical screening threshold, a more detailed review of the project's GHG emissions is warranted. The SCAQMD has proposed an efficiency target for projects that exceed the bright-line threshold. The current recommended approach is per-capita efficiency targets. The SCAQMD is not recommending use of a percent emissions reduction target. Instead, the SCAQMD proposes proposed a 2020 efficiency target of 4.8 MT CO₂e per year per service population for project-level analyses and 6.6 MT CO₂e per year per service population for plan-level projects (e.g., program-level projects such as General Plans). The GHG efficiency metric divides annualized GHG emissions by the service population, which is the sum of residents and employees, per the following equation:

$$\text{Rate of Emission} = \text{GHG Emissions (MT CO}_2\text{e/yr)} \div \text{Service Population}$$

The efficiency evaluation consists of comparing the project's efficiency metric to efficiency targets. Efficiency targets represent the maximum quantity of emissions each resident and employee in California could emit in various years based on emission levels necessary to achieve the statewide GHG emissions reduction goals. A project that results in a lower rate of emissions would be more efficient than a project with a higher rate of emissions, based on the same service population. The metric considers GHG reduction measures integrated into a project's design and operation (or through mitigation). The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.

Because the project would begin operations in the post-2020 timeframe, the 2020 numerical screening threshold of 3,000 MT CO₂e and the efficiency target of 4.8 MT CO₂e per year per service population would need to be adjusted to reflect the State's post-2020 GHG reduction goals.

The CARB has completed a Scoping Plan, which will be utilized by the SCAQMD to establish the 2030 GHG efficiency threshold. SCAQMD has yet to publish a quantified GHG efficiency threshold for the 2030 target. A scaled threshold consistent with State goals detailed in SB 32, Executive Order B-30-15, and Executive Order S-3-05 to reduce GHG emissions by 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, respectively, was

developed for 2024, when the proposed project is anticipated to be operational. Though the SCAQMD has not published a quantified threshold beyond 2020, this assessment uses a threshold of 2,520 MT CO₂e per year or 4.0 MT CO₂e/yr/SP, which was calculated for the buildout year of 2024 based on the GHG reduction goals of SB 32 and Executive Order B-30-15.

For the purpose of this analysis, the proposed project will first be compared to the adjusted screening-level Tier 3 Numerical Screening Threshold of 2,520 MT CO₂e per year for all land use types. If it is determined that the proposed project is estimated to exceed this screening threshold, it will then be compared to the efficiency-based threshold.

METHODOLOGY

To evaluate air emissions from the construction and operation of the project, LSA conducted a California Emission Estimator Model (CalEEMod) Version 2016.3.2 analysis, which is the current air quality and land use emissions model recommended by the CARB for evaluating emissions from land use projects. Emissions were based on the CalEEMod default emission factors for the construction activities. The project would begin construction in December 2021 and would tentatively be completed in April 2023, a duration of 16 months. Emissions from operation of the proposed project include vehicle emissions, area source emissions, and energy use emissions. Trip generation rates for the project used in the model were based on the project's trip generation estimates, as identified in Table 5-A of the *Boulders Mixed-Use Project Traffic Study* (Traffic Study).¹⁵ Based on the Traffic Study, the proposed project would generate approximately 1,971 average daily trips (ADTs) (i.e., ADTs without internal capture and pass-by trips). The internal capture rate estimated for each land use was applied to its respective trip generation to estimate the number of internal trips. These internal trips were subtracted from the trip generation to establish the total number of external trips for each land uses. After internal trip capture rates were applied, the project is anticipated to generate 1,909 ADTs.

Based on the results of the CalEEMod analysis, criteria pollutant emissions were then compared with the CEQA air quality significance thresholds from the SCAQMD.

The City of Menifee does not currently have an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. However, Menifee is a member city of SCAG. SCAG's 2020-2045 Connect SoCal Regional adopted September 3, 2020, is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. A GHG consistency analysis was conducted to determine whether or not the proposed project would be consistent with the Connect SoCal.

AIR QUALITY IMPACT ANALYSIS

This section identifies the air quality impacts associated with implementation of the proposed project. 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.

¹⁵ LSA, Inc. 2021. *Boulders Mixed-Use Project Traffic Study*. February.

Consistency with Applicable Air Quality Plans

A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans.

The proposed project would develop a 234-dwelling unit mid-rise apartment complex with associated clubhouse and leasing office, a three-story general office building, and daycare facility. Therefore, the proposed project is not considered a project of statewide, regional, or area-wide significance (e.g., large-scale projects such as airports, electrical generating facilities, petroleum and gas refineries, residential development of more than 500 dwelling units, shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space) as defined in the California Code of Regulations (Title 14, Division 6, Chapter 3, Article 13, §15206(b)). Because the proposed project would not be defined as a regionally significant project under CEQA, it does not meet the SCAG Intergovernmental Review criteria.

The City's General Plan is consistent with the SCAG Regional Comprehensive Plan Guidelines and the SCAQMD AQMP. Pursuant to the methodology provided in the SCAQMD *CEQA Air Quality Handbook*, consistency with the Basin 2016 AQMP is affirmed when a project (1) would not increase the frequency or severity of an air quality standards violation or cause a new violation and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented as follows:

1. The project would result in short-term construction and long-term operational pollutant emissions that are all less than the CEQA significance emissions thresholds established by SCAQMD, as demonstrated below; therefore, the project would not result in an increase in the frequency or severity of an air quality standards violation or cause a new air quality standard violation.
2. The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities; therefore, the proposed project is not defined as significant.

The project site currently has a General Plan Land Use designation of Economic Development Corridor (EDC), the project site would not require any General Plan Amendment as proposed uses proposed project would be consistent with the applicable General Plan designation. As such, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the Basin.

Based on the consistency analysis presented above, the proposed project would be consistent with the current regional AQMP and would not result in a new or worsening impact related to implementation of the AQMP.

Criteria Pollutant Analysis

The Basin is currently designated nonattainment for the federal and State standards for O₃ and PM_{2.5}. In addition, the Basin is in nonattainment for the PM₁₀ standard. The Basin'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 an ambient air quality standard. 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 its impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the SCAQMD 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. Therefore, additional analysis to assess cumulative impacts is not necessary. The following analysis assesses the potential project-level air quality impacts associated with construction and operation of the proposed project.

Construction Emissions

During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by grading, building construction, paving, and other activities. Emissions from construction equipment are also anticipated and would include CO, nitrogen oxides (NO_x), VOC, directly emitted PM_{2.5} or PM₁₀, and toxic air contaminants such as diesel exhaust particulate matter.

Project construction activities would include grading, site preparation, building construction, architectural coating, and paving activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM₁₀ emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions would depend on soil moisture, silt content of soil, wind speed, and amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The SCAQMD has established Rule 403: Fugitive Dust, which would require the applicant to implement measures that would reduce the amount of particulate matter generated during the construction period. The Rule 403 measures that were incorporated in this analysis include:

- Water active sites at least three times 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 or less.

In addition to dust-related PM₁₀ emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, sulfur oxides (SO_x), NO_x, VOCs and some soot particulate (PM_{2.5} and PM₁₀) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

Peak daily emissions associated with the on-site construction equipment, on-road haul trucks and vendor trips, and fugitive dust emissions during each of the construction tasks were calculated using the most recent version of the CalEEMod Version 2016.3.2. The tentative construction schedule is shown in Table E, based on a 16 month project duration. The CalEEMod default construction equipment estimates were used as shown in Table F, which outlines the type of equipment, hours of use, total amount, and load factor. Because on-site construction operations must comply with dust control and other measures prescribed by SCAQMD Rule 403, compliance with dust control rules is assumed in the analysis.

Table E: Anticipated Construction Schedule

Phase Name	Phase Start Date	Phase End Date	Number of Days/Week	Number of Days
Site Preparation	12/1/2021	12/14/2021	5	10
Grading	12/15/2021	3/8/2022	5	60
Building Construction	3/9/2022	1/24/2023	5	230
Paving	1/25/2023	2/21/2023	5	20
Architectural Coating	2/22/2023	4/18/2023	5	40

Source: Estimated by LSA Associates, Inc., from the site plan (assuming a 2024 opening year) (April 2021).

Table F: Diesel Construction Equipment Utilized by Construction Phase

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
Site Preparation	Rubber-Tired Dozers	3	8	247	0.40
	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	1	8	158	0.38
	Graders	1	8	187	0.41
	Rubber-Tired Dozers	1	8	247	0.40
	Tractors/Loaders/Backhoes	3	8	97	0.37

Table F: Diesel Construction Equipment Utilized by Construction Phase

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
Building Construction	Cranes	1	7	231	0.29
	Forklifts	3	8	89	0.20
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	3	7	97	0.37
	Welders	1	8	46	0.45
Paving	Pavers	2	8	130	0.42
	Paving Equipment	2	8	132	0.36
	Rollers	2	8	80	0.38
Architectural Coating	Air Compressors	1	6	78	0.48

Source: Compiled by LSA using CalEEMod defaults (April 2021).

Construction emissions were estimated for the proposed project using CalEEMod Version 2016.3.2. Approximately 20,600 cubic yards of soil would be cut and filled on the project site; no soil would be imported or exported. To account for the soil cut and fill activity, the grading phase was extended. This analysis assumes the proposed project would use Tier 2 construction equipment and assumes exposed soil would be watered at least three times daily, which was included in the CalEEMod. Table G identifies the maximum daily emissions associated with construction activities during each construction phase. Attachment B provides CalEEMod output sheets.

Table G: Short-Term Regional Construction Emissions

Construction Phase	Maximum Daily Regional Pollutant Emissions (lbs/day)							
	VOCs	NOx	CO	SOx	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}
Site Preparation	1.3	33.8	23.6	0.0	7.2	0.9	3.9	0.9
Grading	1.1	26.3	19.6	0.0	2.7	0.8	1.4	0.8
Building Construction	2.5	29.3	28.1	0.1	3.2	0.9	0.9	0.9
Paving	1.3	20.2	17.8	0.0	0.2	0.7	0.0	0.7
Architectural Coating	46.1	1.4	3.4	0.0	0.6	0.1	0.1	0.1
Peak Daily Emissions	46.1	33.8	28.1	0.1	8.2		4.9	
SCAQMD Threshold	75.0	100.0	550.0	150.0	150.0		55.0	
Significant?	No	No	No	No	No		No	

Source: Compiled by LSA (April 2021).

CO = carbon monoxide

lbs/day = pounds per day

NOx = nitrogen oxides

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

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SOx = sulfur oxides

VOCs = volatile organic compounds

As shown in Table G, construction emissions associated with the project would not exceed the SCAQMD's thresholds for VOC, NO_x, CO, SO_x, PM_{2.5}, and PM₁₀. Therefore, construction of the proposed project would not result in a cumulatively considerable increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS.

Operational Air Quality Impacts

Long-term air pollutant emissions associated with operation of the proposed project include emissions from area, energy, and mobile sources. Area-source emissions include architectural coatings, consumer products, and landscaping. Energy-source emissions result from activities in buildings that use electricity and natural gas. Mobile-source emissions are from vehicle trips associated with operation of the project.

PM₁₀ 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 PM₁₀ 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 emission 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. The primary sources of energy demand for the proposed project would include building mechanical systems such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators or 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, like renewable energy, producing fewer emissions than conventional sources. The proposed project would comply with the energy efficiency requirements of the 2019 CALGreen Code, which was included in this analysis. Non-Title 24 Natural Gas intensity factors were removed from the CalEEMod and a 40 percent reduction was applied for apartment land use subtypes.¹⁶

Typically, area-source emissions consist of direct sources of air emissions at the project site, including architectural coatings, consumer products, and use of landscape maintenance equipment. This analysis assumes that the proposed project would not include any gas fireplaces or wood-burning hearths.

Long-term operation emissions associated with the proposed project were calculated using CalEEMod. Trip generation rates used in CalEEMod for the proposed project were based on the project's trip generation estimates. The proposed project would generate 1,909 ADTs, which was included in CalEEMod. The *SAFE Rule* emission factor adjustments were implemented for the operational buildout year of 2024 for Light Duty Autos (LDA) and Light Duty Trucks (LDT).

¹⁶ California Gas and Electric Utilities. 2020 California Gas Report. Website: https://www.socalgas.com/sites/default/files/2020-10/2020_California_Gas_Report_Joint_Utility_Biennial_Comprehensive_Filing.pdf (accessed April 2020).

The proposed project would include emission reduction features that were incorporated into the CalEEMod analysis including:

- Low-flow faucets and water efficient irrigation;
- Use of low VOC paints;
- Neighborhood electric vehicle (NEV) charging stations;
- The project is located within 0.5 miles from multiple bus stations; and
- The project would comply with the CalRecycle initiative of reducing landfill waste by 75 percent.

This analysis provides the estimated operational emissions associated with the proposed project. Table H provides the proposed project's estimated operational emissions. Attachment B provides CalEEMod output sheets.

Table H: Project Operational Emissions

Emission Type	Pollutant Emissions (lbs/day)					
	VOC	NOx	CO	SOx	PM ₁₀	PM _{2.5}
Area Sources	6.5	0.2	19.3	<0.1	0.1	0.1
Energy Sources	0.0	0.3	0.2	<0.1	0.0	0.0
Mobile Sources	3.0	13.1	35.9	0.1	12.4	3.4
Total Project Emissions	9.4	13.6	55.4	0.1	12.6	3.5
SCAQMD Threshold	55.0	55.0	550.0	150.0	150.0	55.0
Exceeds Threshold?	No	No	No	No	No	No

Source: Compiled by LSA (April 2021).

Note: Some values may not appear to add correctly due to rounding.

CO = carbon monoxide

lbs/day = pounds per day

NOx = nitrogen oxides

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

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SOx = sulfur oxides

VOC = volatile organic compounds

The results shown in Table H indicate the proposed project would not exceed the significance criteria for daily VOC, NOx, CO, SOx, PM₁₀, or 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.

Long-Term Microscale (CO Hot Spot) Analysis

Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the vicinity of the proposed project site. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the Lake Elsinore Monitoring Station showed a highest recorded 1-hour concentration of 1.6 ppm (the State standard is 20 ppm) and a highest 8-hour concentration of 0.8 ppm (the State standard is 9 ppm) during the past 3 years (Table A). The highest CO concentrations would normally occur during peak traffic hours. The Traffic Impact Analysis prepared for the project indicates that intersection operations would not substantially degrade with implementation of the proposed project. Therefore, given the extremely low level of CO concentrations in the project area and the lack of traffic impacts at any intersections, project-related vehicles are not expected to contribute significantly to CO concentrations. Because no CO hot spot would occur, as identified in the proposed project, there would be no project-related impacts on CO concentrations.

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. The project site is surrounded primarily by commercial and residential uses. The nearest sensitive receptors are the single-family residences located along Dorval Court, approximately 38 feet (12 m) north of the project boundary across the drainage channel and associated access road.

Project construction and operation emissions were compared to the LST screening tables in SRA 24, based on an 82-foot source-receptor distance considering a 3-acre area of disturbance area daily during construction grading and 5-acre operational threshold as a conservative approach to the 10.14-acre project site. The results of the LST analysis, summarized in Table I and Table J, indicate that the project would not result in an exceedance of SCAQMD LSTs during construction or operation.

Table I: Project Localized Construction Emissions

Source	Pollutant Emissions			
	NOx (lbs/day)	CO (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
On-Site Emissions	33.7	23.0	8.0	4.8
Localized Significance Threshold	203.0	1,114.0	9.0	5.3
Significant?	No	No	No	No

Source: Compiled by LSA (April 2021).

Note: Source Receptor Area 24, based on a 3-acre construction disturbance daily area, distance of 82 feet from project boundary.

CO = carbon monoxide

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

NOx = nitrogen oxides

PM₁₀ = particulate matter less than 10 microns in size

Table J: Project Localized Operational Emissions

Source	Pollutant Emissions			
	NOx (lbs/day)	CO (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
On-Site Emissions	0.9	21.0	0.7	0.3
Localized Significance Thresholds	270.0	1,577.0	4.0	2.0
Significant?	No	No	No	No

Source: Compiled by LSA (April 2021).

Note: Source Receptor Area 24, based on a 5-acre operational daily area, distance of 82 feet from project boundary.

CO = carbon monoxide

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

NOx = nitrogen oxides

PM₁₀ = particulate matter less than 10 microns in size

As detailed in Tables I and J, emissions would not exceed construction or operational LSTs. The project's peak operational on-site NOx emissions are 0.9 lb/day. Due to the small size of the proposed project in relation to the overall Basin, the level of emissions is not sufficiently high to use a regional modeling program to correlate health effects on a Basin-wide level. On a regional scale, the quantity of emissions from the project is incrementally minor. Because the SCAQMD has not identified any other methods to quantify health impacts from small projects and due to the size of the project, it is speculative to assign any specific health effects to small project-related emissions. However, based on this localized analysis, the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, impacts related to the proposed project would be less than significant.

GREENHOUSE GAS IMPACT ANALYSIS

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

This section describes the proposed project's construction- and operational-related GHG emissions and contribution to global climate change.

Construction Greenhouse Gas Emissions

Construction activities associated with the proposed project would produce combustion emissions from various sources. Construction would result in the emission of GHGs through the operation of construction equipment and from worker and builder supply vendor vehicles for the duration of the 16-month construction period. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O. Furthermore, the fueling of heavy equipment emits CH₄. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change. Table K lists the annual GHG emissions from construction of the proposed project.

Table K: Construction Greenhouse Gas Emissions

Construction Phase	Greenhouse Gas Emissions (MT)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Site Preparation	17.6	<0.1	0.0	17.7
Grading	83.0	<0.1	0.0	83.0
Building Construction	696.6	0.7	0.0	698.6
Paving	21.4	<0.1	0.0	21.5
Architectural Coating	14.0	<0.1	0.0	14.0
Total Construction Emissions	831.9	0.12	0.0	834.8
Amortized over 30 years	27.1	<0.1	0.0	27.8

Source: Compiled by LSA (April 2021).

Note: Column totals may not add due to rounding from the model results.

CH₄ = methane

CO₂ = carbon dioxide

CO₂e = carbon dioxide equivalent

MT/yr = metric tons per year

N₂O = nitrous oxide

As indicated above, SCAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are required to quantify and disclose GHG emissions that would occur during construction. The SCAQMD then requires the construction GHG emissions to be amortized over the life of the project, defined as 30 years, added to the operational emissions, and compared to the applicable interim GHG significance threshold tier. As shown in Table K, the project would generate 834.8 CO₂e during construction of the project. When annualized over the 30-year life of the project, annual emissions would be 27.8 MT CO₂e. Amortized construction GHG emissions from Table K have been added to the operational GHG emissions in Table L below.

Operational Greenhouse Gas Emissions

Long-term operation of the proposed project would generate GHG emissions from area, mobile, waste, and water sources as well as indirect emissions from sources associated with energy consumption. Mobile-source GHG emissions would include project-generated vehicle trips associated with trips to the proposed project. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site, and other sources. 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. In addition, water source emissions associated with the proposed project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

Following guidance from the SCAQMD, GHG emissions were estimated using CalEEMod. Table L shows the calculated GHG emissions for the proposed project. Motor vehicle emissions are the largest source of GHG emissions for the project at nearly 86 percent of the project total. Energy use is the next largest category at nearly 9 percent. Waste and water are about 0.8 percent and 4.1 percent of the total emissions, respectively. Attachment B provides additional calculation details.

Table L: GHG Emissions (Metric Tons Per Year)

Emission Type	Operational Emissions				
	CO ₂	CH ₄	N ₂ O	CO ₂ e	Percentage of Total
Area Source	4.0	<1.0	0.0	4.0	0.2
Energy Source	213.9	0.0	<1.0	215.1	9.1
Mobile Source	2,022.1	0.1	0.0	2,024.4	85.8
Waste Source	7.2	0.4	<1.0	17.9	0.8
Water Source	79.7	0.5	0.0	96.9	4.1
Total Operational Emissions				2,358.4	100.0
Amortized Construction Emissions				27.8	—
Total Annual Emissions				2,386.2	—
SCAQMD Threshold				2,520.0	—
Exceeds Threshold?				No	—

Source: LSA (April 2021).

GHG = greenhouse gas

SCAQMD = South Coast Air Quality Management District

As discussed above, according to SCAQMD, a project would have less than significant GHG emissions if it would result in operational-related GHG emissions of less than 2,520 MT CO₂e per year. Based on the analysis results in Table L, the proposed project would result in 2,386.2 CO₂e per year, which would be below the numeric threshold of 2,520 MT CO₂e per year. Therefore, GHG emissions generated by the project are not considered to cumulatively contribute to Statewide GHG emissions, and impacts would be less than significant.

Consistency with Greenhouse Gas Reduction Plans

The City of Menifee does not currently have an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. Applicable plans adopted for the purpose of reducing GHG emissions include the CARB's Scoping Plan and SCAG's Connect SoCal 2020–2045. A consistency analysis with these plans for the proposed project is presented below.

The CARB Scoping Plan is applicable to State agencies, but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require the City to adopt policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the State agencies outlined in the Scoping Plan result in GHG emissions reductions at the local level. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that would affect a local jurisdiction's emissions inventory from the top down.

Statewide strategies to reduce GHG emissions include the low-carbon fuel standards and changes in the corporate average fuel economy standards (e.g., Pavley I and Pavley II, and California Advanced Clean Cars program). Although measures in the Scoping Plan apply to State agencies and not the proposed project, the project's GHG emissions would be reduced by compliance with statewide measures that have been adopted since AB 32 and SB 32 were adopted. Therefore, the proposed project would be consistent with the CARB Scoping Plan, and impacts are considered less than significant.

Menifee is a member city of SCAG. SCAG's Connect SoCal 2020–2045 RTP/SCS, adopted September 3, 2020, is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. The RTP/SCS establishes GHG emissions goals for automobiles and light-duty trucks for 2020 and 2035 and establishes an overall GHG target for the region consistent with both the statewide GHG-reduction targets for 2020 and the post-2020 statewide GHG reduction goals. The Connect SoCal 2020–2045 RTP/SCS contains over 4,000 transportation projects, including highway improvements, railroad grade separations, bicycle lanes, new transit hubs, and replacement bridges. These future investments were included in county plans developed by the six-county transportation commissions and seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. The Connect SoCal 2020–2045 RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding. In addition, the Connect SoCal 2020–2045 RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve State GHG emission reduction goals and federal CAA requirements, preserve open space areas, improve public health and roadway safety, support the vital goods movement industry, and use resources more efficiently. The proposed project's consistency with the Connect SoCal 2020–2045 RTP/SCS goals is analyzed in detail in Table M.

Table M: Southern California Association of Governments RTP/SCS Goals

SCAG Measure	Project Consistency
Goal 1: Align the plan investments and policies with improving regional economic development and competitiveness.	Not Applicable: This is not a project-specific policy and is therefore not applicable for the residential land uses.
Goal 2: Maximize mobility and accessibility for all people and goods in the region.	Consistent: Improvements to the transportation network in Menifee are developed and maintained to meet the needs of local and regional transportation and to ensure efficient mobility. A number of regional and local plans and programs are used to guide development and maintenance of transportation networks, including but not limited to: <ul style="list-style-type: none"> • The Riverside County Congestion Management Program • Caltrans Traffic Impact Studies Guidelines • Caltrans Highway Capacity Manual • SCAG RTP/SCS
Goal 3: Ensure travel safety and reliability for all people and goods in the region.	Consistent: All modes of transit in Menifee are required to follow safety standards set by corresponding regulatory documents. Pedestrian walkways and bicycle routes must follow safety precautions and standards established by local (e.g., City of Menifee, County of Riverside) and regional (e.g., SCAG, Caltrans) agencies. Roadways for motorists must follow safety standards established for the local and regional plans.
Goal 4: Preserve and ensure a sustainable regional transportation system.	Consistent: All new roadway developments and improvements to the existing transportation network must be assessed with some level of traffic analysis (e.g., traffic assessments, traffic impact studies) to determine how the developments would impact existing traffic capacities and to determine the needs for improving future traffic capacities.
Goal 5: Maximize the productivity of our transportation system.	Consistent: The local and regional transportation system would be improved and maintained to encourage efficiency and productivity. The City's Public

Table M: Southern California Association of Governments RTP/SCS Goals

SCAG Measure	Project Consistency
	Works oversees the improvement and maintenance of all aspects of the public right-of-way on an as-needed basis. The City also strives to maximize productivity of the region's public transportation system (e.g., bus, bicycle) for residents, visitors, and workers coming into and out of Menifee. The project would locate residential uses adjacent to bus lines.
Goal 6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking).	Consistent: The reduction of energy use, improvement of air quality, and promotion of more environmentally sustainable development are encouraged through the development of alternative transportation methods, green design techniques for buildings, and other energy reducing techniques. For example, development projects are required to comply with the provisions of the California Building and Energy Efficiency Standards and the Green Building Standards Code (CALGreen). The City also strives to maximize the protection of the environment and improvement of air quality by encouraging and improving the use of the region's public transportation system (e.g., bus, bicycle) for residents, visitors, and workers coming into and out of Menifee. The project would provide pedestrian networks on-site and connecting off-site. Bicycle racks and lockers would be implemented as part of the project.
Goal 7: Actively encourage and create incentives for energy efficiency, where possible.	Consistent: This is not a project-specific policy and is therefore not applicable. However, the project would be consistent with energy efficiency requirements of Title 24.
Goal 8: Encourage land use and growth patterns that facilitate transit and non-motorized transportation.	Consistent: See response to RTP/SCS Goal 6.
Goal 9: Maximize the security of our transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	Consistent: The City of Menifee monitors existing and newly constructed roadways and transit routes to determine the adequacy and safety of these systems. Other local and regional agencies (e.g., Riverside Transit Agency, Caltrans, and SCAG) work with the City to manage these systems. Security situations involving roadways and evacuations would be addressed in the County of Orange's emergency management protocols (e.g., the Riverside County Emergency Management Division's Emergency Operations Center) developed in accordance with the State and federal mandated emergency management regulations.

Source: LSA Associates, Inc. (April 2021).

SCAG = Southern California Association of Governments

RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy

CALGreen = California Green Building Standards Code

Implementing SCAG's RTP/SCS will greatly reduce the regional GHG emissions from transportation and help to achieve statewide emission reduction targets. As demonstrated in Table M, the proposed project would in no way conflict with the stated goals of the RTP/SCS; therefore, the proposed project would not interfere with SCAG's ability to achieve the region's year 2020 and post-2020 mobile source GHG reduction targets outlined in the Connect SoCal 2020–2045 RTP/SCS, and it can be assumed that regional mobile emissions will decrease in line with the goals of the RTP/SCS. Furthermore, the proposed project is not regionally significant per *CEQA Guidelines* Section 15206 and as such, it would not conflict with the SCAG RTP/SCS targets, since those targets were established and are applicable on a regional level.

Table N addresses consistency with City General Plan Relevant GHG policies and shows the project would be consistent with the applicable strategies and policies in the City General Plan Draft EIR.

Table N: Menifee General Plan GHG Policy Consistency Analysis

Menifee General Plan GHG Policy	Project Consistency
<p>Pavley I. California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA.</p>	<p>Not Applicable: This is a statewide measure that cannot be implemented by a project applicant or lead agency. However, the standards would be applicable to the light-duty vehicles that would access the project site during construction and operation of the project. Implementation of this project will not impede or hinder the State's ability to implement this measure.</p>
<p>LCFS. Low-Carbon Fuel Standard (LCFS) for transportation fuels sold within the State. Executive Order S-1-07 sets a declining standard for GHG emissions measured in CO₂e per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The LCFS applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the fuel cycle using the most economically feasible methods.</p>	<p>Not Applicable: This is a statewide measure that cannot be implemented by a project applicant or lead agency. However, the standards would be applicable to the light-duty vehicles that would access the project site during construction and operation of the project. Implementation of this project will not impede or hinder the State's ability to implement this measure.</p>
<p>C-1.1. Require roadways to: comply with federal, State, and local design and safety standards; meet the needs of multiple types of users (families, commuters, recreational beginners, exercise experts) and meet ADA standards and guidelines; be compatible with streetscape and surrounding land uses; and be maintained in accordance with best practices.</p>	<p>Consistent: The project's internal roadways would comply applicable standards.</p>
<p>C-2.1. Require on- and off-street pathways to: comply with federal, State, and local design and safety standards. meet the needs of multiple types of users (families, commuters, recreational beginners, exercise experts) and meet ADA standards and guidelines; be compatible with streetscape and surrounding land uses; and be maintained in accordance with best practices.</p>	<p>Consistent: The project's pathways would comply with applicable standards.</p>
<p>Title 24 Energy Standards. Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission in June 1977 and updated triennially (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.</p>	<p>Consistent: This is a measure for the State to increase its energy efficiency standards in new buildings. The project is required to build to the new standards and would increase its energy efficiency through compliance.</p>
<p>Title 24 CALGreen. On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (CALGreen) was adopted as part of the California Building Standards Code (Part 11, Title 24, California Code of Regulations). CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code</p>	<p>Consistent: This is a measure for the State to increase its energy efficiency standards in new buildings. The project is required to build to the new standards and would increase its energy efficiency through compliance.</p>

Table N: Menifee General Plan GHG Policy Consistency Analysis

Menifee General Plan GHG Policy	Project Consistency
requirements), water conservation, material conservation, and internal air contaminants.	
33% RPS. Executive Order S-14-08 was signed in November 2008, which expands the State's renewable energy standard to 33 percent renewable power by 2020. In 2011, the State Legislature adopted this higher standard in SBX1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.	Not Applicable: This is a statewide measure that cannot be implemented by a project applicant or lead agency. Southern California Edison is required to increase its percent of power supply from renewable sources to 33 percent by the year 2020 pursuant to various regulations. The project would purchase power that comprises a greater amount of renewable sources and could install renewable solar power systems that will assist the utility in achieving the mandate.
OSC-9.5. Comply with the mandatory requirements of Title 24 Part 11 of the California Building Standards Code (CALGreen) and the Title 24 Part 6 Building Energy Efficiency Standards.	Consistent: The project would comply with required measures of Title 24.

Source: LSA Associates, Inc. (April 2021).

SCAG = Southern California Association of Governments

RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy

CALGreen = California Green Building Standards Code

The project would be consistent with GHG reduction policies in the City of Menifee's General Plan. In addition, the project would be consistent with policies in the 2017 Scoping Plan such as compliance with Title 24 energy reduction measures. Therefore, the proposed project would not conflict with an adopted plan, policy, or regulation pertaining to GHGs and impacts would be less than significant

CONCLUSION

Based on the analysis presented above, construction and operation of the proposed project would not result in the generation of criteria air pollutants that would exceed SCAQMD thresholds of significance. Compliance with SCAQMD Rule 403, Fugitive Dust, would further reduce construction dust impacts. The proposed project is not expected to produce significant emissions that would affect nearby sensitive receptors. The 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. The project would also be consistent with the 2016 AQMP. The proposed project would generally be consistent with the applicable GHG measures from the City's General Plan and the Connect SoCal 2020-2045 RTP/SCS.

ATTACHMENTS

- Attachment A: Figures
- Attachment B: CalEEMod Output Files

ATTACHMENT A

FIGURES

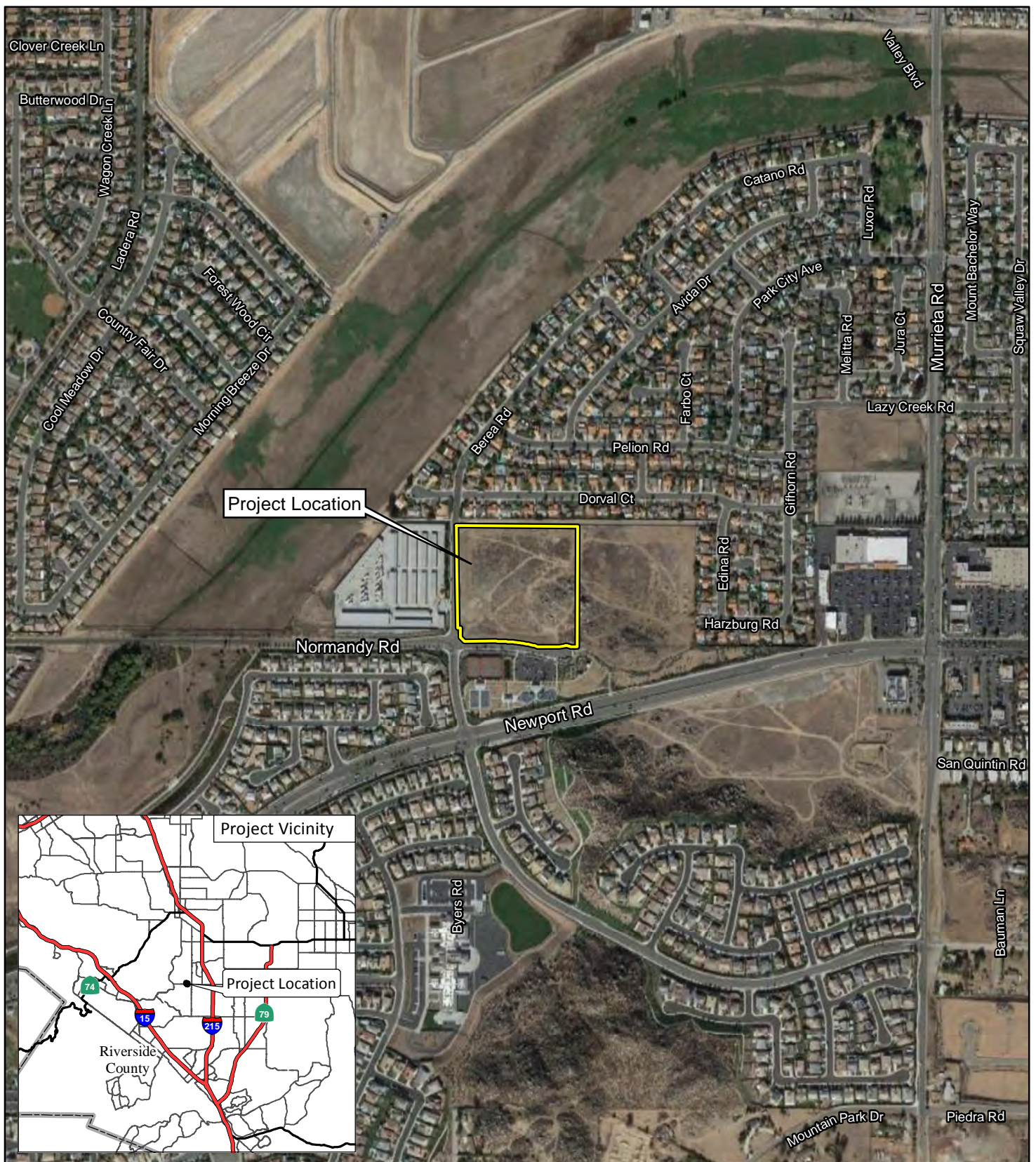


FIGURE 1

LSA

LEGEND

Project Location



0 375 750
FEET

SOURCE: Google (2019)

I:\CIM2002\GIS\MXD\ProjectLocation_Aerial.mxd (12/10/2020)

Boulders Mixed-Use Project
City of Menifee
Project and Regional Location

ATTACHMENT B

CALEEMOD OUTPUT FILES

Boulders Mixed Use Project - South Coast AQMD Air District, Annual

Boulders Mixed Use Project

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.75	1000sqft	0.59	25,745.00	0
Day-Care Center	8.25	1000sqft	0.19	8,250.00	0
Enclosed Parking Structure	207.00	Space	1.86	82,800.00	0
Parking Lot	222.00	Space	2.00	88,800.00	0
Apartments Mid Rise	234.00	Dwelling Unit	5.50	234,000.00	669

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	470.63	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Boulders Mixed Use Project - South Coast AQMD Air District, Annual

Project Characteristics - CO2 Intensity Factor is based on SCE 2019 Sustainability Report.

Land Use - 234 multi-family DU. 3-story office building including lobby, corridor, apartment leasing, and common areas 25,745 sf. Daycare Center 8,250 sf. 207 covered garage and 222 carport/open parking for total 429 spaces. Gross lot 10.14 acres.

Construction Phase - Construction would begin in December 2021 and completed in April 2023. Grading was extended for balanced 20,600 cy of cut/fill work. Architectural coatings phase extended.

Off-road Equipment - Additional grader added.

Grading -

Vehicle Trips - Multi-Family Residential 1,269 ADT (5.42). General Office Building 247 ADT (9.7). Daycare 393 ADT (47.62). Total 1,909 ADT.

Vehicle Emission Factors - CARB's EMFAC2014 Off-Model Adjustment Factors were applied to GHG EFs gasoline powered vehicles to account for SAFE Vehicle Rule. All criteria EF values are too small to use adjustment factors.

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Woodstoves - No wood burning stoves or fireplaces would be incorporated on-site.

Energy Use - Comply with 2019 Title 24 Building Energy Efficiency Standards. Excludes non-Title 24 intensity factors from all land use types, and reduce Title 24 NG intensity by 40 percent for Apts.

Construction Off-road Equipment Mitigation - All off-road equipment over 50 HP will utilize Tier 2 engines. Water exposed areas at least three times daily during construction.

Mobile Land Use Mitigation - The project is a high-density development 24.6 DU/acre. Transit bus station located within 0.5 miles of the project site. NEV being implemented with 41 EV charging stalls.

Area Mitigation - No hearths.

Energy Mitigation - Exceeds 2016 Title 24 by 7 percent for 2019 Title 24, LED or other efficient lighting in 75 percent of the luminaires, and Energy Star appliances in apartment land use subtypes.

Water Mitigation - 2010 CALGreen Code requires a 20% reduction in water use. . Project would utilize low-flow water features and efficient irrigation system.

Waste Mitigation - State CalRecycle 75 percent initiative of solid waste generated be source reduced, recycled or composted.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24E	1.49	0.00
tblEnergyUse	NT24E	2.79	0.00
tblEnergyUse	NT24NG	6,030.00	0.00
tblEnergyUse	NT24NG	1.79	0.00
tblEnergyUse	T24NG	8,764.08	5,258.45
tblFireplaces	NumberGas	198.90	0.00
tblFireplaces	NumberNoFireplace	23.40	0.00

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tblFireplaces	NumberWood	11.70	0.00
tblLandUse	LandUseSquareFeet	25,750.00	25,745.00
tblLandUse	LotAcreage	6.16	5.50
tblProjectCharacteristics	CO2IntensityFactor	702.44	470.63
tblVehicleEF	LDA	243.88	251.56
tblVehicleEF	LDA	52.52	54.17
tblVehicleEF	LDA	256.98	265.07
tblVehicleEF	LDA	52.52	54.17
tblVehicleEF	LDA	239.64	247.19
tblVehicleEF	LDA	52.52	54.17
tblVehicleEF	LDT1	310.15	319.92
tblVehicleEF	LDT1	65.72	67.79
tblVehicleEF	LDT1	325.67	335.92
tblVehicleEF	LDT1	65.72	67.79
tblVehicleEF	LDT1	304.96	314.57
tblVehicleEF	LDT1	65.72	67.79
tblVehicleEF	LDT2	344.86	355.73
tblVehicleEF	LDT2	73.12	75.42
tblVehicleEF	LDT2	362.72	374.15
tblVehicleEF	LDT2	73.12	75.42
tblVehicleEF	LDT2	338.93	349.61
tblVehicleEF	LDT2	73.12	75.42
tblVehicleTrips	WD_TR	6.65	5.42
tblVehicleTrips	WD_TR	74.06	47.62
tblVehicleTrips	WD_TR	11.03	9.70
tblWoodstoves	NumberCatalytic	11.70	0.00
tblWoodstoves	NumberNoncatalytic	11.70	0.00

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2.0 Emissions Summary

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2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0351	0.3639	0.2154	4.0000e-004	0.1474	0.0178	0.1652	0.0734	0.0164	0.0898	0.0000	35.4446	35.4446	0.0109	0.0000	35.7179
2022	0.3507	2.8053	3.1190	7.9000e-003	0.4954	0.1115	0.6069	0.1702	0.1044	0.2746	0.0000	710.6073	710.6073	0.0946	0.0000	712.9712
2023	0.9568	0.2932	0.4280	9.6000e-004	0.0393	0.0128	0.0520	0.0105	0.0120	0.0225	0.0000	85.8083	85.8083	0.0128	0.0000	86.1284
Maximum	0.9568	2.8053	3.1190	7.9000e-003	0.4954	0.1115	0.6069	0.1702	0.1044	0.2746	0.0000	710.6073	710.6073	0.0946	0.0000	712.9712

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0134	0.3400	0.2448	4.0000e-004	0.0588	9.7700e-003	0.0685	0.0290	9.7700e-003	0.0387	0.0000	35.4446	35.4446	0.0109	0.0000	35.7179
2022	0.2802	3.7540	3.3884	7.9000e-003	0.3993	0.1135	0.5129	0.1217	0.1133	0.2350	0.0000	710.6069	710.6069	0.0946	0.0000	712.9708
2023	0.9529	0.4680	0.4705	9.6000e-004	0.0393	0.0157	0.0549	0.0105	0.0156	0.0261	0.0000	85.8082	85.8082	0.0128	0.0000	86.1283
Maximum	0.9529	3.7540	3.3884	7.9000e-003	0.3993	0.1135	0.5129	0.1217	0.1133	0.2350	0.0000	710.6069	710.6069	0.0946	0.0000	712.9708

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	7.16	-31.76	-9.07	0.00	27.08	2.17	22.79	36.59	-4.49	22.49	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	12-1-2021	2-28-2022	0.8701	0.9189
2	3-1-2022	5-31-2022	0.7998	1.0303
3	6-1-2022	8-31-2022	0.8030	1.0414
4	9-1-2022	11-30-2022	0.7973	1.0332
5	12-1-2022	2-28-2023	0.6930	0.9449
6	3-1-2023	5-31-2023	0.8310	0.8310
		Highest	0.8701	1.0414

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1439	0.0279	2.4181	1.3000e-004		0.0134	0.0134		0.0134	0.0134	0.0000	3.9534	3.9534	3.8100e-003	0.0000	4.0487
Energy	7.4300e-003	0.0639	0.0302	4.1000e-004		5.1300e-003	5.1300e-003		5.1300e-003	5.1300e-003	0.0000	303.1836	303.1836	0.0156	4.2800e-003	304.8468
Mobile	0.4392	2.1897	5.7967	0.0238	2.1049	0.0170	2.1220	0.5640	0.0158	0.5798	0.0000	2,240.5629	2,240.5629	0.0980	0.0000	2,243.0127
Waste						0.0000	0.0000		0.0000	0.0000	28.8876	0.0000	28.8876	1.7072	0.0000	71.5679
Water						0.0000	0.0000		0.0000	0.0000	6.4011	87.6902	94.0913	0.6629	0.0166	115.6219
Total	1.5906	2.2815	8.2449	0.0243	2.1049	0.0356	2.1405	0.5640	0.0344	0.5984	35.2887	2,635.3900	2,670.6787	2.4874	0.0209	2,739.0979

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2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1439	0.0279	2.4181	1.3000e-004		0.0134	0.0134		0.0134	0.0134	0.0000	3.9534	3.9534	3.8100e-003	0.0000	4.0487
Energy	6.9100e-003	0.0594	0.0281	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	213.9229	213.9229	0.0103	3.1100e-003	215.1064
Mobile	0.4199	2.0800	5.3023	0.0215	1.8850	0.0154	1.9004	0.5051	0.0144	0.5194	0.0000	2,022.1476	2,022.1476	0.0898	0.0000	2,024.3916
Waste						0.0000	0.0000		0.0000	0.0000	7.2219	0.0000	7.2219	0.4268	0.0000	17.8920
Water						0.0000	0.0000		0.0000	0.0000	5.1209	74.5454	79.6663	0.5306	0.0134	96.9143
Total	1.5707	2.1673	7.7484	0.0220	1.8850	0.0336	1.9186	0.5051	0.0325	0.5376	12.3428	2,314.5693	2,326.9121	1.0612	0.0165	2,358.3529

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	1.25	5.00	6.02	9.66	10.45	5.51	10.37	10.45	5.36	10.16	65.02	12.17	12.87	57.34	21.22	13.90

3.0 Construction Detail**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2021	12/14/2021	5	10	
2	Grading	Grading	12/15/2021	3/8/2022	5	60	
3	Building Construction	Building Construction	3/9/2022	1/24/2023	5	230	
4	Paving	Paving	1/25/2023	2/21/2023	5	20	
5	Architectural Coating	Architectural Coating	2/22/2023	4/18/2023	5	40	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 30

Acres of Paving: 3.86

Residential Indoor: 473,850; Residential Outdoor: 157,950; Non-Residential Indoor: 50,993; Non-Residential Outdoor: 16,998; Striped Parking Area: 10,296 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	252.00	59.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7179	16.7179	5.4100e-003	0.0000	16.8530
Total	0.0194	0.2025	0.1058	1.9000e-004	0.0903	0.0102	0.1006	0.0497	9.4000e-003	0.0591	0.0000	16.7179	16.7179	5.4100e-003	0.0000	16.8530

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3.2 Site Preparation - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.8000e-004	3.1400e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8601	0.8601	2.0000e-005	0.0000	0.8607
Total	3.8000e-004	2.8000e-004	3.1400e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8601	0.8601	2.0000e-005	0.0000	0.8607

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0352	0.0000	0.0352	0.0194	0.0000	0.0194	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0500e-003	0.1686	0.1148	1.9000e-004		4.7300e-003	4.7300e-003		4.7300e-003	4.7300e-003	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	6.0500e-003	0.1686	0.1148	1.9000e-004	0.0352	4.7300e-003	0.0400	0.0194	4.7300e-003	0.0241	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530

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3.2 Site Preparation - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.8000e-004	3.1400e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8601	0.8601	2.0000e-005	0.0000	0.8607
Total	3.8000e-004	2.8000e-004	3.1400e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8601	0.8601	2.0000e-005	0.0000	0.8607

3.3 Grading - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0551	0.0000	0.0551	0.0232	0.0000	0.0232	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0149	0.1608	0.1031	1.9000e-004		7.5400e-003	7.5400e-003		6.9400e-003	6.9400e-003	0.0000	16.9349	16.9349	5.4800e-003	0.0000	17.0718
Total	0.0149	0.1608	0.1031	1.9000e-004	0.0551	7.5400e-003	0.0626	0.0232	6.9400e-003	0.0302	0.0000	16.9349	16.9349	5.4800e-003	0.0000	17.0718

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3.3 Grading - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	3.0000e-004	3.4000e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9318	0.9318	2.0000e-005	0.0000	0.9324
Total	4.1000e-004	3.0000e-004	3.4000e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9318	0.9318	2.0000e-005	0.0000	0.9324

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0215	0.0000	0.0215	9.0600e-003	0.0000	9.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5600e-003	0.1708	0.1234	1.9000e-004		5.0200e-003	5.0200e-003		5.0200e-003	5.0200e-003	0.0000	16.9349	16.9349	5.4800e-003	0.0000	17.0718
Total	6.5600e-003	0.1708	0.1234	1.9000e-004	0.0215	5.0200e-003	0.0265	9.0600e-003	5.0200e-003	0.0141	0.0000	16.9349	16.9349	5.4800e-003	0.0000	17.0718

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3.3 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	3.0000e-004	3.4000e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9318	0.9318	2.0000e-005	0.0000	0.9324
Total	4.1000e-004	3.0000e-004	3.4000e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9318	0.9318	2.0000e-005	0.0000	0.9324

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1574	0.0000	0.1574	0.0795	0.0000	0.0795	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0458	0.4901	0.3589	7.0000e-004		0.0221	0.0221		0.0203	0.0203	0.0000	61.2287	61.2287	0.0198	0.0000	61.7238
Total	0.0458	0.4901	0.3589	7.0000e-004	0.1574	0.0221	0.1795	0.0795	0.0203	0.0999	0.0000	61.2287	61.2287	0.0198	0.0000	61.7238

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3.3 Grading - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	9.8000e-004	0.0113	4.0000e-005	3.8700e-003	3.0000e-005	3.9000e-003	1.0300e-003	3.0000e-005	1.0500e-003	0.0000	3.2479	3.2479	8.0000e-005	0.0000	3.2500
Total	1.3800e-003	9.8000e-004	0.0113	4.0000e-005	3.8700e-003	3.0000e-005	3.9000e-003	1.0300e-003	3.0000e-005	1.0500e-003	0.0000	3.2479	3.2479	8.0000e-005	0.0000	3.2500

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0614	0.0000	0.0614	0.0310	0.0000	0.0310	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.6176	0.4463	7.0000e-004		0.0182	0.0182		0.0182	0.0182	0.0000	61.2286	61.2286	0.0198	0.0000	61.7237
Total	0.0237	0.6176	0.4463	7.0000e-004	0.0614	0.0182	0.0796	0.0310	0.0182	0.0492	0.0000	61.2286	61.2286	0.0198	0.0000	61.7237

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3.3 Grading - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	9.8000e-004	0.0113	4.0000e-005	3.8700e-003	3.0000e-005	3.9000e-003	1.0300e-003	3.0000e-005	1.0500e-003	0.0000	3.2479	3.2479	8.0000e-005	0.0000	3.2500
Total	1.3800e-003	9.8000e-004	0.0113	4.0000e-005	3.8700e-003	3.0000e-005	3.9000e-003	1.0300e-003	3.0000e-005	1.0500e-003	0.0000	3.2479	3.2479	8.0000e-005	0.0000	3.2500

3.4 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1817	1.6631	1.7427	2.8700e-003		0.0862	0.0862		0.0811	0.0811	0.0000	246.7874	246.7874	0.0591	0.0000	248.2655
Total	0.1817	1.6631	1.7427	2.8700e-003		0.0862	0.0862		0.0811	0.0811	0.0000	246.7874	246.7874	0.0591	0.0000	248.2655

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3.4 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0168	0.5765	0.1425	1.5700e-003	0.0396	1.0600e-003	0.0407	0.0114	1.0100e-003	0.0124	0.0000	152.0588	152.0588	9.3400e-003	0.0000	152.2922
Worker	0.1051	0.0747	0.8636	2.7300e-003	0.2945	2.1500e-003	0.2966	0.0782	1.9800e-003	0.0802	0.0000	247.2845	247.2845	6.2100e-003	0.0000	247.4398
Total	0.1218	0.6512	1.0061	4.3000e-003	0.3341	3.2100e-003	0.3373	0.0896	2.9900e-003	0.0926	0.0000	399.3433	399.3433	0.0156	0.0000	399.7320

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1333	2.4843	1.9247	2.8700e-003		0.0922	0.0922		0.0922	0.0922	0.0000	246.7871	246.7871	0.0591	0.0000	248.2652
Total	0.1333	2.4843	1.9247	2.8700e-003		0.0922	0.0922		0.0922	0.0922	0.0000	246.7871	246.7871	0.0591	0.0000	248.2652

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3.4 Building Construction - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0168	0.5765	0.1425	1.5700e-003	0.0396	1.0600e-003	0.0407	0.0114	1.0100e-003	0.0124	0.0000	152.0588	152.0588	9.3400e-003	0.0000	152.2922
Worker	0.1051	0.0747	0.8636	2.7300e-003	0.2945	2.1500e-003	0.2966	0.0782	1.9800e-003	0.0802	0.0000	247.2845	247.2845	6.2100e-003	0.0000	247.4398
Total	0.1218	0.6512	1.0061	4.3000e-003	0.3341	3.2100e-003	0.3373	0.0896	2.9900e-003	0.0926	0.0000	399.3433	399.3433	0.0156	0.0000	399.7320

3.4 Building Construction - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0134	0.1223	0.1381	2.3000e-004		5.9500e-003	5.9500e-003		5.6000e-003	5.6000e-003	0.0000	19.7034	19.7034	4.6900e-003	0.0000	19.8206
Total	0.0134	0.1223	0.1381	2.3000e-004		5.9500e-003	5.9500e-003		5.6000e-003	5.6000e-003	0.0000	19.7034	19.7034	4.6900e-003	0.0000	19.8206

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3.4 Building Construction - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-003	0.0346	0.0102	1.2000e-004	3.1600e-003	4.0000e-005	3.2000e-003	9.1000e-004	4.0000e-005	9.5000e-004	0.0000	11.7703	11.7703	6.5000e-004	0.0000	11.7865
Worker	7.8900e-003	5.3900e-003	0.0636	2.1000e-004	0.0235	1.7000e-004	0.0237	6.2400e-003	1.5000e-004	6.3900e-003	0.0000	19.0003	19.0003	4.5000e-004	0.0000	19.0114
Total	8.8900e-003	0.0400	0.0737	3.3000e-004	0.0267	2.1000e-004	0.0269	7.1500e-003	1.9000e-004	7.3400e-003	0.0000	30.7706	30.7706	1.1000e-003	0.0000	30.7980

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0105	0.1979	0.1535	2.3000e-004		7.2800e-003	7.2800e-003		7.2800e-003	7.2800e-003	0.0000	19.7034	19.7034	4.6900e-003	0.0000	19.8206
Total	0.0105	0.1979	0.1535	2.3000e-004		7.2800e-003	7.2800e-003		7.2800e-003	7.2800e-003	0.0000	19.7034	19.7034	4.6900e-003	0.0000	19.8206

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3.4 Building Construction - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-003	0.0346	0.0102	1.2000e-004	3.1600e-003	4.0000e-005	3.2000e-003	9.1000e-004	4.0000e-005	9.5000e-004	0.0000	11.7703	11.7703	6.5000e-004	0.0000	11.7865
Worker	7.8900e-003	5.3900e-003	0.0636	2.1000e-004	0.0235	1.7000e-004	0.0237	6.2400e-003	1.5000e-004	6.3900e-003	0.0000	19.0003	19.0003	4.5000e-004	0.0000	19.0114
Total	8.8900e-003	0.0400	0.0737	3.3000e-004	0.0267	2.1000e-004	0.0269	7.1500e-003	1.9000e-004	7.3400e-003	0.0000	30.7706	30.7706	1.1000e-003	0.0000	30.7980

3.5 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	2.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0130	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888

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3.5 Paving - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.8000e-004	4.4500e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3306	1.3306	3.0000e-005	0.0000	1.3313
Total	5.5000e-004	3.8000e-004	4.4500e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3306	1.3306	3.0000e-005	0.0000	1.3313

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3100e-003	0.2012	0.1730	2.3000e-004		6.6700e-003	6.6700e-003		6.6700e-003	6.6700e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	2.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0119	0.2012	0.1730	2.3000e-004		6.6700e-003	6.6700e-003		6.6700e-003	6.6700e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888

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3.5 Paving - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.8000e-004	4.4500e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3306	1.3306	3.0000e-005	0.0000	1.3313
Total	5.5000e-004	3.8000e-004	4.4500e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3306	1.3306	3.0000e-005	0.0000	1.3313

3.6 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9135					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8300e-003	0.0261	0.0362	6.0000e-005		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003	0.0000	5.1065	5.1065	3.1000e-004	0.0000	5.1142
Total	0.9174	0.0261	0.0362	6.0000e-005		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003	0.0000	5.1065	5.1065	3.1000e-004	0.0000	5.1142

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3.6 Architectural Coating - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6800e-003	2.5200e-003	0.0297	1.0000e-004	0.0110	8.0000e-005	0.0111	2.9100e-003	7.0000e-005	2.9900e-003	0.0000	8.8703	8.8703	2.1000e-004	0.0000	8.8756
Total	3.6800e-003	2.5200e-003	0.0297	1.0000e-004	0.0110	8.0000e-005	0.0111	2.9100e-003	7.0000e-005	2.9900e-003	0.0000	8.8703	8.8703	2.1000e-004	0.0000	8.8756

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9135					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8300e-003	0.0261	0.0362	6.0000e-005		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003	0.0000	5.1065	5.1065	3.1000e-004	0.0000	5.1141
Total	0.9174	0.0261	0.0362	6.0000e-005		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003	0.0000	5.1065	5.1065	3.1000e-004	0.0000	5.1141

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3.6 Architectural Coating - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6800e-003	2.5200e-003	0.0297	1.0000e-004	0.0110	8.0000e-005	0.0111	2.9100e-003	7.0000e-005	2.9900e-003	0.0000	8.8703	8.8703	2.1000e-004	0.0000	8.8756
Total	3.6800e-003	2.5200e-003	0.0297	1.0000e-004	0.0110	8.0000e-005	0.0111	2.9100e-003	7.0000e-005	2.9900e-003	0.0000	8.8703	8.8703	2.1000e-004	0.0000	8.8756

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Density

Increase Transit Accessibility

Implement NEV Network

Boulders Mixed Use Project - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4199	2.0800	5.3023	0.0215	1.8850	0.0154	1.9004	0.5051	0.0144	0.5194	0.0000	2,022.1476	2,022.1476	0.0898	0.0000	2,024.3916
Unmitigated	0.4392	2.1897	5.7967	0.0238	2.1049	0.0170	2.1220	0.5640	0.0158	0.5798	0.0000	2,240.5629	2,240.5629	0.0980	0.0000	2,243.0127

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,268.28	1,495.26	1371.24	4,494,970	4,025,246
Day-Care Center	392.87	51.23	48.10	428,674	383,877
Enclosed Parking Structure	0.00	0.00	0.00		
General Office Building	249.78	63.35	27.04	616,338	551,931
Parking Lot	0.00	0.00	0.00		
Total	1,910.92	1,609.84	1,446.38	5,539,982	4,961,054

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Day-Care Center	16.60	8.40	6.90	12.70	82.30	5.00	28	58	14
Enclosed Parking Structure	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

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4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
Day-Care Center	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
Enclosed Parking Structure	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
General Office Building	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
Parking Lot	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	145.5691	145.5691	8.9700e-003	1.8600e-003	146.3463
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	229.6848	229.6848	0.0142	2.9300e-003	230.9112
NaturalGas Mitigated	6.9100e-003	0.0594	0.0281	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	68.3539	68.3539	1.3100e-003	1.2500e-003	68.7601
NaturalGas Unmitigated	7.4300e-003	0.0639	0.0302	4.1000e-004		5.1300e-003	5.1300e-003		5.1300e-003	5.1300e-003	0.0000	73.4988	73.4988	1.4100e-003	1.3500e-003	73.9355

Boulders Mixed Use Project - South Coast AQMD Air District, Annual

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.23048e+006	6.6300e-003	0.0567	0.0241	3.6000e-004		4.5800e-003	4.5800e-003		4.5800e-003	4.5800e-003	0.0000	65.6630	65.6630	1.2600e-003	1.2000e-003	66.0532
Day-Care Center	57502.5	3.1000e-004	2.8200e-003	2.3700e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0686	3.0686	6.0000e-005	6.0000e-005	3.0868
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	89335.2	4.8000e-004	4.3800e-003	3.6800e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	4.7673	4.7673	9.0000e-005	9.0000e-005	4.7956
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		7.4200e-003	0.0639	0.0302	4.1000e-004		5.1200e-003	5.1200e-003		5.1200e-003	5.1200e-003	0.0000	73.4988	73.4988	1.4100e-003	1.3500e-003	73.9355

Boulders Mixed Use Project - South Coast AQMD Air District, Annual

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.14434e+006	6.1700e-003	0.0527	0.0224	3.4000e-004		4.2600e-003	4.2600e-003		4.2600e-003	4.2600e-003	0.0000	61.0666	61.0666	1.1700e-003	1.1200e-003	61.4294
Day-Care Center	53477.3	2.9000e-004	2.6200e-003	2.2000e-003	2.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	2.8538	2.8538	5.0000e-005	5.0000e-005	2.8707
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	83081.7	4.5000e-004	4.0700e-003	3.4200e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4336	4.4336	8.0000e-005	8.0000e-005	4.4599
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		6.9100e-003	0.0594	0.0281	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	68.3539	68.3539	1.3000e-003	1.2500e-003	68.7601

Boulders Mixed Use Project - South Coast AQMD Air District, Annual

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	354185	75.6093	4.6600e-003	9.6000e-004	76.0130
Day-Care Center	47932.5	10.2324	6.3000e-004	1.3000e-004	10.2870
Enclosed Parking Structure	469476	100.2210	6.1800e-003	1.2800e-003	100.7562
General Office Building	173264	36.9874	2.2800e-003	4.7000e-004	37.1849
Parking Lot	31080	6.6348	4.1000e-004	8.0000e-005	6.6702
Total		229.6848	0.0142	2.9200e-003	230.9112

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	211414	45.1314	2.7800e-003	5.8000e-004	45.3724
Day-Care Center	27578.9	5.8874	3.6000e-004	8.0000e-005	5.9188
Enclosed Parking Structure	338081	72.1715	4.4500e-003	9.2000e-004	72.5569
General Office Building	97061.2	20.7201	1.2800e-003	2.6000e-004	20.8307
Parking Lot	7770	1.6587	1.0000e-004	2.0000e-005	1.6676
Total		145.5690	8.9700e-003	1.8600e-003	146.3463

6.0 Area Detail**6.1 Mitigation Measures Area**

No Hearths Installed

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1439	0.0279	2.4181	1.3000e-004		0.0134	0.0134		0.0134	0.0134	0.0000	3.9534	3.9534	3.8100e-003	0.0000	4.0487
Unmitigated	1.1439	0.0279	2.4181	1.3000e-004		0.0134	0.0134		0.0134	0.0134	0.0000	3.9534	3.9534	3.8100e-003	0.0000	4.0487

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0914					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9795					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0731	0.0279	2.4181	1.3000e-004		0.0134	0.0134		0.0134	0.0134	0.0000	3.9534	3.9534	3.8100e-003	0.0000	4.0487
Total	1.1439	0.0279	2.4181	1.3000e-004		0.0134	0.0134		0.0134	0.0134	0.0000	3.9534	3.9534	3.8100e-003	0.0000	4.0487

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6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0914					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9795					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0731	0.0279	2.4181	1.3000e-004		0.0134	0.0134		0.0134	0.0134	0.0000	3.9534	3.9534	3.8100e-003	0.0000	4.0487
Total	1.1439	0.0279	2.4181	1.3000e-004		0.0134	0.0134		0.0134	0.0134	0.0000	3.9534	3.9534	3.8100e-003	0.0000	4.0487

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

Boulders Mixed Use Project - South Coast AQMD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	79.6663	0.5306	0.0134	96.9143
Unmitigated	94.0913	0.6629	0.0166	115.6219

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	15.246 / 9.61164	70.0114	0.5008	0.0126	86.2749
Day-Care Center	0.353839 / 0.909872	3.2537	0.0117	3.1000e-004	3.6399
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	4.57664 / 2.80504	20.8261	0.1503	3.7700e-003	25.7072
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		94.0912	0.6629	0.0166	115.6219

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	12.1968 / 9.02533	59.1777	0.4008	0.0101	72.2054
Day-Care Center	0.283071 / 0.854369	2.9030	9.4000e-003	2.5000e-004	3.2135
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	3.66132 / 2.63393	17.5856	0.1203	3.0300e-003	21.4954
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		79.6663	0.5306	0.0134	96.9143

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.2219	0.4268	0.0000	17.8920
Unmitigated	28.8876	1.7072	0.0000	71.5679

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	107.64	21.8500	1.2913	0.0000	54.1323
Day-Care Center	10.72	2.1761	0.1286	0.0000	5.3911
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	23.95	4.8616	0.2873	0.0000	12.0445
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		28.8876	1.7072	0.0000	71.5679

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8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	26.91	5.4625	0.3228	0.0000	13.5331
Day-Care Center	2.68	0.5440	0.0322	0.0000	1.3478
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	5.9875	1.2154	0.0718	0.0000	3.0111
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		7.2219	0.4268	0.0000	17.8920

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

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

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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

Boulders Mixed Use Project

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.75	1000sqft	0.59	25,745.00	0
Day-Care Center	8.25	1000sqft	0.19	8,250.00	0
Enclosed Parking Structure	207.00	Space	1.86	82,800.00	0
Parking Lot	222.00	Space	2.00	88,800.00	0
Apartments Mid Rise	234.00	Dwelling Unit	5.50	234,000.00	669

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	470.63	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

Project Characteristics - CO2 Intensity Factor is based on SCE 2019 Sustainability Report.

Land Use - 234 multi-family DU. 3-story office building including lobby, corridor, apartment leasing, and common areas 25,745 sf. Daycare Center 8,250 sf. 207 covered garage and 222 carport/open parking for total 429 spaces. Gross lot 10.14 acres.

Construction Phase - Construction would begin in December 2021 and completed in April 2023. Grading was extended for balanced 20,600 cy of cut/fill work. Architectural coatings phase extended.

Off-road Equipment - Additional grader added.

Grading -

Vehicle Trips - Multi-Family Residential 1,269 ADT (5.42). General Office Building 247 ADT (9.7). Daycare 393 ADT (47.62). Total 1,909 ADT.

Vehicle Emission Factors - CARB's EMFAC2014 Off-Model Adjustment Factors were applied to GHG EFs gasoline powered vehicles to account for SAFE Vehicle Rule. All criteria EF values are too small to use adjustment factors.

Vehicle Emission Factors - CARB's EMFAC2014 Off-Model Adjustment Factors were applied to GHG EFs gasoline powered vehicles to account for SAFE Vehicle Rule. All criteria EF values are too small to use adjustment factors.

Vehicle Emission Factors - CARB's EMFAC2014 Off-Model Adjustment Factors were applied to GHG EFs gasoline powered vehicles to account for SAFE Vehicle Rule. All criteria EF values are too small to use adjustment factors.

Woodstoves - No wood burning stoves or fireplaces would be incorporated on-site.

Energy Use - Comply with 2019 Title 24 Building Energy Efficiency Standards. Excludes non-Title 24 intensity factors from all land use types, and reduce Title 24 NG intensity by 40 percent for Apts.

Construction Off-road Equipment Mitigation - All off-road equipment over 50 HP will utilize Tier 2 engines. Water exposed areas at least three times daily during construction.

Mobile Land Use Mitigation - The project is a high-density development 24.6 DU/acre. Transit bus station located within 0.5 miles of the project site. NEV being implemented with 41 EV charging stalls.

Area Mitigation - No hearths.

Energy Mitigation - Exceeds 2016 Title 24 by 7 percent for 2019 Title 24, LED or other efficient lighting in 75 percent of the luminaires, and Energy Star appliances in apartment land use subtypes.

Water Mitigation - 2010 CALGreen Code requires a 20% reduction in water use. . Project would utilize low-flow water features and efficient irrigation system.

Waste Mitigation - State CalRecycle 75 percent initiative of solid waste generated be source reduced, recycled or composted.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24E	1.49	0.00
tblEnergyUse	NT24E	2.79	0.00
tblEnergyUse	NT24NG	6,030.00	0.00
tblEnergyUse	NT24NG	1.79	0.00
tblEnergyUse	T24NG	8,764.08	5,258.45
tblFireplaces	NumberGas	198.90	0.00
tblFireplaces	NumberNoFireplace	23.40	0.00

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

tblFireplaces	NumberWood	11.70	0.00
tblLandUse	LandUseSquareFeet	25,750.00	25,745.00
tblLandUse	LotAcreage	6.16	5.50
tblProjectCharacteristics	CO2IntensityFactor	702.44	470.63
tblVehicleEF	LDA	243.88	251.56
tblVehicleEF	LDA	52.52	54.17
tblVehicleEF	LDA	256.98	265.07
tblVehicleEF	LDA	52.52	54.17
tblVehicleEF	LDA	239.64	247.19
tblVehicleEF	LDA	52.52	54.17
tblVehicleEF	LDT1	310.15	319.92
tblVehicleEF	LDT1	65.72	67.79
tblVehicleEF	LDT1	325.67	335.92
tblVehicleEF	LDT1	65.72	67.79
tblVehicleEF	LDT1	304.96	314.57
tblVehicleEF	LDT1	65.72	67.79
tblVehicleEF	LDT2	344.86	355.73
tblVehicleEF	LDT2	73.12	75.42
tblVehicleEF	LDT2	362.72	374.15
tblVehicleEF	LDT2	73.12	75.42
tblVehicleEF	LDT2	338.93	349.61
tblVehicleEF	LDT2	73.12	75.42
tblVehicleTrips	WD_TR	6.65	5.42
tblVehicleTrips	WD_TR	74.06	47.62
tblVehicleTrips	WD_TR	11.03	9.70
tblWoodstoves	NumberCatalytic	11.70	0.00
tblWoodstoves	NumberNoncatalytic	11.70	0.00

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

2.0 Emissions Summary

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.9642	40.5464	21.8324	0.0400	18.2675	2.0459	20.3134	9.9840	1.8823	11.8663	0.0000	3,884.989 5	3,884.989 5	1.1974	0.0000	3,914.923 9
2022	2.8580	21.5803	26.4039	0.0688	6.7200	0.9420	7.6621	3.4120	0.8667	4.2786	0.0000	6,838.346 7	6,838.346 7	0.9329	0.0000	6,857.681 1
2023	46.0542	18.9869	25.4878	0.0674	3.1944	0.7239	3.9183	0.8557	0.6808	1.5366	0.0000	6,690.613 5	6,690.613 5	0.7506	0.0000	6,709.379 4
Maximum	46.0542	40.5464	26.4039	0.0688	18.2675	2.0459	20.3134	9.9840	1.8823	11.8663	0.0000	6,838.346 7	6,838.346 7	1.1974	0.0000	6,857.681 1

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.2856	33.7707	23.6381	0.0400	7.2470	0.9477	8.1947	3.9263	0.9475	4.8739	0.0000	3,884.989 5	3,884.989 5	1.1974	0.0000	3,914.923 9
2022	2.4035	29.2916	28.1132	0.0688	3.1944	0.8952	4.0895	1.3578	0.8932	2.1314	0.0000	6,838.346 7	6,838.346 7	0.9329	0.0000	6,857.681 1
2023	46.0542	27.8867	27.2986	0.0674	3.1944	0.8806	4.0750	0.8557	0.8789	1.7346	0.0000	6,690.613 5	6,690.613 5	0.7506	0.0000	6,709.379 4
Maximum	46.0542	33.7707	28.1132	0.0688	7.2470	0.9477	8.1947	3.9263	0.9475	4.8739	0.0000	6,838.346 7	6,838.346 7	1.1974	0.0000	6,857.681 1

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	5.93	-12.13	-7.22	0.00	51.61	26.63	48.71	56.92	20.71	50.57	0.00	0.00	0.00	0.00	0.00	0.00

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030
Energy	0.0407	0.3501	0.1653	2.2200e-003		0.0281	0.0281		0.0281	0.0281		443.9371	443.9371	8.5100e-003	8.1400e-003	446.5752
Mobile	3.0768	13.7333	39.3328	0.1594	13.7893	0.1097	13.8990	3.6891	0.1019	3.7910		16,541.6796	16,541.6796	0.7009		16,559.2025
Total	9.5697	14.3062	58.8425	0.1626	13.7893	0.2449	14.0342	3.6891	0.2372	3.9263	0.0000	17,020.4793	17,020.4793	0.7430	8.1400e-003	17,041.4807

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030
Energy	0.0379	0.3256	0.1538	2.0600e-003		0.0262	0.0262		0.0262	0.0262		412.8615	412.8615	7.9100e-003	7.5700e-003	415.3150
Mobile	2.9501	13.0808	35.8564	0.1438	12.3483	0.0994	12.4477	3.3036	0.0924	3.3960		14,931.1089	14,931.1089	0.6412		14,947.1387
Total	9.4402	13.6292	55.3545	0.1469	12.3483	0.2327	12.5810	3.3036	0.2257	3.5292	0.0000	15,378.8330	15,378.8330	0.6827	7.5700e-003	15,398.1567

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	1.35	4.73	5.93	9.66	10.45	4.99	10.35	10.45	4.85	10.11	0.00	9.65	9.65	8.12	7.00	9.64

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2021	12/14/2021	5	10	
2	Grading	Grading	12/15/2021	3/8/2022	5	60	
3	Building Construction	Building Construction	3/9/2022	1/24/2023	5	230	
4	Paving	Paving	1/25/2023	2/21/2023	5	20	
5	Architectural Coating	Architectural Coating	2/22/2023	4/18/2023	5	40	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 30

Acres of Paving: 3.86

Residential Indoor: 473,850; Residential Outdoor: 157,950; Non-Residential Indoor: 50,993; Non-Residential Outdoor: 16,998; Striped Parking Area: 10,296 (Architectural Coating – sqft)

OffRoad Equipment

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	252.00	59.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116		3,685.6569	3,685.6569	1.1920		3,715.4573

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.2 Site Preparation - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0760	0.0493	0.6781	2.0000e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		199.3326	199.3326	5.3600e-003		199.4666
Total	0.0760	0.0493	0.6781	2.0000e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		199.3326	199.3326	5.3600e-003		199.4666

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	1.2097	33.7214	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	1.2097	33.7214	22.9600	0.0380	7.0458	0.9462	7.9920	3.8730	0.9462	4.8191	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.2 Site Preparation - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0760	0.0493	0.6781	2.0000e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		199.3326	199.3326	5.3600e-003		199.4666
Total	0.0760	0.0493	0.6781	2.0000e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		199.3326	199.3326	5.3600e-003		199.4666

3.3 Grading - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895,1495
Total	2.2903	24.7367	15.8575	0.0296	6.5523	1.1599	7.7123	3.3675	1.0671	4.4346		2,871.9285	2,871.9285	0.9288		2,895,1495

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.3 Grading - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0633	0.0411	0.5651	1.6700e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1400e-003	0.0456		166.1105	166.1105	4.4700e-003		166.2222
Total	0.0633	0.0411	0.5651	1.6700e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1400e-003	0.0456		166.1105	166.1105	4.4700e-003		166.2222

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.0093	26.2791	18.9906	0.0296		0.7725	0.7725		0.7725	0.7725	0.0000	2,871.9285	2,871.9285	0.9288		2,895,1495
Total	1.0093	26.2791	18.9906	0.0296	2.5554	0.7725	3.3279	1.3133	0.7725	2.0858	0.0000	2,871.9285	2,871.9285	0.9288		2,895,1495

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.3 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0633	0.0411	0.5651	1.6700e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1400e-003	0.0456		166.1105	166.1105	4.4700e-003		166.2222
Total	0.0633	0.0411	0.5651	1.6700e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1400e-003	0.0456		166.1105	166.1105	4.4700e-003		166.2222

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	6.5523	0.9409	7.4932	3.3675	0.8656	4.2331		2,872.0464	2,872.0464	0.9289		2,895.2684

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.3 Grading - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0594	0.0371	0.5225	1.6100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		160.1586	160.1586	4.0400e-003		160.2595
Total	0.0594	0.0371	0.5225	1.6100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		160.1586	160.1586	4.0400e-003		160.2595

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.0093	26.2791	18.9906	0.0297		0.7725	0.7725		0.7725	0.7725	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.0093	26.2791	18.9906	0.0297	2.5554	0.7725	3.3279	1.3133	0.7725	2.0858	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.3 Grading - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0594	0.0371	0.5225	1.6100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		160.1586	160.1586	4.0400e-003		160.2595
Total	0.0594	0.0371	0.5225	1.6100e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		160.1586	160.1586	4.0400e-003		160.2595

3.4 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.4 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1540	5.3415	1.2620	0.0149	0.3776	9.8200e-003	0.3874	0.1087	9.3900e-003	0.1181		1,593.3488	1,593.3488	0.0936		1,595.6890
Worker	0.9978	0.6232	8.7785	0.0270	2.8168	0.0201	2.8369	0.7470	0.0186	0.7656		2,690.6643	2,690.6643	0.0678		2,692.3599
Total	1.1518	5.9646	10.0405	0.0419	3.1944	0.0300	3.2243	0.8557	0.0279	0.8837		4,284.0131	4,284.0131	0.1614		4,288.0489

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2517	23.3270	18.0727	0.0269		0.8652	0.8652		0.8652	0.8652	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.2517	23.3270	18.0727	0.0269		0.8652	0.8652		0.8652	0.8652	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.4 Building Construction - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1540	5.3415	1.2620	0.0149	0.3776	9.8200e-003	0.3874	0.1087	9.3900e-003	0.1181		1,593.3488	1,593.3488	0.0936		1,595.6890
Worker	0.9978	0.6232	8.7785	0.0270	2.8168	0.0201	2.8369	0.7470	0.0186	0.7656		2,690.6643	2,690.6643	0.0678		2,692.3599
Total	1.1518	5.9646	10.0405	0.0419	3.1944	0.0300	3.2243	0.8557	0.0279	0.8837		4,284.0131	4,284.0131	0.1614		4,288.0489

3.4 Building Construction - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.4 Building Construction - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1149	4.0382	1.1370	0.0144	0.3776	4.5400e-003	0.3821	0.1087	4.3400e-003	0.1131		1,545.0195	1,545.0195	0.0816		1,547.0601
Worker	0.9382	0.5639	8.1067	0.0260	2.8168	0.0196	2.8364	0.7470	0.0181	0.7651		2,590.3840	2,590.3840	0.0612		2,591.9133
Total	1.0530	4.6021	9.2438	0.0404	3.1944	0.0242	3.2185	0.8557	0.0224	0.8781		4,135.4036	4,135.4036	0.1428		4,138.9733

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2295	23.2846	18.0549	0.0269		0.8565	0.8565		0.8565	0.8565	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.2295	23.2846	18.0549	0.0269		0.8565	0.8565		0.8565	0.8565	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.4 Building Construction - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1149	4.0382	1.1370	0.0144	0.3776	4.5400e-003	0.3821	0.1087	4.3400e-003	0.1131		1,545.0195	1,545.0195	0.0816		1,547.0601
Worker	0.9382	0.5639	8.1067	0.0260	2.8168	0.0196	2.8364	0.7470	0.0181	0.7651		2,590.3840	2,590.3840	0.0612		2,591.9133
Total	1.0530	4.6021	9.2438	0.0404	3.1944	0.0242	3.2185	0.8557	0.0224	0.8781		4,135.4036	4,135.4036	0.1428		4,138.9733

3.5 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2947	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.5 Paving - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0336	0.4825	1.5500e-003	0.1677	1.1700e-003	0.1688	0.0445	1.0800e-003	0.0455		154.1895	154.1895	3.6400e-003		154.2806
Total	0.0558	0.0336	0.4825	1.5500e-003	0.1677	1.1700e-003	0.1688	0.0445	1.0800e-003	0.0455		154.1895	154.1895	3.6400e-003		154.2806

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9311	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1931	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.5 Paving - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0336	0.4825	1.5500e-003	0.1677	1.1700e-003	0.1688	0.0445	1.0800e-003	0.0455		154.1895	154.1895	3.6400e-003		154.2806
Total	0.0558	0.0336	0.4825	1.5500e-003	0.1677	1.1700e-003	0.1688	0.0445	1.0800e-003	0.0455		154.1895	154.1895	3.6400e-003		154.2806

3.6 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.6764					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	45.8681	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.6 Architectural Coating - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1861	0.1119	1.6085	5.1600e-003	0.5589	3.8900e-003	0.5628	0.1482	3.5800e-003	0.1518		513.9651	513.9651	0.0121		514.2685
Total	0.1861	0.1119	1.6085	5.1600e-003	0.5589	3.8900e-003	0.5628	0.1482	3.5800e-003	0.1518		513.9651	513.9651	0.0121		514.2685

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.6764					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	45.8681	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

3.6 Architectural Coating - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1861	0.1119	1.6085	5.1600e-003	0.5589	3.8900e-003	0.5628	0.1482	3.5800e-003	0.1518		513.9651	513.9651	0.0121		514.2685
Total	0.1861	0.1119	1.6085	5.1600e-003	0.5589	3.8900e-003	0.5628	0.1482	3.5800e-003	0.1518		513.9651	513.9651	0.0121		514.2685

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Density

Increase Transit Accessibility

Implement NEV Network

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.9501	13.0808	35.8564	0.1438	12.3483	0.0994	12.4477	3.3036	0.0924	3.3960		14,931.10 89	14,931.10 89	0.6412		14,947.13 87
Unmitigated	3.0768	13.7333	39.3328	0.1594	13.7893	0.1097	13.8990	3.6891	0.1019	3.7910		16,541.67 96	16,541.67 96	0.7009		16,559.20 25

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,268.28	1,495.26	1371.24	4,494,970	4,025,246
Day-Care Center	392.87	51.23	48.10	428,674	383,877
Enclosed Parking Structure	0.00	0.00	0.00		
General Office Building	249.78	63.35	27.04	616,338	551,931
Parking Lot	0.00	0.00	0.00		
Total	1,910.92	1,609.84	1,446.38	5,539,982	4,961,054

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Day-Care Center	16.60	8.40	6.90	12.70	82.30	5.00	28	58	14
Enclosed Parking Structure	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
Day-Care Center	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
Enclosed Parking Structure	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
General Office Building	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
Parking Lot	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0379	0.3256	0.1538	2.0600e-003		0.0262	0.0262		0.0262	0.0262		412.8615	412.8615	7.9100e-003	7.5700e-003	415.3150
NaturalGas Unmitigated	0.0407	0.3501	0.1653	2.2200e-003		0.0281	0.0281		0.0281	0.0281		443.9371	443.9371	8.5100e-003	8.1400e-003	446.5752

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	3371.17	0.0364	0.3107	0.1322	1.9800e-003		0.0251	0.0251		0.0251	0.0251		396.6083	396.6083	7.6000e-003	7.2700e-003	398.9652
Day-Care Center	157.541	1.7000e-003	0.0155	0.0130	9.0000e-005		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003		18.5343	18.5343	3.6000e-004	3.4000e-004	18.6444
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	244.754	2.6400e-003	0.0240	0.0202	1.4000e-004		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003		28.7946	28.7946	5.5000e-004	5.3000e-004	28.9657
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0407	0.3501	0.1653	2.2100e-003		0.0281	0.0281		0.0281	0.0281		443.9371	443.9371	8.5100e-003	8.1400e-003	446.5752

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	3.13519	0.0338	0.2889	0.1230	1.8400e-003		0.0234	0.0234		0.0234	0.0234		368.8457	368.8457	7.0700e-003	6.7600e-003	371.0376
Day-Care Center	0.146513	1.5800e-003	0.0144	0.0121	9.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003		17.2369	17.2369	3.3000e-004	3.2000e-004	17.3393
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.227621	2.4500e-003	0.0223	0.0188	1.3000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003		26.7790	26.7790	5.1000e-004	4.9000e-004	26.9381
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0378	0.3256	0.1538	2.0600e-003		0.0262	0.0262		0.0262	0.0262		412.8615	412.8615	7.9100e-003	7.5700e-003	415.3150

6.0 Area Detail**6.1 Mitigation Measures Area**

No Hearths Installed

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030
Unmitigated	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.3671					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5846	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071		34.8626	34.8626	0.0336		35.7030
Total	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.3671					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5846	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071		34.8626	34.8626	0.0336		35.7030
Total	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Boulders Mixed Use Project - South Coast AQMD Air District, Summer

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Boilers

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

Equipment Type	Number
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11.0 Vegetation

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

Boulders Mixed Use Project

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.75	1000sqft	0.59	25,745.00	0
Day-Care Center	8.25	1000sqft	0.19	8,250.00	0
Enclosed Parking Structure	207.00	Space	1.86	82,800.00	0
Parking Lot	222.00	Space	2.00	88,800.00	0
Apartments Mid Rise	234.00	Dwelling Unit	5.50	234,000.00	669

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	470.63	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

Project Characteristics - CO2 Intensity Factor is based on SCE 2019 Sustainability Report.

Land Use - 234 multi-family DU. 3-story office building including lobby, corridor, apartment leasing, and common areas 25,745 sf. Daycare Center 8,250 sf. 207 covered garage and 222 carport/open parking for total 429 spaces. Gross lot 10.14 acres.

Construction Phase - Construction would begin in December 2021 and completed in April 2023. Grading was extended for balanced 20,600 cy of cut/fill work. Architectural coatings phase extended.

Off-road Equipment - Additional grader added.

Grading -

Vehicle Trips - Multi-Family Residential 1,269 ADT (5.42). General Office Building 247 ADT (9.7). Daycare 393 ADT (47.62). Total 1,909 ADT.

Vehicle Emission Factors - CARB's EMFAC2014 Off-Model Adjustment Factors were applied to GHG EFs gasoline powered vehicles to account for SAFE Vehicle Rule. All criteria EF values are too small to use adjustment factors.

Vehicle Emission Factors - CARB's EMFAC2014 Off-Model Adjustment Factors were applied to GHG EFs gasoline powered vehicles to account for SAFE Vehicle Rule. All criteria EF values are too small to use adjustment factors.

Vehicle Emission Factors - CARB's EMFAC2014 Off-Model Adjustment Factors were applied to GHG EFs gasoline powered vehicles to account for SAFE Vehicle Rule. All criteria EF values are too small to use adjustment factors.

Woodstoves - No wood burning stoves or fireplaces would be incorporated on-site.

Energy Use - Comply with 2019 Title 24 Building Energy Efficiency Standards. Excludes non-Title 24 intensity factors from all land use types, and reduce Title 24 NG intensity by 40 percent for Apts.

Construction Off-road Equipment Mitigation - All off-road equipment over 50 HP will utilize Tier 2 engines. Water exposed areas at least three times daily during construction.

Mobile Land Use Mitigation - The project is a high-density development 24.6 DU/acre. Transit bus station located within 0.5 miles of the project site. NEV being implemented with 41 EV charging stalls.

Area Mitigation - No hearths.

Energy Mitigation - Exceeds 2016 Title 24 by 7 percent for 2019 Title 24, LED or other efficient lighting in 75 percent of the luminaires, and Energy Star appliances in apartment land use subtypes.

Water Mitigation - 2010 CALGreen Code requires a 20% reduction in water use. . Project would utilize low-flow water features and efficient irrigation system.

Waste Mitigation - State CalRecycle 75 percent initiative of solid waste generated be source reduced, recycled or composted.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	20.00	40.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24E	1.49	0.00
tblEnergyUse	NT24E	2.79	0.00
tblEnergyUse	NT24NG	6,030.00	0.00
tblEnergyUse	NT24NG	1.79	0.00
tblEnergyUse	T24NG	8,764.08	5,258.45
tblFireplaces	NumberGas	198.90	0.00
tblFireplaces	NumberNoFireplace	23.40	0.00

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

tblFireplaces	NumberWood	11.70	0.00
tblLandUse	LandUseSquareFeet	25,750.00	25,745.00
tblLandUse	LotAcreage	6.16	5.50
tblProjectCharacteristics	CO2IntensityFactor	702.44	470.63
tblVehicleEF	LDA	243.88	251.56
tblVehicleEF	LDA	52.52	54.17
tblVehicleEF	LDA	256.98	265.07
tblVehicleEF	LDA	52.52	54.17
tblVehicleEF	LDA	239.64	247.19
tblVehicleEF	LDA	52.52	54.17
tblVehicleEF	LDT1	310.15	319.92
tblVehicleEF	LDT1	65.72	67.79
tblVehicleEF	LDT1	325.67	335.92
tblVehicleEF	LDT1	65.72	67.79
tblVehicleEF	LDT1	304.96	314.57
tblVehicleEF	LDT1	65.72	67.79
tblVehicleEF	LDT2	344.86	355.73
tblVehicleEF	LDT2	73.12	75.42
tblVehicleEF	LDT2	362.72	374.15
tblVehicleEF	LDT2	73.12	75.42
tblVehicleEF	LDT2	338.93	349.61
tblVehicleEF	LDT2	73.12	75.42
tblVehicleTrips	WD_TR	6.65	5.42
tblVehicleTrips	WD_TR	74.06	47.62
tblVehicleTrips	WD_TR	11.03	9.70
tblWoodstoves	NumberCatalytic	11.70	0.00
tblWoodstoves	NumberNoncatalytic	11.70	0.00

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

2.0 Emissions Summary

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.9712	40.5510	21.7636	0.0399	18.2675	2.0459	20.3134	9.9840	1.8823	11.8663	0.0000	3,872.077 1	3,872.077 1	1.1970	0.0000	3,902.002 4
2022	2.9614	21.6178	25.6507	0.0667	6.7200	0.9420	7.6621	3.4120	0.8667	4.2786	0.0000	6,617.591 5	6,617.591 5	0.9326	0.0000	6,636.980 9
2023	46.0726	19.0140	24.7509	0.0653	3.1944	0.7241	3.9185	0.8557	0.6810	1.5368	0.0000	6,478.410 7	6,478.410 7	0.7517	0.0000	6,497.204 1
Maximum	46.0726	40.5510	25.6507	0.0667	18.2675	2.0459	20.3134	9.9840	1.8823	11.8663	0.0000	6,617.591 5	6,617.591 5	1.1970	0.0000	6,636.980 9

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.2927	33.7753	23.5694	0.0399	7.2470	0.9477	8.1947	3.9263	0.9475	4.8739	0.0000	3,872.077 1	3,872.077 1	1.1970	0.0000	3,902.002 4
2022	2.5069	29.3291	27.3601	0.0667	3.1944	0.8955	4.0899	1.3578	0.8935	2.1314	0.0000	6,617.591 5	6,617.591 5	0.9326	0.0000	6,636.980 9
2023	46.0726	27.9138	26.5618	0.0653	3.1944	0.8808	4.0752	0.8557	0.8791	1.7348	0.0000	6,478.410 7	6,478.410 7	0.7517	0.0000	6,497.204 1
Maximum	46.0726	33.7753	27.3601	0.0667	7.2470	0.9477	8.1947	3.9263	0.9475	4.8739	0.0000	6,617.591 5	6,617.591 5	1.1970	0.0000	6,636.980 9

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	5.91	-12.11	-7.38	0.00	51.61	26.62	48.71	56.92	20.70	50.57	0.00	0.00	0.00	0.00	0.00	0.00

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030
Energy	0.0407	0.3501	0.1653	2.2200e-003		0.0281	0.0281		0.0281	0.0281		443.9371	443.9371	8.5100e-003	8.1400e-003	446.5752
Mobile	2.9100	13.9556	36.7781	0.1508	13.7893	0.1102	13.8995	3.6891	0.1024	3.7915		15,666.9368	15,666.9368	0.7015		15,684.4737
Total	9.4030	14.5285	56.2878	0.1541	13.7893	0.2454	14.0347	3.6891	0.2377	3.9268	0.0000	16,145.7365	16,145.7365	0.7436	8.1400e-003	16,166.7519

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030
Energy	0.0379	0.3256	0.1538	2.0600e-003		0.0262	0.0262		0.0262	0.0262		412.8615	412.8615	7.9100e-003	7.5700e-003	415.3150
Mobile	2.7869	13.2643	33.6904	0.1361	12.3483	0.0999	12.4482	3.3036	0.0929	3.3965		14,136.1381	14,136.1381	0.6435		14,152.2246
Total	9.2770	13.8126	53.1886	0.1392	12.3483	0.2332	12.5815	3.3036	0.2262	3.5297	0.0000	14,583.8622	14,583.8622	0.6850	7.5700e-003	14,603.2425

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	1.34	4.93	5.51	9.68	10.45	4.98	10.35	10.45	4.84	10.11	0.00	9.67	9.67	7.88	7.00	9.67

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2021	12/14/2021	5	10	
2	Grading	Grading	12/15/2021	3/8/2022	5	60	
3	Building Construction	Building Construction	3/9/2022	1/24/2023	5	230	
4	Paving	Paving	1/25/2023	2/21/2023	5	20	
5	Architectural Coating	Architectural Coating	2/22/2023	4/18/2023	5	40	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 30

Acres of Paving: 3.86

Residential Indoor: 473,850; Residential Outdoor: 157,950; Non-Residential Indoor: 50,993; Non-Residential Outdoor: 16,998; Striped Parking Area: 10,296 (Architectural Coating – sqft)

OffRoad Equipment

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	252.00	59.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	3.8882	40.4971	21.1543	0.0380	18.0663	2.0445	20.1107	9.9307	1.8809	11.8116		3,685.6569	3,685.6569	1.1920		3,715.4573

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.2 Site Preparation - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0830	0.0539	0.6094	1.8700e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		186.4202	186.4202	5.0000e-003		186.5451
Total	0.0830	0.0539	0.6094	1.8700e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		186.4202	186.4202	5.0000e-003		186.5451

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	1.2097	33.7214	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	1.2097	33.7214	22.9600	0.0380	7.0458	0.9462	7.9920	3.8730	0.9462	4.8191	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.2 Site Preparation - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0830	0.0539	0.6094	1.8700e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		186.4202	186.4202	5.0000e-003		186.5451
Total	0.0830	0.0539	0.6094	1.8700e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		186.4202	186.4202	5.0000e-003		186.5451

3.3 Grading - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895,1495
Total	2.2903	24.7367	15.8575	0.0296	6.5523	1.1599	7.7123	3.3675	1.0671	4.4346		2,871.9285	2,871.9285	0.9288		2,895,1495

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.3 Grading - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0692	0.0450	0.5078	1.5600e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1400e-003	0.0456		155.3502	155.3502	4.1600e-003		155.4543
Total	0.0692	0.0450	0.5078	1.5600e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1400e-003	0.0456		155.3502	155.3502	4.1600e-003		155.4543

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.0093	26.2791	18.9906	0.0296		0.7725	0.7725		0.7725	0.7725	0.0000	2,871.9285	2,871.9285	0.9288		2,895,1495
Total	1.0093	26.2791	18.9906	0.0296	2.5554	0.7725	3.3279	1.3133	0.7725	2.0858	0.0000	2,871.9285	2,871.9285	0.9288		2,895,1495

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.3 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0692	0.0450	0.5078	1.5600e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1400e-003	0.0456		155.3502	155.3502	4.1600e-003		155.4543
Total	0.0692	0.0450	0.5078	1.5600e-003	0.1677	1.2300e-003	0.1689	0.0445	1.1400e-003	0.0456		155.3502	155.3502	4.1600e-003		155.4543

3.3 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.9486	20.8551	15.2727	0.0297	6.5523	0.9409	7.4932	3.3675	0.8656	4.2331		2,872.0464	2,872.0464	0.9289		2,895.2684

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.3 Grading - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0651	0.0406	0.4687	1.5000e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		149.7805	149.7805	3.7600e-003		149.8745
Total	0.0651	0.0406	0.4687	1.5000e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		149.7805	149.7805	3.7600e-003		149.8745

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.0093	26.2791	18.9906	0.0297		0.7725	0.7725		0.7725	0.7725	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	1.0093	26.2791	18.9906	0.0297	2.5554	0.7725	3.3279	1.3133	0.7725	2.0858	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.3 Grading - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0651	0.0406	0.4687	1.5000e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		149.7805	149.7805	3.7600e-003		149.8745
Total	0.0651	0.0406	0.4687	1.5000e-003	0.1677	1.2000e-003	0.1689	0.0445	1.1000e-003	0.0456		149.7805	149.7805	3.7600e-003		149.8745

3.4 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.4 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1621	5.3201	1.4130	0.0145	0.3776	0.0101	0.3878	0.1087	9.7000e-003	0.1184		1,546.9459	1,546.9459	0.1005		1,549.4576
Worker	1.0930	0.6820	7.8743	0.0252	2.8168	0.0201	2.8369	0.7470	0.0186	0.7656		2,516.3120	2,516.3120	0.0632		2,517.8911
Total	1.2551	6.0021	9.2873	0.0397	3.1944	0.0303	3.2247	0.8557	0.0283	0.8840		4,063.2580	4,063.2580	0.1636		4,067.3487

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2517	23.3270	18.0727	0.0269		0.8652	0.8652		0.8652	0.8652	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	1.2517	23.3270	18.0727	0.0269		0.8652	0.8652		0.8652	0.8652	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.4 Building Construction - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1621	5.3201	1.4130	0.0145	0.3776	0.0101	0.3878	0.1087	9.7000e-003	0.1184		1,546.9459	1,546.9459	0.1005		1,549.4576
Worker	1.0930	0.6820	7.8743	0.0252	2.8168	0.0201	2.8369	0.7470	0.0186	0.7656		2,516.3120	2,516.3120	0.0632		2,517.8911
Total	1.2551	6.0021	9.2873	0.0397	3.1944	0.0303	3.2247	0.8557	0.0283	0.8840		4,063.2580	4,063.2580	0.1636		4,067.3487

3.4 Building Construction - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.4 Building Construction - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1210	4.0123	1.2494	0.0140	0.3776	4.7600e-003	0.3824	0.1087	4.5500e-003	0.1133		1,500.7338	1,500.7338	0.0870		1,502.9083
Worker	1.0308	0.6169	7.2575	0.0243	2.8168	0.0196	2.8364	0.7470	0.0181	0.7651		2,422.4670	2,422.4670	0.0569		2,423.8897
Total	1.1518	4.6292	8.5069	0.0383	3.1944	0.0244	3.2188	0.8557	0.0226	0.8783		3,923.2008	3,923.2008	0.1439		3,926.7980

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2295	23.2846	18.0549	0.0269		0.8565	0.8565		0.8565	0.8565	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.2295	23.2846	18.0549	0.0269		0.8565	0.8565		0.8565	0.8565	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.4 Building Construction - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1210	4.0123	1.2494	0.0140	0.3776	4.7600e-003	0.3824	0.1087	4.5500e-003	0.1133		1,500.7338	1,500.7338	0.0870		1,502.9083
Worker	1.0308	0.6169	7.2575	0.0243	2.8168	0.0196	2.8364	0.7470	0.0181	0.7651		2,422.4670	2,422.4670	0.0569		2,423.8897
Total	1.1518	4.6292	8.5069	0.0383	3.1944	0.0244	3.2188	0.8557	0.0226	0.8783		3,923.2008	3,923.2008	0.1439		3,926.7980

3.5 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2947	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.5 Paving - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0614	0.0367	0.4320	1.4500e-003	0.1677	1.1700e-003	0.1688	0.0445	1.0800e-003	0.0455		144.1945	144.1945	3.3900e-003		144.2792
Total	0.0614	0.0367	0.4320	1.4500e-003	0.1677	1.1700e-003	0.1688	0.0445	1.0800e-003	0.0455		144.1945	144.1945	3.3900e-003		144.2792

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9311	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1931	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.5 Paving - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0614	0.0367	0.4320	1.4500e-003	0.1677	1.1700e-003	0.1688	0.0445	1.0800e-003	0.0455		144.1945	144.1945	3.3900e-003		144.2792
Total	0.0614	0.0367	0.4320	1.4500e-003	0.1677	1.1700e-003	0.1688	0.0445	1.0800e-003	0.0455		144.1945	144.1945	3.3900e-003		144.2792

3.6 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.6764					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	45.8681	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.6 Architectural Coating - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2045	0.1224	1.4400	4.8200e-003	0.5589	3.8900e-003	0.5628	0.1482	3.5800e-003	0.1518		480.6482	480.6482	0.0113		480.9305
Total	0.2045	0.1224	1.4400	4.8200e-003	0.5589	3.8900e-003	0.5628	0.1482	3.5800e-003	0.1518		480.6482	480.6482	0.0113		480.9305

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.6764					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	45.8681	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

3.6 Architectural Coating - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2045	0.1224	1.4400	4.8200e-003	0.5589	3.8900e-003	0.5628	0.1482	3.5800e-003	0.1518		480.6482	480.6482	0.0113		480.9305
Total	0.2045	0.1224	1.4400	4.8200e-003	0.5589	3.8900e-003	0.5628	0.1482	3.5800e-003	0.1518		480.6482	480.6482	0.0113		480.9305

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Density

Increase Transit Accessibility

Implement NEV Network

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.7869	13.2643	33.6904	0.1361	12.3483	0.0999	12.4482	3.3036	0.0929	3.3965		14,136.13 81	14,136.13 81	0.6435		14,152.22 46
Unmitigated	2.9100	13.9556	36.7781	0.1508	13.7893	0.1102	13.8995	3.6891	0.1024	3.7915		15,666.93 68	15,666.93 68	0.7015		15,684.47 37

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,268.28	1,495.26	1371.24	4,494,970	4,025,246
Day-Care Center	392.87	51.23	48.10	428,674	383,877
Enclosed Parking Structure	0.00	0.00	0.00		
General Office Building	249.78	63.35	27.04	616,338	551,931
Parking Lot	0.00	0.00	0.00		
Total	1,910.92	1,609.84	1,446.38	5,539,982	4,961,054

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Day-Care Center	16.60	8.40	6.90	12.70	82.30	5.00	28	58	14
Enclosed Parking Structure	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
Day-Care Center	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
Enclosed Parking Structure	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
General Office Building	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845
Parking Lot	0.550809	0.042355	0.203399	0.115606	0.014562	0.005806	0.021810	0.035336	0.002134	0.001736	0.004891	0.000712	0.000845

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0379	0.3256	0.1538	2.0600e-003		0.0262	0.0262		0.0262	0.0262		412.8615	412.8615	7.9100e-003	7.5700e-003	415.3150
NaturalGas Unmitigated	0.0407	0.3501	0.1653	2.2200e-003		0.0281	0.0281		0.0281	0.0281		443.9371	443.9371	8.5100e-003	8.1400e-003	446.5752

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	3371.17	0.0364	0.3107	0.1322	1.9800e-003		0.0251	0.0251		0.0251	0.0251		396.6083	396.6083	7.6000e-003	7.2700e-003	398.9652
Day-Care Center	157.541	1.7000e-003	0.0155	0.0130	9.0000e-005		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003		18.5343	18.5343	3.6000e-004	3.4000e-004	18.6444
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	244.754	2.6400e-003	0.0240	0.0202	1.4000e-004		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003		28.7946	28.7946	5.5000e-004	5.3000e-004	28.9657
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0407	0.3501	0.1653	2.2100e-003		0.0281	0.0281		0.0281	0.0281		443.9371	443.9371	8.5100e-003	8.1400e-003	446.5752

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	3.13519	0.0338	0.2889	0.1230	1.8400e-003		0.0234	0.0234		0.0234	0.0234		368.8457	368.8457	7.0700e-003	6.7600e-003	371.0376
Day-Care Center	0.146513	1.5800e-003	0.0144	0.0121	9.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003		17.2369	17.2369	3.3000e-004	3.2000e-004	17.3393
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.227621	2.4500e-003	0.0223	0.0188	1.3000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003		26.7790	26.7790	5.1000e-004	4.9000e-004	26.9381
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0378	0.3256	0.1538	2.0600e-003		0.0262	0.0262		0.0262	0.0262		412.8615	412.8615	7.9100e-003	7.5700e-003	415.3150

6.0 Area Detail**6.1 Mitigation Measures Area**

No Hearths Installed

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030
Unmitigated	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.3671					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5846	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071		34.8626	34.8626	0.0336		35.7030
Total	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.3671					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5846	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071		34.8626	34.8626	0.0336		35.7030
Total	6.4522	0.2228	19.3444	1.0200e-003		0.1071	0.1071		0.1071	0.1071	0.0000	34.8626	34.8626	0.0336	0.0000	35.7030

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Boulders Mixed Use Project - South Coast AQMD Air District, Winter

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation
