HELIX Environmental Planning

Mercado Apartments Project

PTS 696585

Air Quality Technical Report

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Prepared for:

MAAC Development
1355 Third Avenue
San Diego, CA 91911

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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ACRONYMS AND ABBREVIATIONS

ADT	average daily trips
AQIA	Air Quality Impact Assessment
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CO	carbon monoxide
CPIOZ	Community Plan Implementation Overlay Zone
DPM	diesel particulate matter
H_2S	hydrogen sulfide
HRA	health risk assessment
LOS	Level of Service
MEI	maximally exposed individual
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NDP	Neighborhood Development Permit
NO	nitrogen oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	ozone
Pb	lead
PCE	perchloroethylene
PM	particulate matter
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
RAQS	Regional Air Quality Strategy
ROG	reactive organic gas

ACRONYMS AND ABBREVIATIONS (continued)

SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDP	Site Development Permit
SF	square foot/feet
SO_2	sulfur dioxide
TAC	toxic air contaminant
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality impacts during construction and operation of the proposed Mercado Apartments Project (Project), located in the city of San Diego. The Project entails redevelopment of a small portion of an existing multifamily residential complex into one new four-story structure, containing six substructures totaling 100,169 SF, for 92 units of affordable housing residential apartments. The Project also includes 5,886 SF of outdoor courtyard and plaza space. Parking is not included as part of the Project; no development is proposed outside currently paved/developed areas.

The Project would result in emissions of air pollutants during both construction and operation. Construction best management practices (BMPs) would be implemented as part of the Project, including measures to minimize fugitive dust emissions, such as watering twice per day during grading and stabilizing storage piles. The Project would comply with San Diego Air Pollution Control District (SDAPCD) Rule 55, which requires that no visible dust be emitted beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period and would incorporate measures to minimize the track-out/carry-out of visible roadway dust. Emissions of all criteria pollutants would be below the daily thresholds during construction, and short-term construction air quality emissions impacts would be less than significant. Similarly, emissions of criteria pollutants would be below the daily thresholds during operations, and long-term operational air quality emissions impacts would be less than significant.

Development of the Project would be consistent with SDAPCD's 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County and the Regional Air Quality Strategy, and would not result in cumulatively considerable emissions of nonattainment air pollutants that would exceed the screening level thresholds.

The Project would not result in an increase in traffic that could result in a carbon monoxide (CO) hot spot. Construction and operation of the Project also would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants (TACs). In addition, evaluation of potential odors from the Project indicated that associated impacts would be less than significant.

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1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report analyzes potential air quality impacts associated with the proposed Mercado Apartments Project (Project) and includes an evaluation of existing conditions in the Project vicinity and assessment of potential impacts associated with Project construction and operations.

1.2 PROJECT LOCATION

The Project is located at 2001 Newton Avenue in the Barrio Logan Neighborhood of the City of San Diego. The Project site is located within the Barrio Logan Community Plan, south of Downtown San Diego and west of Interstate (I-)5 (Figure 1, Regional Location). The Project site is bounded by Main Street to the southwest, Evans Street to the southeast, Newton Avenue to the northeast and multi-family residences to the northwest (Figure 2, Project Vicinity). The surrounding land uses are multi-family residences, the Coronado bridge, and Chicano Park to the north, multifamily residences to the east, and industrial and commercial uses to the south, east, and west. The Project site is located on one parcel (Assessor's Parcel Number [APN] 209-121-01-00) totaling 4.34 acres. The Project site has a General Plan land use designation of Residential and a Barrio Logan Community Plan land use designation of 1991 Barrio Logan Redevelopment Project Area. The Project is zoned as BLPD-REDEVLP-SUBD, or the Barrio Logan Redevelopment Subdivision.

1.3 PROJECT DESCRIPTION

The Project site is a 0.98-acre portion of a 4.34-acre site currently occupied by multi-family residential housing and parking lots. The Project proposes to demolish two existing two story buildings on the property totaling approximately 12,000 square feet (SF), as well as parking lot and trash enclosure. The Project would construct one new four-story structure encompassing six sub structures, totaling 100,169 SF, for 92 units of affordable housing residential apartments (Figure 3, Site Plan). The Project also includes 5,886 SF of outdoor courtyard and plaza space. Parking is not included as part of the Project; no development is proposed outside currently paved/developed areas. Direct site access for pedestrians would be provided by the new main entry off Evans Street, and two new entries off Main Street. A vehicular service access driveway would also be provided off Main Street. Other vehicular access would be provided by an existing driveway off Newton Street, which provides access to the existing apartment complex surrounding the project site. The existing driveway off Evans Street would be removed as part of the Project. Grading is estimated to require even cut and fill of 750 cubic yards over a 42,790 square-foot area, with no export. The Project is proposed to be constructed in one phase, with construction assumed to be completed in 2026.

1.4 CONSTRUCTION BEST MANAGEMENT PRACTICES

The Project would incorporate best management practices (BMPs) during construction to reduce emissions of fugitive dust. San Diego Air Pollution Control District (SDAPCD) Rule 55 – Fugitive Dust Control states that no dust and/or dirt shall leave the property line. SDAPCD Rule 55 requires the following:

1) **Airborne Dust Beyond the Property Line:** No person shall engage in construction or demolition activity subject to this rule in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.

2) **Track-Out/Carry-Out:** Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall:

   a) be minimized by the use of any of the following or equally effective track-out/carry-out and erosion control measures that apply to the Project or operation:

      i) track-out grates or gravel beds at each egress point;

      ii) wheel-washing at each egress during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and for outbound transport trucks;

      iii) using secured tarps or cargo covering, watering, or treating of transported material; and

   b) be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. If a street sweeper is used to remove any track-out/carry-out, only PM_{10}-efficient (particulate matter less than 10 microns) street sweepers certified to meet the most current South Coast Air Quality Management District (SCAQMD) Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

The Project would implement the BMP control measures listed below:

- A minimum of two applications of water during grading between dozer/scraper passes;
- Termination of grading if winds exceed 25 miles per hour (mph);
- Maintenance of a minimum soil moisture of 12 percent in all exposed surfaces;
- Stabilization of dirt storage piles by chemical binders, tarps, fencing, or other erosion control; and
- Vehicle speeds would be limited on unpaved roads to 15 mph.

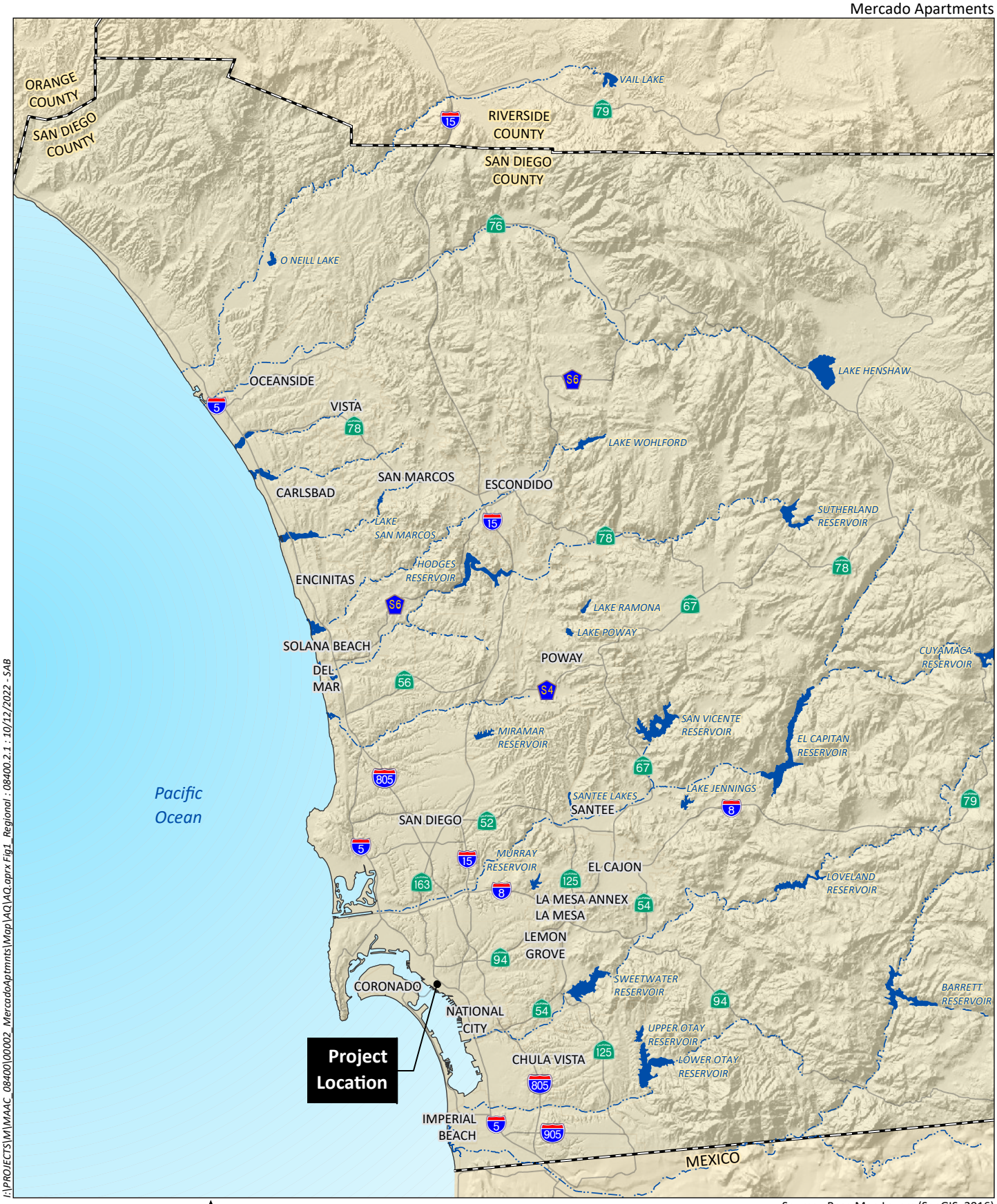
2.0 REGULATORY SETTING

2.1 CRITERIA POLLUTANTS

2.1.1 Pollutants of Concern

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the public. In general, air pollutants include the following compounds:

- Ozone (O_3)
- Reactive Organic Gases (ROGs) or volatile organic compounds (VOCs)
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO_2)



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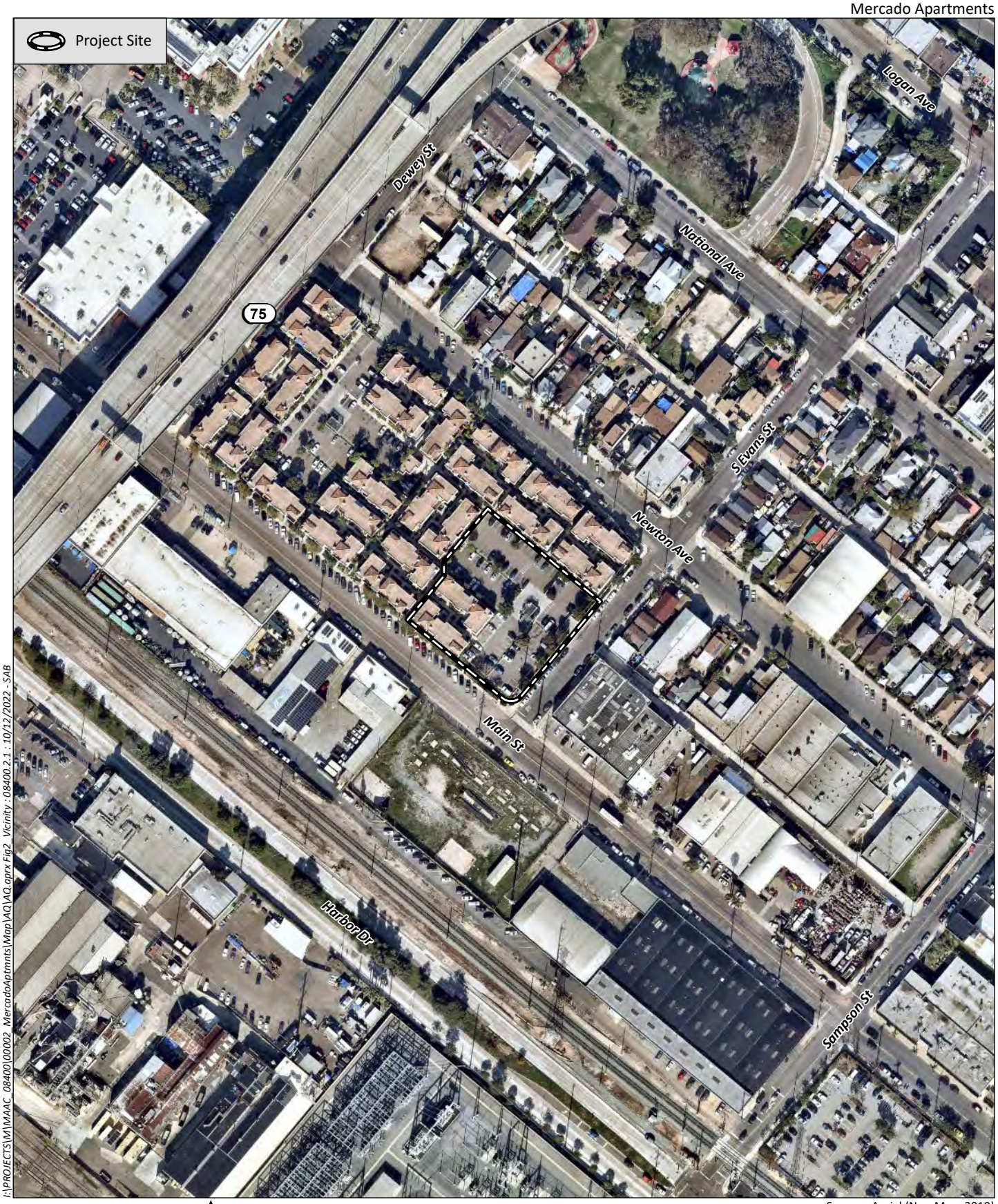
Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



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0 200 Feet

Source: Aerial (NearMap, 2019)

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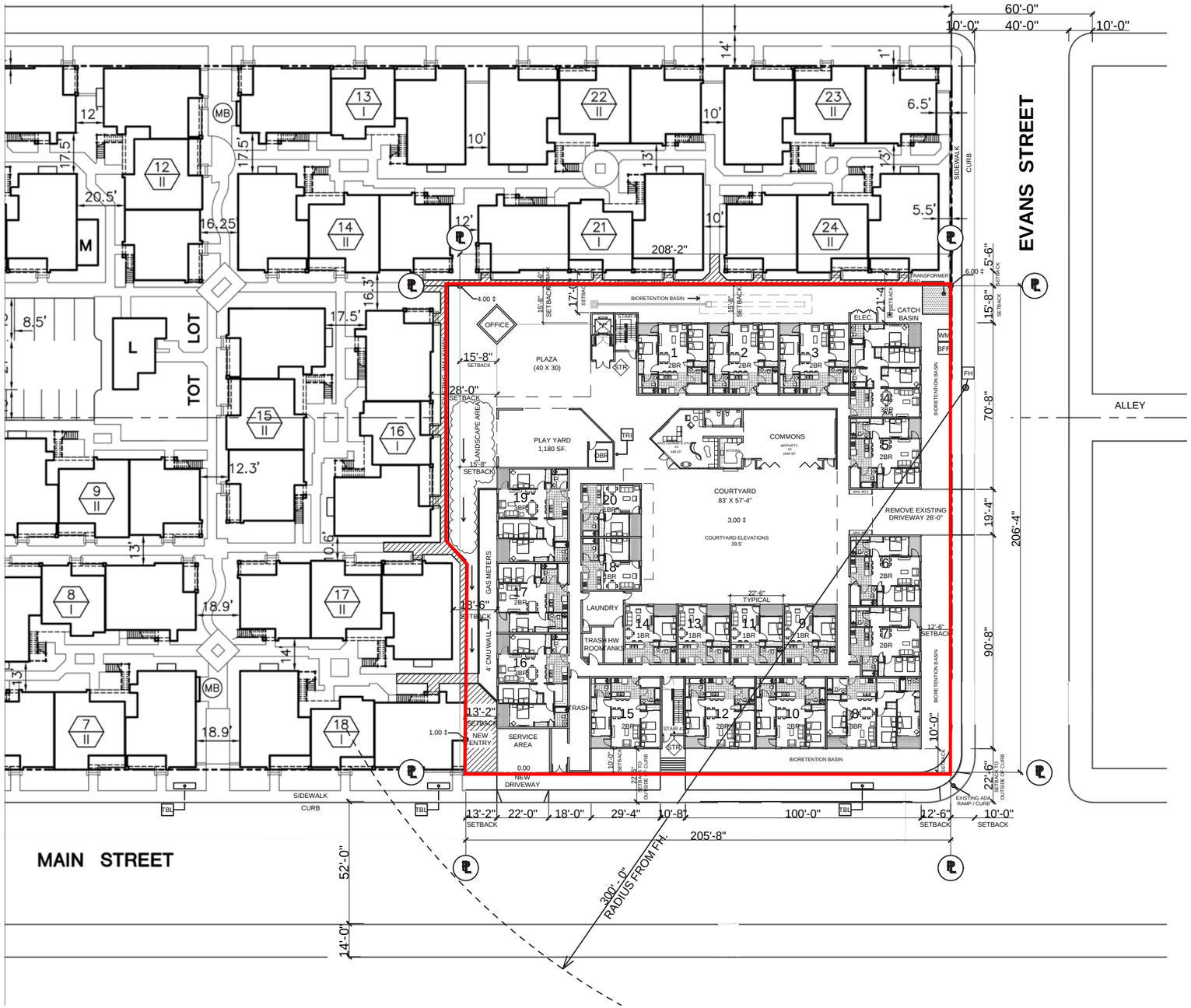
Project Vicinity

Figure 2



NOTES:

UNIT DISTRIBUTION

	1BR	2BR	2BR	TOTAL
LEVEL 1	6	10	4	20
LEVEL 2	8	10	6	24
LEVEL 3	8	10	6	24
LEVEL 4	8	8	8	24
	30	38	24	92

SYMBOLS

- STR — STAIR TO ROOF
- WM — WATER METERS
- BFP — BACK FLOW PREVENTOR
- FH — FIRE HYDRANT (EXISTING)
- TBL — TRANSPORTATION INFRASTRUCTURE LIGHTING AND/OR BENCH ON MAIN STREET
- OBR — ON SITE BICYCLE REPAIR
- TRI — TRANSIT/RIDESHARE INFORMATION (7 TOTAL ON MAIN STREET)

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Source: Martinez + Cutri, 2022

- Respirable Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)
- Sulfur Dioxide (SO_2)
- Lead (Pb)

The following specific descriptions of health effects for each air pollutant associated with Project construction and operation are based on information available through U.S. Environmental Protection Agency (USEPA; 2021) and California Air Resources Board (CARB; 2022a).

Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when VOCs and nitrogen oxides (NO_X), both by-products of fuel combustion, react in the presence of ultraviolet light. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Reactive Organic Gases. ROGs (also known as VOCs) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but by reactions of ROGs to form secondary pollutants such as ozone.

Carbon Monoxide. CO is a product of fuel combustion. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease and can also affect mental alertness and vision.

Nitrogen Dioxide. NO_2 is also a by-product of fuel combustion and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter. PM_{10} refers to particulate matter (PM) with an aerodynamic diameter of 10 microns or less. $PM_{2.5}$ refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in these size ranges has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations, and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs. Diesel particulate matter (DPM) is classified a carcinogen by CARB.

Sulfur Dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead in the atmosphere occurs as particulate matter. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Lead has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen. Because emissions of lead are found only in projects that are permitted by the local air district, lead is not an air pollutant of concern for the proposed Project.

2.1.2 Federal Regulations

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for the criteria pollutants, which are discussed above. Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. Table 1, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

Table 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	–	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	Same as Primary

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	**No Federal Standards**
Sulfates	24 Hour	25 µg/m^3	**No Federal Standards**	**No Federal Standards**
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	**No Federal Standards**	**No Federal Standards**
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	**No Federal Standards**	**No Federal Standards**

Source: CARB 2016

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

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

Note: More detailed information of the data presented in this table can be found at the CARB website (www.arb.ca.gov).
O_3 = ozone; ppm: parts per million; µg/m^3 = micrograms per cubic meter; PM_{10} = large particulate matter;
AAM = Annual Arithmetic Mean; $PM_{2.5}$ = fine particulate matter; CO = carbon monoxide; mg/m^3 = milligrams per cubic meter;
NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide; km = kilometer; – = No Standard.

2.1.3 State Regulations

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H2S), vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are "nonattainment areas" for that pollutant. The San Diego Air Basin (SDAB) is currently classified as a nonattainment area under the NAAQS for ozone (8-hour) and under the CAAQS for ozone (8-hour and 1-hour), PM10, and PM2.5. The SDAB is an attainment area for the NAAQS and CAAQS for all other criteria pollutants (SDAPCD 2019).

CARB is the state regulatory agency with authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS. The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for the County.

2.1.4 Regional Regulations

The SDAPCD and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The current regional air quality plan for the NAAQS is SDAPCD's *2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County* (Attainment Plan; SDAPCD 2020). The regional air quality plan for the CAAQS is SDAPCD's *2016 Revision to the* Regional Air Quality Strategy for San Diego County (RAQS; SDAPCD 2016). A 2022 update to the 2016 RAQS is currently in

progress (SDAPCD 2022). These plans accommodate emissions from all sources, including natural sources, through implementation of control measures, where feasible, on stationary sources to attain the NAAQS and CAAQS. Mobile sources are regulated by the USEPA and CARB, and the emissions and reduction strategies related to mobile sources are considered in the Attainment Plan and RAQS.

The Attainment Plan and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County as part of the development of their respective general plans. As such, projects that propose development that is consistent with the growth anticipated by the local jurisdictions' general plans, and do not conflict with the control measures in the Attainment Plan and do not result in criteria pollutant and precursor emissions in excess of the thresholds adopted by the City (as described in Section 4.2, below), would be consistent with the Attainment Plan and RAQS to bring the SDAB into compliance with the NAAQS and CAAQS for the protection of public health.

The current federal and state attainment status for San Diego County is presented in Table 2, *San Diego Air Basin Attainment Status*.

Table 2
SAN DIEGO AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)	Nonattainment
O_3 (8-hour)	Nonattainment	Nonattainment
CO	Attainment	Attainment
PM_{10}	Unclassifiable	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassifiable
Visibility	(No federal standard)	Unclassifiable

Source: SDAPCD 2019

2.2 TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. Air toxics are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as farms, landfills, construction sites, and residential areas. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic. Public exposure to TACs is a significant environmental health issue in California.

2.3 ODORS

The State of California Health and Safety Code Sections 41700 and 41705 and SDAPCD Rule 51 (commonly referred to as public nuisance law) prohibits emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a "considerable" number of persons or businesses in the area will be considered a significant, adverse odor impact.

The San Diego Municipal Code also addresses odor impacts at Chapter 14, Article 2, Division 7 paragraph 142.0710, "Air Contaminant Regulations," which states:

> Air contaminants including smoke, charred paper, dust, soot, grime, carbon, noxious acids, toxic fumes, gases, odors, and particulate matter, or any emissions that endanger human health, cause damage to vegetation or property, or cause soiling, shall not be permitted to emanate beyond the boundaries of the premises upon which the use emitting the contaminants is located.

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

The climate in southern California, including the SDAB, is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity.

The predominant wind direction in the vicinity of Project site is from the northwest and the average wind speed is 6.6 mph (Iowa Environmental Mesonet 2022). The annual average maximum temperature in the Project area is approximately 70°F, and the annual average minimum temperature is approximately 56°F. Total precipitation in the Project area averages approximately 10 inches annually. Precipitation occurs mostly during the winter and infrequently during the summer (Western Regional Climate Center 2016).

Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases, which is the opposite of general patterns). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO_2 react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to CO and NO_2 emissions. High NO_2 levels usually occur during autumn or winter, on days with summer-like conditions.

3.2 EXISTING AIR QUALITY

3.2.1 Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in Section 2.1.1 and shown in Table 2. The SDAB is classified as a nonattainment area under the NAAQS for 8-hour ozone and as a nonattainment area under the CAAQS for 1-hour ozone, 8-hour ozone, PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area for all other criteria pollutants.

3.2.1.2 Monitored Air Quality

The SDAPCD operates a network of ambient air monitoring stations throughout the San Diego County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest ambient monitoring station to the Project site is the Sherman Elementary School monitoring station located approximately 0.7 miles north of the Project site in the Sherman Heights Neighborhood. Air quality data for this monitoring station are shown in Table 3, *Air Quality Monitoring Data.*

Table 3
AIR QUALITY MONITORING DATA

Pollutant	2019	2020	2021
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.084	0.115	0.076
Days above 1-hour state standard (>0.09 ppm)	0	2	0
Maximum 8-hour concentration (ppm)	0.072	0.087	0.063
Days above 8-hour state standard (>0.070 ppm)	1	3	0
Days above 8-hour federal standard (>0.075 ppm)	0	1	0
Respirable Particulate Matter (PM_{10}) [1]			
Maximum 24-hour concentration (µg/m^3)	69.4	*	*
Days above state standard (>50 µg/m^3)	1	*	*
Days above federal standard (>150 µg/m^3)	*	*	*
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration (µg/m^3)	*	54.4	26.3
Days above federal standard (>35 µg/m^3)	*	6	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.062	0.053	0.054
Days above state 1-hour standard (0.18 ppm)	0	0	0

Source: CARB 2022b

[1] PM_{10} is based off data from the Chula Vista Monitoring station, located approximately 6.8 miles southeast of the site. This monitoring station was used because it is the closest monitoring station to the project site that monitors for PM_{10}.

*Insufficient data available

ppm = parts per million, µg/m^3 = micrograms per cubic meter

From 2019 to 2021, monitoring data at the Sherman Elementary School monitoring station show acceptable levels of NO_2. The state 1-hour ozone standard was violated twice in 2020. The state 8-hour ozone standard was violated once in 2019, and three times in 2020. The federal 8-hour ozone standard was violated one time in 2020. The Fine Particulate Matter ($PM_{2.5}$) federal standard was violated six times in 2020.

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant and ozone precursor emissions were calculated using the California Emissions Estimator Model (CalEEMod), Version 2020.4.0 (California Air Pollution Control Officers Association [CAPCOA] 2021). CalEEMod is a computer model used to estimate air pollutant emissions resulting from construction and operation of land development projects throughout the state of California. CalEEMod was developed by the SCAQMD with the input of several air quality management and pollution control districts. The input data and subsequent construction and operation emission estimates for the proposed Project are discussed below. CalEEMod output files are included in Appendix A.

4.1.1 Construction

As described above, construction emissions are assessed using the CalEEMod, Version 2020.4.0. CalEEMod contains OFFROAD2011 and EMFAC2017 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. Construction input data for CalEEMod include, but are not limited to: (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the Project area. The analysis assessed maximum daily emissions from individual construction activities including demolition, clearing and grubbing, grading, building construction, paving and architectural coating.

The Project's anticipated construction schedule was determined from input provided by the Project applicant. Table 4, *Anticipated Construction Schedule*, shows the anticipated construction schedule for Project construction.

Table 4
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Start	Construction End
Demolition	9/1/2024	9/20/2024
Clearing and Grubbing	9/21/2024	11/20/2024
Grading	11/21/2024	12/4/2024
Building Construction	12/5/2024	8/12/2026
Paving	8/13/2026	9/11/2026
Architectural Coating	9/12/2026	10/14/2026

Construction would require heavy equipment during these various construction activities. Construction equipment estimates are based on model defaults. Table 5, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each stage of construction.

Table 5
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Activity	Equipment	Number
Demolition	Concrete/Industrial Saw	1
	Tractor/Loader/Backhoe	2
	Rubber Tired Dozer	1
Clearing and Grubbing	Grader	1
	Tractor/Loader/Backhoe	1
Grading	Tractor/Loader/Backhoe	1
	Grader	1
	Rubber Tired Dozer	1
Building Construction	Crane	1
	Forklift	2
	Tractor/Loader/Backhoe	2
Paving	Cement and Mortar Mixer	4
	Paver	1
	Roller	1
	Tractor/Loader/Backhoe	1
Architectural Coating	Air Compressor	1

Source: CalEEMod (output data, including equipment horsepower, is provided in Appendix A).

Project construction would involve the demolition of two existing structures totaling 12,000 SF, vegetation clearing and grubbing, soil movement (cut and fill) during grading, and excavation for the proposed structure. The export of demolition materials would require the use of on-road haul trucks that would generate air pollutant emissions. According to the Waste Management Plan prepared for the Project (HELIX 2023), approximately 2,401 tons of waste is expected to be generated during demolition of existing structures. For grading/excavation, the Project would balance the existing materials on-site and would not require soil hauling.

The quantity, duration, and the intensity of construction activity influence the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a large amount of construction is occurring in an intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval).

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Construction emission calculations presented herein assume the implementation of standard dust control measures listed in Section 1.4, including watering two times daily during grading, ensuring that all exposed surfaces maintain a minimum soil moisture of 12 percent, and limiting vehicle speeds on unpaved roads to 15 mph.

The Project would also exceed the requirements of SDAPCD Rule 67 by using no-VOC coatings. The quantities of coatings that would be applied to the interior and exterior of the new buildings were estimated according to CalEEMod default assumptions.

4.1.2 Operational

Operational impacts associated with the Project were estimated using CalEEMod. Operational sources of emissions include area, energy, and transportation sources. Operational emissions from area sources include engine emissions from landscape maintenance equipment and VOC emissions from repainting of buildings. Energy source emissions include the combustion of natural gas for heating and hot water. The Project's assumed natural gas usage was based on model defaults.

Operational emissions from mobile sources are associated with Project-related vehicle trip generation. Due to the proposed Project being an infill development with no increased parking associated with it, and the proximity to public transportation hubs such as the Barrio Logan Light Rail Station, a Local Mobility analysis was deemed not necessary for the proposed Project. CalEEMod default trip rates, vehicle speeds, trip purpose, and trip distances were applied to the conservative assumptions for vehicle trips to calculate average daily trips (ADT) and vehicle miles traveled (VMT). Based on CalEEMod defaults, the Project would generate an estimated 500 ADT for operational uses.

4.2 SIGNIFICANCE CRITERIA

The City utilizes the City of San Diego California Environmental Quality Act (CEQA) Significance Determination Thresholds (City 2022), which provide guidance that a project would have a significant air quality environmental impact if it would:

(1) Conflict with or obstruct implementation of the applicable air quality plan (Attainment Plan or applicable portions of the State Implementation Plan);

(2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

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

(4) Expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations; or

(5) Create objectionable odors affecting a substantial number of people.

The City's Significance Determination Thresholds include an additional threshold, which states that a Project would have a significant impact if it would "release substantial quantities of air contaminants beyond the boundaries of the premises upon which the stationary source emitting the contaminants is located." This threshold does not apply to this project as there would be no operational stationary sources associated with the proposed Project.

To determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, (b) result in a cumulatively considerable net increase of PM_{10}, PM_{10}, or exceed quantitative thresholds for ozone precursors (NO_X and VOCs), or (c) have an adverse effect on human health, project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD as directed by the City CEQA Significance Determination Thresholds. As part of its air quality permitting process, the SDAPCD has established thresholds in Rules 20.2 and 20.3 for the preparation of Air Quality Impact Assessments (AQIAs). In the absence of a SDAPCD adopted thresholds for $PM_{2.5}$, the SCAQMD's screening threshold of 55 pounds per day or 10 tons per year is used.

The screening criteria were developed by SDAPCD and SCAQMD with the purpose of attaining the NAAQS and CAAQS. The NAAQS and CAAQS, as discussed in Section 2.1.1, identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. Therefore, for CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality or have an adverse effect on human health. The screening thresholds are included in Table 6, *Screening-level Thresholds for Air Quality Impact Analysis*.

Table 6
SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSIS

Pollutant	Total Emissions		
Construction Emissions (Pounds per Day)			
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_X)	250		
Oxides of Sulfur (SO_X)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOCs)	137		
Operational Emissions			
	Pounds per Hour	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOC)	---	137	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk		1 in 1 million 10 in 1 million with T-BACT	
Non-Cancer Hazard		1.0	

Source: City of San Diego 2022
T-BACT = Toxics-Best Available Control Technology

Per the City's Significance Determination Thresholds, determining the significance of potential odor impacts should be based on what is known about the quantity of the odor compound(s) that would result from the Project's proposed use(s), the types of neighboring uses potentially affected, the distance(s) between the Project's point source(s) and the neighboring uses such as sensitive receptors, and the resultant concentrations at receptors.

5.0 IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed Project related to the air pollutant emissions.

5.1 CONSISTENCY WITH AIR QUALITY PLANS

The SDAPCD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the Attainment Plan and RAQS, prepared by the SDAPCD for the region. Both the Attainment Plan and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County. As such, projects that propose development that is consistent with the growth anticipated by the local jurisdictions' general plans would be consistent with the Attainment Plan and RAQS. In the event that a project proposes development that is less intensive than anticipated within the General Plan, the project would likewise be consistent with the Attainment Plan and RAQS. If a project proposes development that is greater than that anticipated in the General Plan and SANDAG's growth projections upon which the Attainment Plan and RAQS are based, the project would be in conflict with the Attainment Plan and RAQS and might have a potentially significant impact on air quality. This situation would warrant further analysis to determine whether the project and the surrounding projects exceed the growth projections used in the Attainment Plan and RAQS for the specific subregional area.

The Project site has a General Plan land use designation of Residential and a Community Plan land use designation of 1991 Barrio Logan Redevelopment Project Area. The official zoning is BLPD-REDEVLP-SUBD. The Project would be consistent with the General Plan land use designation of Residential. The Project would provide 92 units and would be within the allowable units for the zoning of the Project site. Therefore, the Project would not be in conflict with the Attainment Plan and RAQS.

Furthermore, as detailed in Section 5.2, below, the Project would not result in a significant air quality impact with regards to construction- and operational-related emissions of ozone precursors or criteria air pollutants. The Project would also comply with existing and new rules and regulations as they are implemented by the SDAPCD, CARB, and/or USEPA related to emissions generated during construction. Impacts associated with conformance to regional air quality plans would be less than significant.

5.2 CONFORMANCE TO FEDERAL AND STATE AIR QUALITY STANDARDS

The Project would generate criteria pollutants and ozone precursors in the short-term during construction and in the long term during operation. To determine whether the Project would result in emissions that would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or have an adverse effect on human health, the Project's emissions are evaluated based on the quantitative emission thresholds established by the SDAPCD (as shown in Table 6).

5.2.1 Construction

The Project's construction emissions were estimated using CalEEMod as described in Section 4.1.1. Project-specific input was based on information provided by the Project Applicant and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

The results of the calculations for the various phases of Project construction are shown in Table 7, *Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the SDAPCD thresholds.

Table 7
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Activity	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Demolition	0.7	7.6	8.2	<0.1	2.2	0.6
Clearing and Grubbing	0.5	5.7	4.0	<0.1	0.5	0.2
Grading	0.9	9.7	5.7	<0.1	2.9	1.5
Building Construction	0.8	6.5	8.6	<0.1	0.9	0.4
Paving	0.6	4.9	7.4	<0.1	0.4	0.2
Architectural Coating	27.3	1.2	2.1	<0.1	0.2	0.1
Maximum Daily Emissions	**27.3**	**9.7**	**8.6**	**<0.1**	**2.9**	**1.5**
SDAPCD Thresholds	*137*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 7, emissions of all criteria pollutants and ozone precursors from Project construction would be far below the SDAPCD's significance thresholds. Therefore, direct impacts associated with criteria pollutants generated during Project construction would be less than significant.

5.2.2 Operation

The Project's operational emissions were estimated using CalEEMod as described in Section 4.1.2. As discussed therein, the Project's operational sources of emissions would include area, energy, and transportation sources. Operational emissions calculations and model outputs are provided in Appendix A. Table 8, *Maximum Daily Operational Emissions*, presents the calculated operational emissions for the Project.

Table 8
MAXIMUM DAILY OPERATIONAL EMISSIONS

Category	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	2.53	0.09	7.58	**<0.01**	0.04	0.04
Energy	0.02	0.17	0.07	**<0.01**	0.01	0.01
Mobile	1.30	1.41	12.25	0.03	3.03	0.82
Total Daily Emissions	**3.85**	**1.67**	**19.90**	**0.03**	**3.08**	**0.88**
SDAPCD Thresholds	*137*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
Note: The total presented is the sum of the unrounded values.
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 8, emissions of all criteria pollutants and ozone precursors associated with the Project operations would be far below the SDAPCD's significance thresholds. Therefore, direct impacts associated with criteria pollutants generated during Project operations would be less than significant.

5.3 CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

The region is a federal and/or state nonattainment area for PM_{10}, $PM_{2.5}$, and ozone. The Project would contribute particulates and the ozone precursors VOC and NO_X to the area during Project construction and operation. As described in Section 5.2, emissions during both construction and operations would not exceed regional thresholds and would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, emissions would not be cumulatively considerable, and impacts would be less than significant.

5.4 IMPACTS TO SENSITIVE RECEPTORS

Impacts to sensitive receptors are typically analyzed for operational period CO hotspots and exposure to TACs. The nearest sensitive receptor to the Project site is the surrounding residential apartment complex. Additionally, there are single-family residences approximately 350 feet to the northeast. An analysis of the Project's potential to expose sensitive receptors to these pollutants is provided below.

5.4.1 Carbon Monoxide Hotspots

Localized air quality effects can occur when emissions from vehicular traffic increase in local areas. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited—it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. If a project generates vehicular traffic that increases average delay at signalized intersections operating at Level of Service (LOS) E or F or causes an intersection that would operate at LOS D or better without the project to

operate at LOS E of F with the project, the project could result in significant CO hotspot-related effects to sensitive receptors.

Due to the proposed Project being an infill development with no increased parking associated with it, and the proximity to public transportation hubs such as the Barrio Logan Light Rail Station, it is not anticipated to generate a substantial number of trips such that the local roadway network would be adversely affected. The project would generate 480 net average daily trips (ADT)[1]. As indicated in the City CEQA Significance Determination Thresholds, the project would not exceed the City's CO hotpot screening thresholds of 9,500 ADT. Therefore, the Project would not have the potential to result in a CO hotspot, and impacts would be less than significant.

5.4.2 Exposure to Toxic Air Contaminants

5.4.2.1 Construction

Diesel engines emit a complex mixture of air pollutants, including gaseous material and DPM. DPM emissions would be released from operation of the on-site construction equipment used for Project construction. CARB has declared that DPM from diesel engine exhaust is a TAC. Additionally, the Office of Environmental Health Hazard Assessment has determined that chronic exposure to DPM can cause carcinogenic and non-carcinogenic health effects. For this reason, although other pollutants would be generated, DPM would be the primary pollutant of concern.

The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual (MEI) are higher if a fixed exposure occurs over a longer time period. According to the Office of Environmental Health Hazard Assessment, health risk assessments (HRAs), which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with a project.

There would be few pieces of off-road, heavy-duty diesel equipment operating at a given time during Project construction, and the construction period would be relatively short, especially when compared to 30 years. In addition, as shown above in Table 7, the highest daily emission of PM_{10} (which includes equipment emissions of DPM) during construction is estimated to be approximately 2.9 pounds per day, which would be well below the 100 pounds per day significance level threshold. As discussed above in Section 2.1.1, these significance level thresholds were developed with the purpose of attaining the NAAQS and CAAQS, which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. Combined with the highly dispersive properties of diesel PM, construction-related emissions would not expose sensitive receptors to substantial emissions of TACs. The Project site is located on a previous LUST case site involving gasoline contaminated soils (Case #H32282-001). However, the case was closed in 2001 and no further action related to the petroleum releases at the site is required. Therefore, given the closure of the site and that soil disturbance is expected to be minimal with only 750 CY of balanced cut and fill, exposure of TACs as

[1] The proposed daily trip generation for the project is 552 ADT with 44 AM (9 in, 35 out) peak hour trips and 50 PM (35 in, 15 out) peak hour trips. This is based on a rate of 6 daily trips per dwelling unit for the 92 dwelling units for Multiple Dwelling Units (over 20 dwelling units per acre). Total net increase is 480 daily trip generation.

a result of grading would be less than significant. Impacts from construction emissions would be less than significant.

5.4.2.2 Operation

CARB siting recommendations within the *Air Quality and Land Use Handbook* suggest a detailed health risk assessment should be conducted for sensitive receptors within 1,000 feet of a warehouse distribution center, within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater), 50 feet of typical gas dispensing facilities, or within 300 feet of a dry cleaning facility that uses perchloroethylene (PCE), among other siting recommendations (CARB 2005). The Project, as a residential development, does not include these types of sources and would not represent a substantial source of TACs that could affect off-site sensitive receptors. In addition, the Project would not site the proposed residential use within these distances. There are no warehouse distribution centers, large gas stations, typical gas dispensing facilities, or dry-cleaning facilities that uses perchloroethylene in the vicinity of the project site. As such, impacts would be less than significant.

5.5 ODORS

As discussed above in Section 2.3, the State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. Any unreasonable odor discernible at the property line of the Project site will be considered a significant odor impact.

The Project could produce odors during proposed construction activities from construction equipment exhaust, application of asphalt, and/or the application of architectural coatings; however, standard construction practices would minimize the odor emissions and their associated impacts. Furthermore, odors emitted during construction would be temporary, short-term, and intermittent in nature, and would cease upon the completion of the respective phase of construction. Accordingly, the proposed Project would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

During Project operation, the temporary storage of refuse could be a potential source of odor; however, Project-generated refuse is required to be stored in covered containers and removed at regular intervals in compliance with the City's Municipal Code solid waste regulations, thereby precluding significant odor impacts. Furthermore, the proposed Project would be required to comply with SDAPCD Rule 51 which prohibits the discharge of odorous emissions that would create a public nuisance. As such, long-term operation of the proposed Project would not create objectionable odors affecting a substantial number of people. Impacts would be less than significant.

6.0 LIST OF PREPARERS

Jason Runyan	Project Manager
Victor Ortiz	Senior Air Quality Specialist, Quality Assurance Reviewer
Ellia Simmons	Air Quality Analyst

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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Appendix A

CalEEMod Output

The following section contains content that was obtained from a third party and may not achieve the same level of Americans with Disabilities Act (ADA) and Section 508 accessibility as other parts of this document.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mercado Apartments

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	92.00	Dwelling Unit	0.91	99,450.00	500

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2026
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Information based on assumptions from project engineer

Construction Phase - Schedule based on information given from the project engineer

Grading -

Demolition -

Architectural Coating - Based on SDAPCD rule 67

Woodstoves - no wood burning devices

Area Coating - SDAPCD rule 67

Solid Waste - from WMP

Construction Off-road Equipment Mitigation -

Area Mitigation -

Mercado Apartments - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Residential_Exterior	250	50
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	50	250
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	50	250
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	5.00	23.00
tblConstructionPhase	NumDays	100.00	440.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	5.00	22.00
tblConstructionPhase	NumDays	1.00	43.00
tblConstructionPhase	PhaseEndDate	2/19/2025	10/14/2026
tblConstructionPhase	PhaseEndDate	2/5/2025	8/12/2026
tblConstructionPhase	PhaseEndDate	9/13/2024	9/20/2024
tblConstructionPhase	PhaseEndDate	9/18/2024	12/4/2024
tblConstructionPhase	PhaseEndDate	2/12/2025	9/11/2026
tblConstructionPhase	PhaseEndDate	9/16/2024	11/20/2024
tblConstructionPhase	PhaseStartDate	2/13/2025	9/12/2026
tblConstructionPhase	PhaseStartDate	9/19/2024	12/5/2024
tblConstructionPhase	PhaseStartDate	9/17/2024	11/21/2024
tblConstructionPhase	PhaseStartDate	2/6/2025	8/13/2026
tblConstructionPhase	PhaseStartDate	9/14/2024	9/21/2024
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	50.60	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblFireplaces	NumberNoFireplace	9.20	92.00
tblFireplaces	NumberWood	32.20	0.00
tblGrading	MaterialExported	0.00	320.00
tblLandUse	LandUseSquareFeet	92,000.00	99,450.00
tblLandUse	LotAcreage	2.42	0.91
tblLandUse	Population	263.00	500.00
tblSolidWaste	SolidWasteGenerationRate	42.32	118.00
tblWoodstoves	NumberCatalytic	4.60	0.00
tblWoodstoves	NumberNoncatalytic	4.60	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

Mercado Apartments - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2024	0.9355	9.7435	8.6299	0.0218	5.3777	0.4004	5.7781	2.5860	0.3684	2.9544						
2025	0.7355	6.0239	8.5002	0.0176	0.6099	0.2465	0.8564	0.1633	0.2269	0.3902						
2026	27.2591	6.0102	8.4233	0.0175	0.6099	0.2464	0.8563	0.1633	0.2268	0.3901						
Maximum	**27.2591**	**9.7435**	**8.6299**	**0.0218**	**5.3777**	**0.4004**	**5.7781**	**2.5860**	**0.3684**	**2.9544**						

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					
2024	0.9355	9.7435	8.6299	0.0218	2.4561	0.4004	2.8565	1.1733	0.3684	1.5417						
2025	0.7355	6.0239	8.5002	0.0176	0.6099	0.2465	0.8564	0.1633	0.2269	0.3902						
2026	27.2591	6.0102	8.4233	0.0175	0.6099	0.2464	0.8563	0.1633	0.2268	0.3901						
Maximum	**27.2591**	**9.7435**	**8.6299**	**0.0218**	**2.4561**	**0.4004**	**2.8565**	**1.1733**	**0.3684**	**1.5417**						

Mercado Apartments - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	44.28	0.00	39.00	48.50	0.00	37.83	0.00	0.00	0.00	0.00	0.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5264	0.0874	7.5829	4.0000e-004		0.0421	0.0421		0.0421	0.0421						
Energy	0.0198	0.1690	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137						
Mobile	1.3024	1.4145	12.2492	0.0256	3.0081	0.0198	3.0278	0.8013	0.0184	0.8197						
Total	**3.8486**	**1.6709**	**19.9040**	**0.0271**	**3.0081**	**0.0755**	**3.0836**	**0.8013**	**0.0742**	**0.8754**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5264	0.0874	7.5829	4.0000e-004		0.0421	0.0421		0.0421	0.0421						
Energy	0.0198	0.1690	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137						
Mobile	1.3024	1.4145	12.2492	0.0256	3.0081	0.0198	3.0278	0.8013	0.0184	0.8197						
Total	**3.8486**	**1.6709**	**19.9040**	**0.0271**	**3.0081**	**0.0755**	**3.0836**	**0.8013**	**0.0742**	**0.8754**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2024	9/20/2024	5	15	
2	Site Preparation	Site Preparation	9/21/2024	11/20/2024	5	43	
3	Grading	Grading	11/21/2024	12/4/2024	5	10	
4	Building Construction	Building Construction	12/5/2024	8/12/2026	5	440	
5	Paving	Paving	8/13/2026	9/11/2026	5	22	
6	Architectural Coating	Architectural Coating	9/12/2026	10/14/2026	5	23	

Acres of Grading (Site Preparation Phase): 21.5

Acres of Grading (Grading Phase): 7.5

Acres of Paving: 0

Residential Indoor: 201,386; Residential Outdoor: 67,129; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	233.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	40.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	66.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2024

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					3.3987	0.0000	3.3987	0.5147	0.0000	0.5147						
Off-Road	0.6156	5.4776	7.3949	0.0120		0.2504	0.2504		0.2392	0.2392						
Total	**0.6156**	**5.4776**	**7.3949**	**0.0120**	**3.3987**	**0.2504**	**3.6491**	**0.5147**	**0.2392**	**0.7539**						

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	0.0327	2.0957	0.5729	9.1200e-003	0.2717	0.0174	0.2891	0.0745	0.0166	0.0911						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0279	0.0172	0.2132	6.6000e-004	0.0822	4.2000e-004	0.0826	0.0218	3.9000e-004	0.0222						
Total	**0.0606**	**2.1129**	**0.7861**	**9.7800e-003**	**0.3538**	**0.0178**	**0.3716**	**0.0963**	**0.0170**	**0.1133**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2024

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					1.5294	0.0000	1.5294	0.2316	0.0000	0.2316						
Off-Road	0.6156	5.4776	7.3949	0.0120		0.2504	0.2504		0.2392	0.2392						
Total	**0.6156**	**5.4776**	**7.3949**	**0.0120**	**1.5294**	**0.2504**	**1.7798**	**0.2316**	**0.2392**	**0.4708**						

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	0.0327	2.0957	0.5729	9.1200e-003	0.2717	0.0174	0.2891	0.0745	0.0166	0.0911						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0279	0.0172	0.2132	6.6000e-004	0.0822	4.2000e-004	0.0826	0.0218	3.9000e-004	0.0222						
Total	**0.0606**	**2.1129**	**0.7861**	**9.7800e-003**	**0.3538**	**0.0178**	**0.3716**	**0.0963**	**0.0170**	**0.1133**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5313	0.0000	0.5313	0.0574	0.0000	0.0574						
Off-Road	0.4985	5.6040	3.8921	9.7300e-003		0.2012	0.2012		0.1851	0.1851						
Total	**0.4985**	**5.6040**	**3.8921**	**9.7300e-003**	**0.5313**	**0.2012**	**0.7325**	**0.0574**	**0.1851**	**0.2425**						

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	1.9600e-003	0.1255	0.0343	5.5000e-004	0.0163	1.0400e-003	0.0173	4.4600e-003	1.0000e-003	5.4600e-003						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0140	8.5800e-003	0.1066	3.3000e-004	0.0411	2.1000e-004	0.0413	0.0109	1.9000e-004	0.0111						
Total	**0.0159**	**0.1341**	**0.1409**	**8.8000e-004**	**0.0573**	**1.2500e-003**	**0.0586**	**0.0154**	**1.1900e-003**	**0.0166**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2391	0.0000	0.2391	0.0258	0.0000	0.0258						
Off-Road	0.4985	5.6040	3.8921	9.7300e-003		0.2012	0.2012		0.1851	0.1851						
Total	**0.4985**	**5.6040**	**3.8921**	**9.7300e-003**	**0.2391**	**0.2012**	**0.4403**	**0.0258**	**0.1851**	**0.2110**						

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	1.9600e-003	0.1255	0.0343	5.5000e-004	0.0163	1.0400e-003	0.0173	4.4600e-003	1.0000e-003	5.4600e-003						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0140	8.5800e-003	0.1066	3.3000e-004	0.0411	2.1000e-004	0.0413	0.0109	1.9000e-004	0.0111						
Total	**0.0159**	**0.1341**	**0.1409**	**8.8000e-004**	**0.0573**	**1.2500e-003**	**0.0586**	**0.0154**	**1.1900e-003**	**0.0166**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2024

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					5.3119	0.0000	5.3119	2.5686	0.0000	2.5686						
Off-Road	0.9132	9.7297	5.5468	0.0141		0.4001	0.4001		0.3681	0.3681						
Total	**0.9132**	**9.7297**	**5.5468**	**0.0141**	**5.3119**	**0.4001**	**5.7120**	**2.5686**	**0.3681**	**2.9367**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0223	0.0137	0.1705	5.3000e-004	0.0657	3.4000e-004	0.0661	0.0174	3.1000e-004	0.0177						
Total	**0.0223**	**0.0137**	**0.1705**	**5.3000e-004**	**0.0657**	**3.4000e-004**	**0.0661**	**0.0174**	**3.1000e-004**	**0.0177**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2024

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					2.3904	0.0000	2.3904	1.1559	0.0000	1.1559						
Off-Road	0.9132	9.7297	5.5468	0.0141		0.4001	0.4001		0.3681	0.3681						
Total	**0.9132**	**9.7297**	**5.5468**	**0.0141**	**2.3904**	**0.4001**	**2.7905**	**1.1559**	**0.3681**	**1.5240**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0223	0.0137	0.1705	5.3000e-004	0.0657	3.4000e-004	0.0661	0.0174	3.1000e-004	0.0177						
Total	**0.0223**	**0.0137**	**0.1705**	**5.3000e-004**	**0.0657**	**3.4000e-004**	**0.0661**	**0.0174**	**3.1000e-004**	**0.0177**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2024

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	0.5950	5.9739	7.0675	0.0114		0.2824	0.2824		0.2598	0.2598						
Total	**0.5950**	**5.9739**	**7.0675**	**0.0114**		**0.2824**	**0.2824**		**0.2598**	**0.2598**						

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						
Vendor	0.0112	0.4437	0.1555	2.0100e-003	0.0677	2.6400e-003	0.0704	0.0195	2.5200e-003	0.0220						
Worker	0.1841	0.1133	1.4069	4.3800e-003	0.5422	2.7700e-003	0.5449	0.1438	2.5500e-003	0.1464						
Total	**0.1953**	**0.5570**	**1.5624**	**6.3900e-003**	**0.6099**	**5.4100e-003**	**0.6153**	**0.1633**	**5.0700e-003**	**0.1684**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2024

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	0.5950	5.9739	7.0675	0.0114		0.2824	0.2824		0.2598	0.2598						
Total	**0.5950**	**5.9739**	**7.0675**	**0.0114**		**0.2824**	**0.2824**		**0.2598**	**0.2598**						

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						
Vendor	0.0112	0.4437	0.1555	2.0100e-003	0.0677	2.6400e-003	0.0704	0.0195	2.5200e-003	0.0220						
Worker	0.1841	0.1133	1.4069	4.3800e-003	0.5422	2.7700e-003	0.5449	0.1438	2.5500e-003	0.1464						
Total	**0.1953**	**0.5570**	**1.5624**	**6.3900e-003**	**0.6099**	**5.4100e-003**	**0.6153**	**0.1633**	**5.0700e-003**	**0.1684**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2025

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	0.5510	5.4820	7.0282	0.0114		0.2413	0.2413		0.2220	0.2220						
Total	**0.5510**	**5.4820**	**7.0282**	**0.0114**		**0.2413**	**0.2413**		**0.2220**	**0.2220**						

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						
Vendor	0.0108	0.4394	0.1530	1.9700e-003	0.0677	2.6300e-003	0.0704	0.0195	2.5100e-003	0.0220						
Worker	0.1738	0.1025	1.3191	4.2300e-003	0.5422	2.6400e-003	0.5448	0.1438	2.4300e-003	0.1462						
Total	**0.1845**	**0.5419**	**1.4720**	**6.2000e-003**	**0.6099**	**5.2700e-003**	**0.6152**	**0.1633**	**4.9400e-003**	**0.1683**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2025

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	0.5510	5.4820	7.0282	0.0114		0.2413	0.2413		0.2220	0.2220						
Total	**0.5510**	**5.4820**	**7.0282**	**0.0114**		**0.2413**	**0.2413**		**0.2220**	**0.2220**						

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						
Vendor	0.0108	0.4394	0.1530	1.9700e-003	0.0677	2.6300e-003	0.0704	0.0195	2.5100e-003	0.0220						
Worker	0.1738	0.1025	1.3191	4.2300e-003	0.5422	2.6400e-003	0.5448	0.1438	2.4300e-003	0.1462						
Total	**0.1845**	**0.5419**	**1.4720**	**6.2000e-003**	**0.6099**	**5.2700e-003**	**0.6152**	**0.1633**	**4.9400e-003**	**0.1683**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

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	0.5510	5.4820	7.0282	0.0114		0.2413	0.2413		0.2220	0.2220						
Total	**0.5510**	**5.4820**	**7.0282**	**0.0114**		**0.2413**	**0.2413**		**0.2220**	**0.2220**						

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						
Vendor	0.0105	0.4347	0.1511	1.9300e-003	0.0677	2.6100e-003	0.0703	0.0195	2.4900e-003	0.0220						
Worker	0.1645	0.0935	1.2440	4.1000e-003	0.5422	2.5100e-003	0.5447	0.1438	2.3100e-003	0.1461						
Total	**0.1750**	**0.5283**	**1.3951**	**6.0300e-003**	**0.6099**	**5.1200e-003**	**0.6150**	**0.1633**	**4.8000e-003**	**0.1681**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

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	0.5510	5.4820	7.0282	0.0114		0.2413	0.2413		0.2220	0.2220						
Total	**0.5510**	**5.4820**	**7.0282**	**0.0114**		**0.2413**	**0.2413**		**0.2220**	**0.2220**						

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						
Vendor	0.0105	0.4347	0.1511	1.9300e-003	0.0677	2.6100e-003	0.0703	0.0195	2.4900e-003	0.0220						
Worker	0.1645	0.0935	1.2440	4.1000e-003	0.5422	2.5100e-003	0.5447	0.1438	2.3100e-003	0.1461						
Total	**0.1750**	**0.5283**	**1.3951**	**6.0300e-003**	**0.6099**	**5.1200e-003**	**0.6150**	**0.1633**	**4.8000e-003**	**0.1681**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2026

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	0.5638	4.9206	7.0257	0.0113		0.2186	0.2186		0.2046	0.2046						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.5638**	**4.9206**	**7.0257**	**0.0113**		**0.2186**	**0.2186**		**0.2046**	**0.2046**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0449	0.0255	0.3393	1.1200e-003	0.1479	6.9000e-004	0.1486	0.0392	6.3000e-004	0.0399						
Total	**0.0449**	**0.0255**	**0.3393**	**1.1200e-003**	**0.1479**	**6.9000e-004**	**0.1486**	**0.0392**	**6.3000e-004**	**0.0399**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2026

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	0.5638	4.9206	7.0257	0.0113		0.2186	0.2186		0.2046	0.2046						
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						
Total	**0.5638**	**4.9206**	**7.0257**	**0.0113**		**0.2186**	**0.2186**		**0.2046**	**0.2046**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0449	0.0255	0.3393	1.1200e-003	0.1479	6.9000e-004	0.1486	0.0392	6.3000e-004	0.0399						
Total	**0.0449**	**0.0255**	**0.3393**	**1.1200e-003**	**0.1479**	**6.9000e-004**	**0.1486**	**0.0392**	**6.3000e-004**	**0.0399**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2026

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	27.0558					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515						
Total	**27.2267**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0324	0.0184	0.2450	8.1000e-004	0.1068	4.9000e-004	0.1073	0.0283	4.6000e-004	0.0288						
Total	**0.0324**	**0.0184**	**0.2450**	**8.1000e-004**	**0.1068**	**4.9000e-004**	**0.1073**	**0.0283**	**4.6000e-004**	**0.0288**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2026

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	27.0558					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515						
Total	**27.2267**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**						

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						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0324	0.0184	0.2450	8.1000e-004	0.1068	4.9000e-004	0.1073	0.0283	4.6000e-004	0.0288						
Total	**0.0324**	**0.0184**	**0.2450**	**8.1000e-004**	**0.1068**	**4.9000e-004**	**0.1073**	**0.0283**	**4.6000e-004**	**0.0288**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.3024	1.4145	12.2492	0.0256	3.0081	0.0198	3.0278	0.8013	0.0184	0.8197						
Unmitigated	1.3024	1.4145	12.2492	0.0256	3.0081	0.0198	3.0278	0.8013	0.0184	0.8197						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	500.48	451.72	376.28	1,358,472	1,358,472
Total	500.48	451.72	376.28	1,358,472	1,358,472

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.565387	0.062253	0.175474	0.116234	0.023574	0.006359	0.009156	0.006316	0.000699	0.000586	0.028465	0.000937	0.004559

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0198	0.1690	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137						
NaturalGas Unmitigated	0.0198	0.1690	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137						

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	1833.96	0.0198	0.1690	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137						
Total		**0.0198**	**0.1690**	**0.0719**	**1.0800e-003**		**0.0137**	**0.0137**		**0.0137**	**0.0137**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	1.83396	0.0198	0.1690	0.0719	1.0800e-003		0.0137	0.0137		0.0137	0.0137						
Total		**0.0198**	**0.1690**	**0.0719**	**1.0800e-003**		**0.0137**	**0.0137**		**0.0137**	**0.0137**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5264	0.0874	7.5829	4.0000e-004		0.0421	0.0421		0.0421	0.0421						
Unmitigated	2.5264	0.0874	7.5829	4.0000e-004		0.0421	0.0421		0.0421	0.0421						

Mercado Apartments - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.1705					0.0000	0.0000		0.0000	0.0000						
Consumer Products	2.1282					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						
Landscaping	0.2277	0.0874	7.5829	4.0000e-004		0.0421	0.0421		0.0421	0.0421						
Total	**2.5264**	**0.0874**	**7.5829**	**4.0000e-004**		**0.0421**	**0.0421**		**0.0421**	**0.0421**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.1705					0.0000	0.0000		0.0000	0.0000						
Consumer Products	2.1282					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						
Landscaping	0.2277	0.0874	7.5829	4.0000e-004		0.0421	0.0421		0.0421	0.0421						
Total	**2.5264**	**0.0874**	**7.5829**	**4.0000e-004**		**0.0421**	**0.0421**		**0.0421**	**0.0421**						

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation