Clairemont Village Project

Air Quality Technical Report

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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 (cont.)

SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego County 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 Clairemont Village Project (Project), located in the city of San Diego. The Project entails redevelopment of a small portion of an existing shopping center into a 224-unit, five-story multi-family residential apartment building over two levels of parking. The residential component of the building would be 262,624 square feet and the parking component would be 124,449 square feet.

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 County 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 Clairemont Village 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 3001 through 3089 Clairemont Drive (Assessor's Parcel Numbers 425-680-09 and 425-680-10) in the Clairemont Mesa community of the City of San Diego (City); refer to Figure 1, *Regional Location*. The 12.96-acre Clairemont Village Shopping Center is bounded by multi-family residences to the north, Cowley Way to the east, Field Street to the south, Burgener Boulevard to the southwest, and Clairemont Drive to the northwest. The proposed Project improvements would occur in the eastern portion of the shopping center, at the northwest corner of Field Street and Cowley Way, within a 2.67-acre area identified as the area of impact (refer to Figure 2, *Aerial Photograph*). The Project site has a General Plan land use designation of Commercial Employment, Retail, and Services and a Clairemont Mesa Community Plan land use designation of Commercial. The Clairemont Mesa Community Plan designates the total 12.96-acre site as within Community Plan Implementation Overlay Zone (CPIOZ) – Type B. The property is zoned CC-1-3, which permits residential development at a density of one unit per 1,500 square feet (SF) of lot area (San Diego Municipal Code Section 131.0531 Table 131-05E). This would allow for up to 376 units on the 12.96-acre property.

1.3 PROJECT DESCRIPTION

The Project entails redevelopment of 2.67 acres of the existing shopping center into a 224-unit, 5-story multi-family residential apartment building over two levels of parking (refer to Figure 3, *Site Plan*). The residential component of the building would be 262,624 SF and the parking component would be 124,449 SF. Approximately 342 parking spaces would be provided within the parking garage consisting of one partially below-grade level and one at-grade level. In addition, there are 43 retail parking spaces to be shared with residents and their guests between the hours of 6:00 p.m. and 9:00 a.m. Therefore, 385 parking spaces would be provided for residential use. There are two points of entry to the apartment parking garage located on site off Field Street and Cowley Way. The Project would include demolition of approximately 3,770 SF of existing commercial retail space for provision of a fire access lane around the proposed building, leaving 120,313 SF of existing community retail. The applicant is also processing a lot line adjustment on the subject property.

1.4 CONSTRUCTION BEST MANAGEMENT PRACTICES

The Project would incorporate best management practices (BMPs) during construction to reduce emissions of fugitive dust. San Diego County 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.

The Project would also exceed the requirements of SDAPCD Rule 67 by using no-volatile organic compound (VOC) coatings.

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)
- 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 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
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 (H_2S), 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), PM_{10}, and $PM_{2.5}$. 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 west and the average wind speed is 5.5 mph (Iowa Environmental Mesonet 2021). The annual average maximum temperature in the Project area is approximately 67°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 San Diego-Kearny Villa Road monitoring station located near Marine Corps Air Station Miramar, approximately 5.3 miles northeast of the Project site. Air quality data for this monitoring station are shown in Table 3, *Air Quality Monitoring Data.*

Table 3
AIR QUALITY MONITORING DATA

Pollutant	2020	2021	2022
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.123	0.095	0.095
Days above 1-hour state standard (>0.09 ppm)	2	1	1
Maximum 8-hour concentration (ppm)	0.102	0.072	0.083
Days above 8-hour state standard (>0.070 ppm)	12	2	2
Days above 8-hour federal standard (>0.075 ppm)	10	1	2
Carbon Monoxide (CO)			
Maximum 8-hour concentration (ppm)	*	*	*
Days above state or federal standard (>9.0 ppm)	*	*	*
Respirable Particulate Matter (PM_{10})			
Maximum 24-hour concentration (µg/m^3)	*	*	*
Days above state standard (>50 µg/m^3)	*	*	*
Days above federal standard (>150 µg/m^3)	*	*	*
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration (µg/m^3)	47.5	20.9	13.9
Days above federal standard (>35 µg/m^3)	2	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.052	0.060	0.051
Days above state 1-hour standard (0.18 ppm)	0	0	0

Source: CARB 2024
*Insufficient data available
ppm = parts per million, µg/m^3 = micrograms per cubic meter

From 2020 to 2022, monitoring data at the San Diego-Kearny Villa Road station show acceptable levels of NO_2. The federal $PM_{2.5}$ standard was violated twice in 2020. The state 1-hour ozone standard was violated twice in 2020, once in 2021, and once in 2022. The state 8-hour ozone standard was violated 12 times in 2020, two times in 2021, and two times in 2022, and the federal 8-hour ozone standard was violated 10 times in 2020, once in 2021, and twice in 2022.

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 2022.1 (California Air Pollution Control Officers Association [CAPCOA] 2022). 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 2022.1. CalEEMod contains OFFROAD2011 and EMFAC2021 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, underground utilities installation, excavation, building construction, and paving.

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	1/1/2025	1/29/2025
Clearing and Grubbing	7/1/2025	7/9/2025
Grading	7/10/2025	7/18/2025
Underground Utilities	7/19/2025	9/9/2025
Excavation	7/20/2025	9/1/2025
Building Construction	9/2/2025	6/18/2027
Paving	6/4/2027	6/18/2027

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	3
	Rubber Tired Dozer	1
Clearing and Grubbing	Grader	1
	Tractor/Loader/Backhoe	1
	Scraper	1
Grading	Grader	1
	Rubber Tired Dozer	1
	Tractor/Loader/Backhoe	2
Underground Utilities	Excavator	1
	Tractor/Loader/Backhoe	3
Excavation	Grader	1
	Rubber Tired Dozer	1
	Tractor/Loader/Backhoe	2
Building Construction	Crane	1
	Forklift	2
	Generator Set	1
	Tractor/Loader/Backhoe	1
	Welder	3

Construction Activity	Equipment	Number
Paving	Cement and Mortar Mixer	1
	Paver	1
	Paving Equipment	2
	Roller	2
	Tractor/Loader/Backhoe	1

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

Project construction would involve the demolition of a portion of an existing structure totaling 3,770 SF, soil movement (cut and fill) during grading, and excavation for the proposed structure. The export of demolition materials and the export of cut soil 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 (HWL 2022), approximately 2,990 tons of waste is expected to be generated during demolition of existing structures. For grading/excavation, the Project would require 29,000 cubic yards of cut and 3,000 cubic yards of fill for a net export of 26,000 cubic yards (HWL 2022).

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 low-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. Based on the Local Mobility Analysis prepared for the Project (Urban Systems Associates, Inc. 2023), the Project would generate 1,792 average daily trips (ADT). CalEEMod default vehicle speeds, trip purpose, and trip distances were applied to the trip types as analyzed in the Local Mobility Analysis.

4.2 SIGNIFICANCE CRITERIA

The City (2022a) has approved guidelines for determining significance based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, 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 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, which are persons in the population who are particularly susceptible to health effects due to exposure to an air contaminant than is the population at large (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes), to substantial pollutant concentrations; or

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

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 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 2022a and SCAQMD 2019
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 (SDAPCD 2020) and RAQS (SDAPCD 2016), 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. If 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 Commercial Employment, Retail, and Services and a Community Plan land use designation of Commercial. The Community Plan provides greater specificity of land use than the General Plan and does not identify a specific residential density for mixed-use development at the Project site, nor does it preclude residential development. The Project does not require a general plan amendment or a community plan amendment and is therefore considered consistent with the allowable land use of the site. In addition, the property is zoned CC-1-3, which permits residential development at a density of one unit per 1,500 SF of lot area (San Diego Municipal Code Section 131.0531 Table 131-05E). This would allow for up to 376 units on the 12.96-acre property. The Project would provide 224 units and would therefore be within the allowable development intensity of the site. Since the Project is consistent with the City's planned land use for the site, and since this local jurisdiction information is the information used by SANDAG to estimate projected growth for the region which is in turn incorporated into the assumptions used in Attainment Plan and RAQS, 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

Year	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Demolition – 2025	2	18	17	<0.5	3	1
Clearing and Grubbing – 2025	1	11	11	<0.5	1	1
Grading – 2025	2	14	15	<0.5	3	2
Underground Utilities – 2025	<0.5	4	7	<0.5	<0.5	<0.5
Excavation – 2025	2	24	19	<0.5	6	3
Building Construction – 2025	2	13	23	<0.5	3	1
Building Construction – 2026	2	12	22	<0.5	3	1
Building Construction – 2027	2	12	21	<0.5	3	1
Paving – 2027	1	6	9	<0.5	<0.5	<0.5
Maximum Daily Emissions[1]	**3**	**28**	**30**	**<0.5**	**6**	**3**
SDAPCD Thresholds	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)

[1] Maximum daily emissions of VOC occur when underground utility installation and building construction overlap in 2025. Maximum daily emissions of all other pollutants occur when underground utility installation and excavation overlap in 2025.

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 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	7	<0.5	19	<0.5	<0.5	<0.5
Energy	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Mobile	6	4	40	<0.5	9	2
Total Daily Emissions	**13**	**4**	**59**	**<0.5**	**9**	**2**
SDAPCD Thresholds	*75*	*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 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. 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.

According to the Local Mobility Analysis prepared for the Project (Urban Systems Associates, Inc. 2023), all analyzed intersections, including the Clairemont Drive/Burgener Boulevard, Field Street/Burgener Boulevard, Mt. Acadia Boulevard/Cowley Way, Iroquois Avenue/Clairemont Drive, Iroquois Avenue/ Cowley Way, Project Driveway/Field Street, and Project Driveway/Cowley Way intersections, would operate at LOS D or better with Project implementation. The Project would not increase average delay at signalized intersections operating at LOS E or F or cause an intersection that would operate at LOS D or better without the Project to operate at LOS E or F with the Project. 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.

In comparison with the 30-year exposure period, the construction period for the Project would be relatively short (estimated to be approximately 2.5 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 6 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. 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 a 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. The closest potential source of TACs to the proposed residential building is the dry cleaning facility located to the northwest at a distance of approximately 550 feet, which is greater than the CARB-recommended 300-foot siting distance. 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 Refuse, Organic Waste, and Recyclable Materials Storage Regulations (Chapter 14, Article 2, Division 8 of the City's Municipal Code [City 2022b]; HWL 2022), 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

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Appendix A

CalEEMod Output