

WOODCREST RETAIL CENTER

AIR QUALITY ANALYSIS



Prepared By:

Haseeb Qureshi | hqureshi@urbanxroads.com

Alyssa Barnett | abarnett@urbanxroads.com

Shannon Wong | swong@urbanxroads.com

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
ES.1 Summary of Findings.....	1
ES.2 Regulatory Requirements	1
1 INTRODUCTION	4
1.1 Site Location	4
1.2 Project Description	4
2 AIR QUALITY SETTING	9
2.1 South Coast Air Basin.....	9
2.2 Regional Climate	9
2.3 Wind Patterns and Project Location	10
2.4 Air Pollutants	10
2.5 Existing Air Quality	19
2.6 Regional Air Quality	22
2.7 Local Air Quality	22
2.8 Regulatory Background	23
3 PROJECT SITE EXISTING USES EMISSIONS SUMMARY.....	26
4 PROJECT AIR QUALITY IMPACT.....	27
4.1 Introduction	27
4.2 Standards of Significance	27
4.3 Models Employed To Analyze Air Quality	28
4.4 Construction Emissions	28
4.5 Operational Emissions.....	32
4.6 Localized Air Quality Impacts.....	38
4.7 CO “Hot Spot” Analysis.....	44
4.8 AQMP	44
4.9 Potential Impacts From Gasoline Fuel Dispensing	47
4.10 Potential Impacts to Sensitive Receptors	47
4.11 Odors	49
4.12 Cumulative Impacts.....	49
5 REFERENCES	51
6 CERTIFICATION	53

APPENDICES

APPENDIX 2.1: STATE/FEDERAL ATTAINMENT STATUS OF CRITERIA POLLUTANTS
APPENDIX 3.1: CALFEEMOD EXISTING EMISSIONS MODEL OUTPUTS
APPENDIX 4.1: CALFEEMOD BASE DEVELOPMENT CONCEPT EMISSIONS MODEL OUTPUTS
APPENDIX 4.2: CALFEEMOD PARCEL 1 OPTION EMISSIONS MODEL OUTPUTS
APPENDIX 4.3: AERMOD LOCALIZED EMISSIONS MODEL OUTPUTS

LIST OF EXHIBITS

EXHIBIT 1-A: LOCATION MAP	6
EXHIBIT 1-B: EXISTING USES	7
EXHIBIT 1-C: SITE PLAN	8
EXHIBIT 4-A: 2-MILE RADIUS OF RETAIL SERVICES	34
EXHIBIT 4-B: RECEPTOR LOCATIONS	41

LIST OF TABLES

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS.....	1
TABLE 1-1: WOODCREST RETAIL CENTER DEVELOPMENT CONCEPT	5
TABLE 2-1: CRITERIA POLLUTANTS (1 OF 7).....	11
TABLE 2-1: CRITERIA POLLUTANTS (2 OF 7)	12
TABLE 2-1: CRITERIA POLLUTANTS (3 OF 7).....	13
TABLE 2-1: CRITERIA POLLUTANTS (4 OF 7)	14
TABLE 2-1: CRITERIA POLLUTANTS (5 OF 7).....	15
TABLE 2-1: CRITERIA POLLUTANTS (6 OF 7)	16
TABLE 2-1: CRITERIA POLLUTANTS (7 OF 7).....	17
TABLE 2-2: ADDITIONAL POLLUTANTS (1 OF 2).....	17
TABLE 2-2: ADDITIONAL POLLUTANTS (2 OF 2).....	18
TABLE 2-3: AMBIENT AIR QUALITY STANDARDS (1 OF 2).....	20
TABLE 2-3: AMBIENT AIR QUALITY STANDARDS (2 OF 2).....	21
TABLE 2-4: ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SCAB	22
TABLE 2-5: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2021-2023	23
TABLE 3-1: EMISSIONS FROM EXISTING DEVELOPMENT	26
TABLE 4-1: REGIONAL EMISSIONS SIGNIFICANCE THRESHOLDS	27
TABLE 4-2: LOCALIZED EMISSIONS SIGNIFICANCE THRESHOLDS	28
TABLE 4-3: CONSTRUCTION DURATION	30
TABLE 4-4: CONSTRUCTION EQUIPMENT ASSUMPTIONS.....	30
TABLE 4-5: CONSTRUCTION TRIP ASSUMPTIONS.....	31
TABLE 4-6: BASE DEVELOPMENT CONCEPT CONSTRUCTION EMISSIONS SUMMARY	31
TABLE 4-7: PARCEL 1 OPTION CONSTRUCTION EMISSIONS SUMMARY	32
TABLE 4-8: SUMMARY OF PEAK OPERATIONAL EMISSIONS – BASE DEVELOPMENT CONCEPT	37
TABLE 4-9: SUMMARY OF PEAK OPERATIONAL EMISSIONS – PARCEL 1 OPTION	38
TABLE 4-10: CONSTRUCTION LOCALIZED SIGNIFICANCE SUMMARY – BASE DEVELOPMENT CONCEPT	42
TABLE 4-11: CONSTRUCTION LOCALIZED SIGNIFICANCE SUMMARY – PARCEL 1 OPTION	42
TABLE 4-12: OPERATIONAL LOCALIZED SIGNIFICANCE SUMMARY – BASE DEVELOPMENT CONCEPT.....	43
TABLE 4-13: OPERATIONAL LOCALIZED SIGNIFICANCE SUMMARY – PARCEL 1 OPTION	43

LIST OF ABBREVIATED TERMS

$\mu\text{g}/\text{m}^3$	Microgram per Cubic Meter
1992 CO Plan	1992 Federal Attainment Plan for Carbon Monoxide
1993 CEQA Handbook	SCAQMD's CEQA Air Quality Handbook (1993)
2016-2040 RTP/SCS	2016-2040 Regional Transportation Plan/Sustainable Communities Strategy
AB 2595	California Clean Air Act
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
APN	Assessor's Parcel Number
AQIA	Air Quality Impact Analysis
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
Brief	Brief of Amicus Curiae by the SCAQMD in the Friant Ranch Case
C_2Cl_4	Perchloroethylene
C_4H_6	1,3-butadiene
C_6H_6	Benzene
$\text{C}_2\text{H}_3\text{Cl}$	Vinyl Chloride
$\text{C}_2\text{H}_4\text{O}$	Acetaldehyde
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEQA Guidelines	2019 CEQA Statute and Guidelines
CH_2O	Formaldehyde
CO	Carbon Monoxide
COH	Coefficient of Haze
COHb	Carboxyhemoglobin
County	County of Riverside
Cr(VI)	Chromium
EIR	Environmental Impact Report
EMFAC	Emissions FACTor Model
EPA	Environmental Protection Agency
GHG	Greenhouse Gas
GVWR	Gross Vehicle Weight Rating

H ₂ S	Hydrogen Sulfide
HI	Hazard Index
hp	Horsepower
lbs	Pounds
lbs/day	Pounds Per Day
LST	Localized Significance Threshold
LST Methodology	Final Localized Significance Threshold Methodology
MICR	Maximum Individual Cancer Risk
MM	Mitigation Measures
mph	Miles Per Hour
MWELO	California Department of Water Resources' Model Water Efficient
N ₂	Nitrogen
N ₂ O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
O ₂	Oxygen
O ₃	Ozone
O ₂ Deficiency	Chronic Hypoxemia
OBD-II	On-Board Diagnostic
ODC	Ozone Depleting Compounds
Pb	Lead
PM	Particulate Matter
PM ₁₀	Particulate Matter 10 microns in diameter or less
PM _{2.5}	Particulate Matter 2.5 microns in diameter or less
ppm	Parts Per Million
Project	Woodcrest Retail Center
RECLAIM	Regional Clean Air Incentives Market
ROG	Reactive Organic Gases
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
sf	Square Feet
SIPs	State Implementation Plans
SO ₂	Sulfur Dioxide
SO ₄	Sulfates
SO _x	Sulfur Oxides
SRA	Source Receptor Area
TAC	Toxic Air Contaminant
Title 24	California Building Code

TITLE I	Non-Attainment Provisions
TITLE II	Mobile Sources Provisions
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

EXECUTIVE SUMMARY

ES.1 SUMMARY OF FINDINGS

The results of this Woodcrest Retail Center Air Quality Impact Analysis (AQIA) are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the CEQA Guidelines (CEQA Guidelines) (1). Table ES-1 shows the findings of significance for each potential air quality impact under CEQA before and after any required mitigation measures (MM) described below.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Regional Construction Emissions	4.4	<i>Less Than Significant</i>	<i>n/a</i>
Localized Construction Emissions	4.6	<i>Less Than Significant</i>	<i>n/a</i>
Regional Operational Emissions	4.5	<i>Less Than Significant</i>	<i>n/a</i>
Localized Operational Emissions	4.6	<i>Less Than Significant</i>	<i>n/a</i>
CO "Hot Spot" Analysis	4.7	<i>Less Than Significant</i>	<i>n/a</i>
Air Quality Management Plan	4.8	<i>Less Than Significant</i>	<i>n/a</i>
Sensitive Receptors	4.10	<i>Less Than Significant</i>	<i>n/a</i>
Odors	4.11	<i>Less Than Significant</i>	<i>n/a</i>
Cumulative Impacts	4.12	<i>Less Than Significant</i>	<i>n/a</i>

ES.2 REGULATORY REQUIREMENTS

There are numerous requirements that development projects must comply with by law, and that were put in place by federal, State, and local regulatory agencies for the improvement of air quality. Any operation or activity that might cause the emission of any smoke, fly ash, dust, fumes, vapors, gases, or other forms of air pollution, which can cause damage to human health, vegetation, or other forms of property, or can cause excessive soiling on any other parcel shall conform to the requirements of the South Coast Air Quality Management District (SCAQMD). SCAQMD Rules that are currently applicable to this Project are described below.

SCAQMD Rule 402

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any such persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Odor Emissions. All uses shall be operated in a manner such that no offensive odor is perceptible at or beyond the property line of that use.

SCAQMD Rule 403

This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent and reduce fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust and requires best available control measures to be applied to earth moving and grading activities.

Dust Control, Operations. Any operation or activity that might cause the emission of any smoke, fly ash, dust, fumes, vapors, gases, or other forms of air pollution, which can cause damage to human health, vegetation, or other forms of property, or can cause excessive soiling on any other parcel, shall conform to the requirements of the SCAQMD.

SCAQMD Rule 1113

This rule serves to limit the VOC content of architectural coatings used on projects in the SCAQMD. This rule applies to any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects.

SCAQMD Rule 1301

This rule is intended to provide that pre-construction review requirements to ensure that new or relocated facilities do not interfere with progress in attainment of the National Ambient Air Quality Standards (NAAQS), while future economic growth within the SCAQMD is not unnecessarily restricted. The specific air quality goal is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors. Rule 1301 also limits emission increases of ammonia, and Ozone Depleting Compounds (ODCs) from new, modified or relocated facilities by requiring the use of Best Available Control Technology (BACT).

SCAQMD Rule 1401

A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any 1 hour that is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States (U.S.) Bureau of Mines.

This page intentionally left blank

1 INTRODUCTION

This report presents the results of the AQIA prepared by Urban Crossroads, Inc., for the proposed Woodcrest Retail Center (Project). The purpose of this AQIA is to evaluate the potential impacts to air quality associated with construction and operation of the Project and recommend measures to mitigate impacts considered potentially significant in comparison to thresholds established by the SCAQMD.

1.1 SITE LOCATION

The Project site located on the northwest corner of Washington Street and Van Buren Boulevard in the Lake Mathews-Woodcrest area in the Lake Matthews Woodcrest area of the County of Riverside, as shown in Exhibit 1-A.

1.2 PROJECT DESCRIPTION

The site is largely undeveloped/vacant, however, there are two parcels developed with existing uses. Assessor's Parcel Number (APN) 273-141-004 is currently developed with in-line shops and a 7-Eleven with Gas Station. The 7-Eleven is approximately 2,400 square feet (with four vehicle fueling positions), the existing bike store is 2,400 square feet, the smoke shop is 1,200 square feet, the nail shop is 1,200 square feet, and the fish taco shop is 1,200 square feet. All existing structures on this parcel will be demolished and redeveloped as part of the Project. APN 273-141-005 is an existing Farmer Boys fast food restaurant that is approximately 2,640 square feet. This pad will be redeveloped as a 3,390 square foot restaurant pad with drive-through window. There is an existing bank (Valley Bank) located on APN 273-141-008) and is not-a-part of this Project and will be redeveloped under a future application. For the purposes of analysis, the assumed Project Opening Year is 2027. For context, location and configuration of existing uses are illustrated on the APN Map provided at Exhibit 1-B.

The Project proposes a Base Development Concept and a "Parcel 1 Option" development concept, presented in Exhibit 1-C. Under the Base Development Concept, Parcel 1 would be developed with a convenience store/retail gas station. Under the Parcel 1 Option, it would be developed with retail/restaurant uses. Under either development concept, the remainder of the Project site (Parcels 2 – 6) would be developed with a supermarket, shops, and restaurant uses as illustrated on Exhibit 1-C. Unless otherwise noted in this analysis, reference to the Project includes both the Base Development Concept and the Parcel 1 Option.

TABLE 1-1: WOODCREST RETAIL CENTER DEVELOPMENT CONCEPT

Site Plan Designation		Land Use(s)	Building Area ¹
Parcel 1	Pad A	Convenience Store/Gas Station	3,227 SF store w/ 6 Multi-Product Dispenser (MPD) Fuel Canopy (12 VFP)
Parcel 1 Option	Pad E	Drive-Through Restaurant	2,500 SF
Parcel 1 Option	Pad F	Retail/Sit-Down Restaurant	5,400 SF
Parcel 2	Pad B	Drive-Through Restaurant	3,500 SF
Parcel 3	Pad D	Drive-Through Restaurant (Farmer Boys)	3,390 SF
Parcel 4	Shops A	Retail *	5,000 SF
Parcel 5	Pad C	Drive-Through Restaurant	2,500 SF
Parcel 6	Market	Grocery Store (Stater Bros.)	43,403 SF
Lot A	--	Drainage/Stormwater Management	--
Total Project (Base)			61,020 Square Feet
Total Project (Parcel 1 Option)			65,693 Square Feet

Source: Woodcrest Retail Center Site Plan Concept, March 2025.

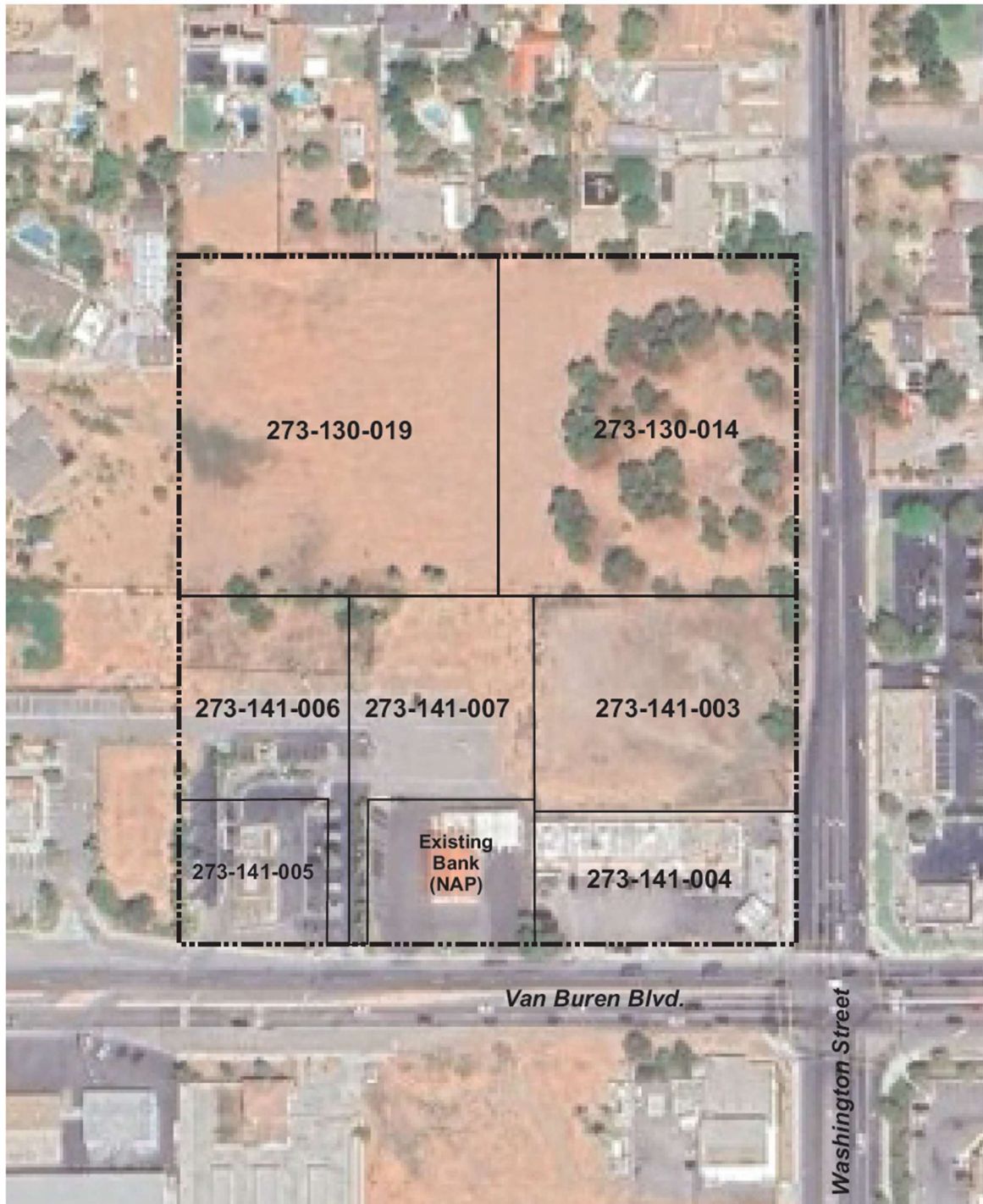
Note: * A proposed wireless communications antenna would be located within Parcel 4.

¹ VFP = Vehicle Fueling Positions; SF = Square Feet

EXHIBIT 1-A: LOCATION MAP

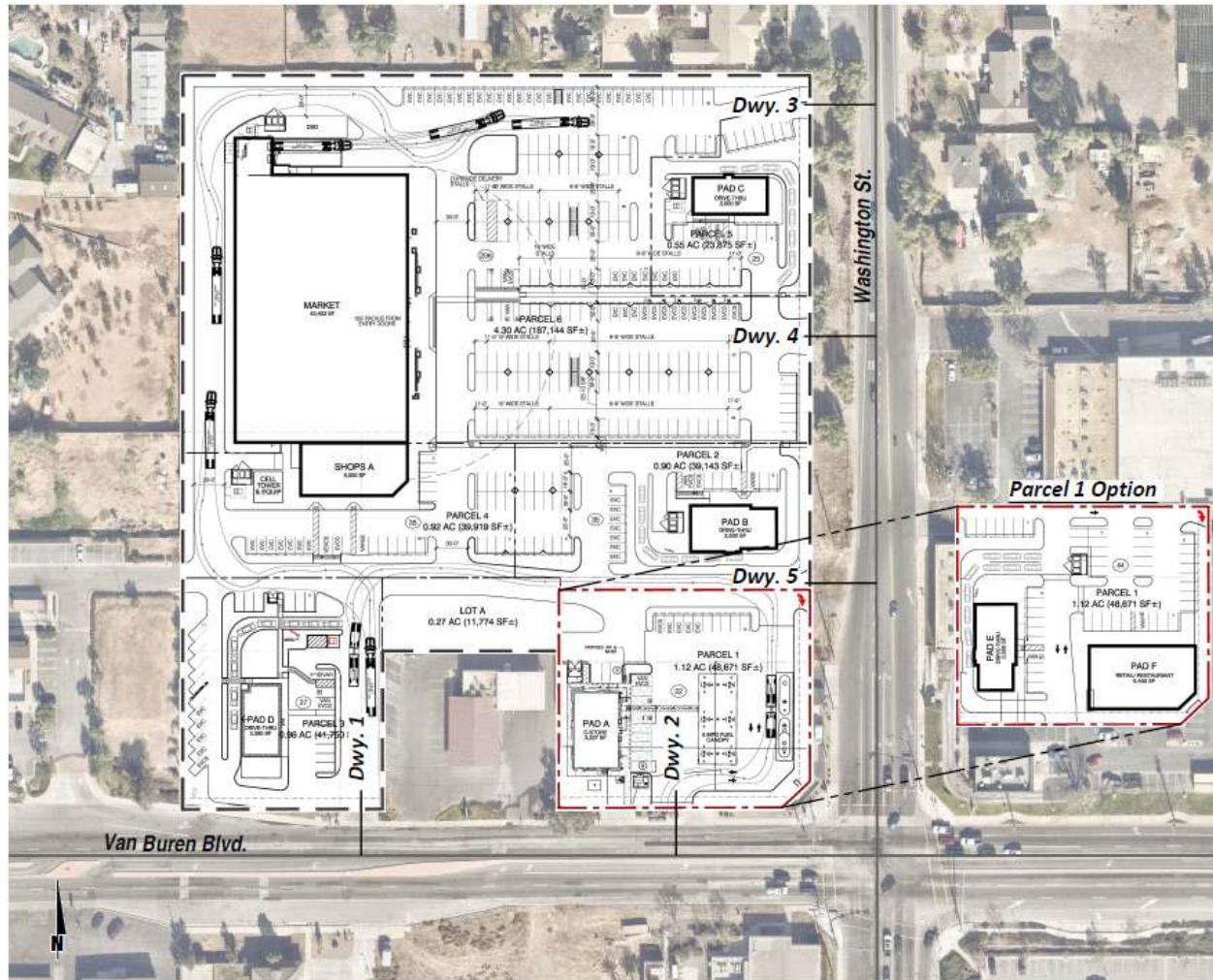


EXHIBIT 1-B: EXISTING USES



NOT TO SCALE
Source: Google Earth; Applied Planning, Inc.

EXHIBIT 1-C: SITE PLAN



2 AIR QUALITY SETTING

This section provides an overview of the existing air quality conditions in the Project area and region.

2.1 SOUTH COAST AIR BASIN

The Project site is located in the South Coast Air Basin (SCAB) within the jurisdiction of SCAQMD (2). The SCAQMD was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the SCAQMD is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. As previously stated, the Project site is located within the SCAB, a 6,745 square-mile subregion of the SCAQMD, which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County. The SCAB is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, and the San Diego Air Basin to the south.

2.2 REGIONAL CLIMATE

The regional climate has a substantial influence on air quality in the SCAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality. The annual average temperatures throughout the SCAB vary from the low to mid 60s (degrees Fahrenheit °[F]). Due to a decreased marine influence, the eastern portion of the SCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SCAB, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the SCAB have recorded maximum temperatures above 100°F.

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB, and the conversion of sulfur dioxide (SO₂) to sulfates (SO₄) is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the SCAB is 71% along the coast and 59% inland. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90% of the SCAB's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the SCAB with frequency being higher near the coast. Due to its generally clear weather, about three-quarters of available sunshine is received in the SCAB. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year, there are approximately 10 hours of possible sunshine, and on the longest day of the year, there are approximately 14½ hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed “Santa Anas” each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SCAB is the “Catalina Eddy,” a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections.

In the SCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level. A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as nitrogen oxides (NO_x) and carbon monoxide (CO) from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

2.3 WIND PATTERNS AND PROJECT LOCATION

The distinctive climate of the Project area and the SCAB is determined by its terrain and geographical location. The SCAB is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter. Wind patterns across the south coastal region are characterized by westerly and southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season.

2.4 AIR POLLUTANTS

2.4.1 Criteria Pollutants

Air quality regulations were first promulgated with the Federal Clean Air Act (CAA) of 1970. Air quality is defined by ambient air concentrations of seven “criteria air pollutants,” which are a group of common air pollutants identified by the United States Environmental Protection Agency (U.S.

EPA) to be of concern with respect to the health and welfare of the general public. Federal and State governments regulate criteria air pollutants by using ambient standards based on criteria regarding the health and/or environmental effects of each pollutant. The seven “criteria” air pollutants defined by the U.S. EPA are: (1) carbon monoxide (CO); (2) sulfur dioxide (SO₂); (3) nitrogen dioxide (NO₂); (4) ozone (O₃); (5) respirable particulate matter with a diameter of 10 microns or less (PM₁₀), (6) fine particulate matter with a diameter of 2.5 microns or less (PM_{2.5}), and (7) lead (Pb). Criteria pollutants are pollutants that are regulated through the development of human health based and/or environmentally based criteria for setting permissible levels. Criteria pollutants, their typical sources, and health effects are identified below (3).

TABLE 2-1: CRITERIA POLLUTANTS (1 OF 7)

Criteria Pollutant	Description	Sources	Health Effects
CO	CO is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone (O ₃), motor vehicles operating at slow speeds are the primary source of CO in the SCAB. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.	Any source that burns fuel such as automobiles, trucks, heavy construction equipment, farming equipment and residential heating.	Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of decreased oxygen (O ₂) supply to the heart. Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with O ₂ transport and competing with O ₂ to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for O ₂ supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (O ₂ deficiency) as seen at high altitudes.
SO ₂	SO ₂ is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant	Coal or oil burning power plants and industries,	A few minutes of exposure to low levels of SO ₂ can result in airway constriction

TABLE 2-1: CRITERIA POLLUTANTS (2 OF 7)

Criteria Pollutant	Description	Sources	Health Effects
SO ₂ (Continued)	mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO ₂ oxidizes in the atmosphere, it forms SO ₄ . Collectively, these pollutants are referred to as sulfur oxides (SO _x).	refineries, diesel engines	in some asthmatics, all of whom are sensitive to its effects. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO₂. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO₂. Animal studies suggest that despite SO₂ being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO₂ levels. In these studies, efforts to separate the effects of SO₂ from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically, or one pollutant alone is the predominant factor.

TABLE 2-1: CRITERIA POLLUTANTS (3 OF 7)

Criteria Pollutant	Description	Sources	Health Effects
NO ₂	NO₂ is a key component of nitrogen oxides (NO_x), which also includes nitric oxide (NO) and nitrous oxide (N₂O). NO_x compounds are primarily produced during combustion processes when nitrogen (N₂) reacts with oxygen (O₂). Both NO and NO₂ serve as precursors in the formation of O₃ and PM_{2.5}, making their monitoring crucial for air quality assessments. NO₂, being the more abundant form of NO_x in the atmosphere, has a relatively short lifespan of one to seven days, which enhances its significance as a major air pollutant. As a criteria air pollutant, NO₂ poses various health risks, including respiratory issues and increased vulnerability to infections. It also absorbs blue light, imparting a brownish-red hue to the atmosphere and contributing to reduced visibility and smog formation. Given that NO emissions largely convert to NO₂, the examination of NO_x emissions becomes essential when assessing potential air quality impacts. The concentrations of NO₂ are closely related to traffic density, often resulting in higher exposure levels for commuters in heavy traffic compared to what regional monitoring stations may indicate.	Any source that burns fuel such as automobiles, trucks, heavy construction equipment, farming equipment and residential heating.	Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposure to NO₂ at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO₂ in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups. In animals, exposure to levels of NO₂ considerably higher than ambient concentrations result in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of O₃ exposure increases when animals are exposed to a combination of O₃ and NO₂.
O ₃	O ₃ is a highly reactive and unstable gas that is formed when VOCs and NO _x , both	Formed when ROGs and NO _x react in the	Individuals exercising outdoors, children, and people with preexisting lung

TABLE 2-1: CRITERIA POLLUTANTS (4 OF 7)

Criteria Pollutant	Description	Sources	Health Effects
O ₃ (Continued)	byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. O ₃ concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.	presence of sunlight. ROG sources include any source that burns fuels, (e.g., gasoline, natural gas, wood, oil) solvents, petroleum processing and storage and pesticides.	disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible sub-groups for O₃ effects. Short-term exposure (lasting for a few hours) to O₃ at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Elevated O₃ levels are associated with increased school absences. In recent years, a correlation between elevated ambient O₃ levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple outdoor sports and reside in communities with high O₃ levels. O₃ exposure under exercising conditions is known to increase the severity of the responses described above. Animal studies suggest that exposure to a combination of pollutants that includes O₃ may be more toxic than exposure to O₃ alone. Although lung volume and resistance changes observed after a single exposure

TABLE 2-1: CRITERIA POLLUTANTS (5 OF 7)

Criteria Pollutant	Description	Sources	Health Effects
O ₃ (Continued)			diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.
Particulate Matter	PM₁₀: A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. Particulate matter pollution is a major cause of reduce visibility (haze) which is caused by the scattering of light and consequently the significant reduction air clarity. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. Additionally, it should be noted that PM₁₀ is considered a criteria air pollutant. PM_{2.5}: A similar air pollutant to PM₁₀ consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include SO₄ formed from SO₂ release from power plants and industrial facilities and nitrates that are formed from NO_x release from power plants, automobiles, and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and	Sources of PM₁₀ include road dust, windblown dust and construction. Also formed from other pollutants (acid rain, NO_x, SO_x, organics). Incomplete combustion of any fuel. PM_{2.5} comes from fuel combustion in motor vehicles, equipment, and industrial sources, residential and agricultural burning. Also formed from reaction of other pollutants (acid rain, NO_x, SO_x, organics).	A consistent correlation between elevated ambient fine particulate matter (PM₁₀ and PM_{2.5}) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in lifespan, and an increased mortality from lung cancer. Daily fluctuations in PM_{2.5} concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long term exposure to particulate matter.

TABLE 2-1: CRITERIA POLLUTANTS (6 OF 7)

Criteria Pollutant	Description	Sources	Health Effects
Particulate Matter (Continued)	weather conditions. PM _{2.5} is a criteria air pollutant.		The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of high levels of PM ₁₀ and PM _{2.5} .
Pb	Pb is a heavy metal that is highly persistent in the environment and is considered a criteria pollutant. In the past, the primary source of Pb in the air was emissions from vehicles burning leaded gasoline. The major sources of Pb emissions are ore and metals processing, particularly Pb smelters, and piston-engine aircraft operating on leaded aviation gasoline. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. It should be noted that the Project does not include operational activities such as metal processing or Pb acid battery manufacturing. As such, the Project is not anticipated to generate a quantifiable amount of Pb emissions.	Metal smelters, resource recovery, leaded gasoline, deterioration of Pb paint.	Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased Pb levels are associated with increased blood pressure. Pb poisoning can cause anemia, lethargy, seizures, and death; although it appears that there are no direct effects of Pb on the respiratory system. Pb can be stored in the bone from early age environmental exposure, and elevated blood Pb levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb because of previous

TABLE 2-1: CRITERIA POLLUTANTS (7 OF 7)

Criteria Pollutant	Description	Sources	Health Effects
Pb (Continued)			environmental Pb exposure of their mothers.

2.4.2 Additional Pollutants

The SCAQMD's primary focus is to achieve the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) for criteria pollutants. However, it also has a broader mandate to control emissions of air contaminants and safeguard public health. As a result, SCAQMD regulates additional pollutants beyond criteria pollutants, including reactive organic gases (ROGs), VOCs, and odors. Additional pollutants, their typical sources, and health effects are identified below (3).

TABLE 2-2: ADDITIONAL POLLUTANTS (1 OF 2)

Pollutant	Description	Sources	Health Effects
VOC	VOCs are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form O ₃ to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O ₃ , which is a	Organic chemicals are widely used as ingredients in household products. Paints, varnishes, and wax all contain organic solvents, as do many cleaning, disinfecting, cosmetic, degreasing and hobby products. Fuels are made up of organic chemicals. All of these products can release organic compounds while you are using them, and, to some degree, when they are stored.	Breathing VOCs can irritate the eyes, nose, and throat, can cause difficulty breathing and nausea, and can damage the central nervous system as well as other organs. Some VOCs can cause cancer. Not all VOCs have all these health effects, though many have several.

TABLE 2-2: ADDITIONAL POLLUTANTS (2 OF 2)

Pollutant	Description	Sources	Health Effects
VOC (Continued)	criteria pollutant. The terms VOC and ROG (see below) interchangeably.		
ROG	Similar to VOC, ROG's are also precursors in forming O ₃ and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and NO _x react in the presence of sunlight. ROG's are a criteria pollutant since they are a precursor to O ₃ , which is a criteria pollutant. The terms ROG and VOC (see previous) interchangeably.	Sources similar to VOCs.	Health effects similar to VOCs.
Odor	Odor means the perception experienced by a person when one or more chemical substances in the air come into contact with the human olfactory nerves (4).	Odors can come from many sources including animals, human activities, industry, natures, and vehicles.	Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, studies have shown that the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

2.5 EXISTING AIR QUALITY

Existing air quality is measured at established SCAQMD air quality monitoring stations. Monitored air quality is evaluated in the context of ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) currently in effect are shown in Table 2-3 (5).

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the state and federal standards. At the time of this AQIA, the most recent state and federal standards were updated by CARB on July 16, 2024, and are presented in Table 2-3. The air quality in a region is considered to be in attainment by the state if the measured ambient air pollutant levels for O₃, CO (except 8-hour Lake Tahoe), SO₂ (1 and 24 hour), NO₂, PM₁₀, and PM_{2.5} are not exceeded, and levels for all other criteria pollutants are not equaled or exceeded. It should be noted that the three-year period is presented for informational purposes and is not the basis for how the state assigns attainment status. Attainment status for a pollutant means that the SCAQMD meets the standards set by the EPA or the California EPA (CalEPA). Conversely, nonattainment means that an area has monitored air quality that does not meet the NAAQS or CAAQS standards. In order to improve air quality in nonattainment areas, a State Implementation Plan (SIP) is drafted by CARB. The SIP outlines the measures that the state will take to improve air quality. Once nonattainment areas meet the standards and additional redesignation requirements, the EPA will designate the area as a maintenance area (6).

TABLE 2-3: AMBIENT AIR QUALITY STANDARDS (1 OF 2)

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards ¹		National Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃) ⁸	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m ³)		0.070 ppm (137 µg/m ³)		
Respirable Particulate Matter (PM ₁₀) ⁹	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		—		
Fine Particulate Matter (PM _{2.5}) ⁹	24 Hour	—	—	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	9.0 µg/m ³	15.0 µg/m ³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	—	Non-Dispersive Infrared Photometry (NDIR)
	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)		—	—	
Nitrogen Dioxide (NO ₂) ¹⁰	1 Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m ³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		53 ppb (100 µg/m ³)	Same as Primary Standard	
Sulfur Dioxide (SO ₂) ¹¹	1 Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m ³)	
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (for certain areas) ¹¹	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas) ¹¹	—	
Lead ^{12,13}	30 Day Average	1.5 µg/m ³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m ³ (for certain areas) ¹²	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m ³		
Visibility Reducing Particles ¹⁴	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹²	24 Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

See footnotes on next page ...

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (7/16/24)

TABLE 2-3: AMBIENT AIR QUALITY STANDARDS (2 OF 2)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above $150 \mu\text{g}/\text{m}^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On February 7, 2024, the national annual PM2.5 primary standard was lowered from $12.0 \mu\text{g}/\text{m}^3$ to $9.0 \mu\text{g}/\text{m}^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at $35 \mu\text{g}/\text{m}^3$, as was the annual secondary standard of $15.0 \mu\text{g}/\text{m}^3$. The existing 24-hour PM10 standards (primary and secondary) of $150 \mu\text{g}/\text{m}^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard ($1.5 \mu\text{g}/\text{m}^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (7/16/24)

2.6 REGIONAL AIR QUALITY

Air pollution contributes to a wide variety of adverse health effects. The EPA has established NAAQS for seven of the most common air pollutants: CO, Pb, O₃, PM₁₀, PM_{2.5}, NO₂, and SO₂ which are known as criteria pollutants. The SCAQMD monitors levels of various criteria pollutants at 35 permanent monitoring stations and 2 single-pollutant source Pb air monitoring sites throughout the air district (7). On January 25, 2024, CARB adopted the proposed 2023 amendments to the state and national area designations. See Table 2-4 for attainment designations for the SCAB (8). Appendix 2.1 provides geographic representation of the state and federal attainment status for applicable criteria pollutants within the SCAB.

TABLE 2-4: ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SCAB

Criteria Pollutant	State Designation	Federal Designation
O ₃ - 1-hour standard	Nonattainment	--
O ₃ - 8-hour standard	Nonattainment	Nonattainment
PM ₁₀	Nonattainment	Attainment
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO ₂	Attainment	Unclassified/Attainment
SO ₂	Attainment	Unclassified/Attainment
PB ¹	Attainment	Unclassified/Attainment

Note: See Appendix 2.1 for a detailed map of State/National Area Designations within the SCAB

"--" = no standard.

2.7 LOCAL AIR QUALITY

The SCAQMD has designated general forecast areas and air monitoring areas (referred to as Source Receptor Areas [SRA]) throughout the district in order to inform Southern California residents about the air quality conditions. The Project site is located within the Metropolitan Riverside County 1 area (SRA 23). The Metropolitan Riverside County 1 (SRA 23) monitoring station is located approximately 8.45 miles northwest of the Project site and reports air quality statistics for O₃, CO, NO₂, PM₁₀, and PM_{2.5} data.

The most recent three (3) years of data available is shown in Table 2-5 and identifies the number of days ambient air quality standards were exceeded for the study area, which is considered to be representative of the local air quality at the Project site. Data for O₃, CO, NO₂, PM₁₀, and PM_{2.5} for 2021 through 2023 was obtained from the SCAQMD Air Quality Data Tables (9). Additionally, data for SO₂ has been omitted as attainment is regularly met in the SCAB and few monitoring stations measure SO₂ concentrations.

TABLE 2-5: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2021-2023

Pollutant	Standard	Year		
		2021	2022	2023
O ₃				
Maximum Federal 1-Hour Concentration (ppm)		0.117	0.122	0.139
Maximum Federal 8-Hour Concentration (ppm)		0.097	0.095	0.106
Number of Days Exceeding State 1-Hour Standard	> 0.09 ppm	20	30	48
Number of Days Exceeding State/Federal 8-Hour Standard	> 0.070 ppm	57	72	70
CO				
Maximum Federal 1-Hour Concentration	> 35 ppm	2.1	3.3	1.4
Maximum Federal 8-Hour Concentration	> 20 ppm	1.8	1.2	1.3
NO ₂				
Maximum Federal 1-Hour Concentration	> 0.100 ppm	0.052	0.056	0.055
Annual Federal Standard Design Value		0.014	0.013	0.012
PM ₁₀				
Maximum Federal 24-Hour Concentration (µg/m ³)	> 150 µg/m ³	76	153	166
Annual Federal Arithmetic Mean (µg/m ³)		34.2	37.0	32.7
Number of Days Exceeding Federal 24-Hour Standard	> 150 µg/m ³	0	0	1
Number of Days Exceeding State 24-Hour Standard	> 50 µg/m ³	16	55	43
PM _{2.5}				
Maximum Federal 24-Hour Concentration (µg/m ³)	> 35 µg/m ³	82.1	38.5	48.7
Annual Federal Arithmetic Mean (µg/m ³)	> 12 µg/m ³	12.58	10.8	10.47
Number of Days Exceeding Federal 24-Hour Standard	> 35 µg/m ³	10	1	1

ppm = Parts Per Million

µg/m³ = Microgram per Cubic Meter

Source: Data for O₃, CO, NO₂, PM₁₀, and PM_{2.5} was obtained from SCAQMD Air Quality Data Tables.

2.8 REGULATORY BACKGROUND

2.8.1 Federal Regulations

The EPA is responsible for setting and enforcing the NAAQS for O₃, CO, NO_x, SO₂, PM₁₀, and Pb (10). The EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of CARB. The Federal Clean Air Act (CAA) was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance (11). The CAA also mandates that states submit and implement SIPs for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and

incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions) (12) (13). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O_3 , NO_2 , SO_2 , PM_{10} , CO, $PM_{2.5}$, and Pb. The NAAQS were amended in July 1997 to include an additional standard for O_3 and to adopt a NAAQS for $PM_{2.5}$. Table 2-4 (previously presented) provides the NAAQS within the SCAB. Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and NO_x . NO_x is a collective term that includes all forms of NO_x which are emitted as byproducts of the combustion process.

2.8.2 California Regulations

CARB

CARB, which became part of CalEPA in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. AB 2595 mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for SO_4 , visibility, hydrogen sulfide (H_2S), and vinyl chloride (C_2H_3Cl). However, at this time, H_2S and C_2H_3Cl are not measured at any monitoring stations in the SCAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS (14) (10). Local air quality management districts, such as the SCAQMD, regulate air emissions from stationary sources such as commercial and industrial facilities. All air pollution control districts have been formally designated as attainment or non-attainment for each CAAQS.

Serious non-attainment areas are required to prepare Air Quality Management Plans (AQMP) that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development);
- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a 5% or more annual reduction in emissions or 15% or more in a period of three years for ROG, NO_x , CO and PM_{10} . However, air basins may use an alternative emission reduction strategy that achieves a reduction of less than 5% per year under certain circumstances.

Title 24 Energy Efficiency Standards and California Green Building Standards

California Code of Regulations (CCR) Title 24 Part 6: The California Energy Code was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption.

The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. CCR, Title 24, Part 11: California Green Building Standards Code (CALGreen) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect on August 1, 2009, and is administered by the California Building Standards Commission.

The 2022 California Title 24 Energy Standards became effective on January 1, 2023, with updates for the 2025 standards set to take effect on January 1, 2026. As the Project is expected to be completed in 2027, it will need to comply with the Title 24 Energy Standards in effect at that time, which may include further updates beyond the 2025 version.

CALGreen is updated on a regular basis, with the most recent approved update consisting of the 2025 California Green Building Code Standards that go into effect on January 1, 2026. The Project would be required to comply with the applicable standards in place at the time plan check submittals are made.

2.8.3 Regional Regulations

Air Quality Management Plan

Currently, the NAAQS and CAAQS are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of AQMP to meet the state and federal ambient air quality standards (15). AQMPs are updated regularly to ensure an effective reduction in emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy. A detailed discussion on the AQMP and Project consistency with the AQMP is provided in Section 4.10.

3 PROJECT SITE EXISTING USES EMISSIONS SUMMARY

As previously stated, portions of the Project site are currently developed with existing uses. Assessor's Parcel Number (APN) 273-141-004 is currently developed with in-line shops and a 7-Eleven with Gas Station. The 7-Eleven is approximately 2,400 square feet (with four vehicle fueling positions), the existing bike store is 2,400 square feet, the smoke shop is 1,200 square feet, the nail shop is 1,200 square feet, and the fish taco shop is 1,200 square feet. APN 273-141-005 is an existing Farmer Boys fast food restaurant that is approximately 2,640 square feet. The estimated operation-source emissions from the existing development are summarized on Table 3-1. Detailed operation model outputs are presented in Appendix 3.1.

TABLE 3-1: EMISSIONS FROM EXISTING DEVELOPMENT

Source	Emissions (lbs/day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀ T	PM _{2.5} T
Summer						
Mobile	6.80	2.98	24.10	0.04	3.26	0.85
Area	0.34	0.00	0.48	0.00	0.00	0.00
Energy	0.01	0.10	0.09	0.00	0.01	0.01
Fuel Dispensing	1.88	0.00	0.00	0.00	0.00	0.00
Maximum Daily Emissions	9.03	3.08	24.67	0.04	3.27	0.86
Winter						
Mobile	6.25	3.17	23.00	0.04	3.26	0.85
Area	0.26	0.00	0.00	0.00	0.00	0.00
Energy	0.01	0.10	0.09	0.00	0.01	0.01
Fuel Dispensing	1.88	0.00	0.00	0.00	0.00	0.00
Maximum Daily Emissions	8.40	3.27	23.09	0.04	3.27	0.86

For the purposes of CEQA analysis, the net effect of the Project emissions comprises of the total new Project emissions minus emissions generated by existing uses. That is, as provided for under CEQA, the baseline condition reflected in these analyses includes uses that exist at the Site, regardless of whether those uses are actively operational or temporarily inactive.

4 PROJECT AIR QUALITY IMPACT

4.1 INTRODUCTION

This study quantifies air quality emissions generated by construction and operation of the Project and addresses whether the Project conflicts with implementation of the SCAQMD's AQMP and Lead Agency planning regulations. The analysis of Project-generated air emissions determines whether the Project would result in a cumulatively considerable net increase of any criteria pollutant for which the SCAB is in non-attainment under an applicable NAAQS and CAAQS. Additionally, the Project has been evaluated to determine whether the Project would expose sensitive receptors to substantial pollutant concentrations and the impacts of odors. The significance of these potential impacts is described in the following sections.

4.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related air quality impacts are taken from the *CEQA Guidelines* (14 CCR §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would (1):

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The SCAQMD has developed regional and localized significance thresholds for criteria pollutants, as summarized at Table 4-1 (16). The SCAQMD's CEQA Air Quality Significance Thresholds (March 2023) indicate that any projects in the SCAB with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

TABLE 4-1: REGIONAL EMISSIONS SIGNIFICANCE THRESHOLDS

Pollutant	Construction	Operations
NO _x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM ₁₀	150 lbs/day	150 lbs/day
PM _{2.5}	55 lbs/day	55 lbs/day
SO _x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Pb	3 lbs/day	3 lbs/day

lbs/day = Pounds Per Day

ppm = Parts Per Million

µg/m³ = Micrograms Per Cubic Meter

TABLE 4-2: LOCALIZED EMISSIONS SIGNIFICANCE THRESHOLDS

Pollutant	Construction	Operations
NO _x	0.18 ppm	0.18 ppm
CO (1-hour average)	20 ppm	20 ppm
CO (8-hour average)	9 ppm	9 ppm
PM ₁₀	10.4 µg/m ³	2.5 µg/m ³
PM _{2.5}	10.4 µg/m ³	2.5 µg/m ³

4.3 MODELS EMPLOYED TO ANALYZE AIR QUALITY

4.3.1 CalEEMod

Land uses such as the Project affect air quality through construction-source and operational-source emissions. The California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released CalEEMod 2022 in May 2022. CalEEMod periodically releases updates, as such the latest version available at the time of this report has been utilized in this analysis. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5}) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (17). Accordingly, the latest version of CalEEMod has been used for this Project to determine construction and operational air quality emissions. Output from the model runs for both construction and operational activity are provided in Appendices 4.1 and 4.2.

4.4 CONSTRUCTION EMISSIONS

4.4.1 Construction Activities

Construction activities associated with the Project would result in emissions of VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5}. Construction-related emissions are expected from the following construction activities:

- Demolition
- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating

Demolition Activities

Portions of the Project are currently developed with existing uses/structures. Demolition of these structures would generate approximately 1,386 tons of debris. As required by the County, the Project Applicant would be required to recycle, reuse, compost, and/or salvage a minimum of 65% by weight of the material and/or waste generated on site. Based on the requirement for the Project to recycle, reuse, compost, and/or salvage 65% of the Project demolition debris, the net debris generated by

Project demolition activities would total 485.1 tons. Demolished material associated with demolition will be hauled off-site. It should be noted 1,386 tons¹ of demolition material was modeled in the analysis as a conservative measure.

Grading Activities

Dust is typically a major concern during grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called “fugitive emissions.” Fugitive dust emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). CalEEMod was utilized to calculate fugitive dust emissions resulting from this phase of activity. Based on Project specific grading plan, the Project would require approximately 6,741 cubic yards of export for earthwork activities.

Off-Site Utility and Infrastructure Improvements

To support the development of the Project, off-site improvements will be made. Washington Street and Van Buren Boulevard (along the Project site’s east and south boundaries, respectively) will be improved in accordance with County specifications. Additionally, public utility systems, including water and sanitary sewer, will be modified or extended to serve the Project facilities. These modifications may include, but are not limited to, new service connections, localized improvements, and/or realignment of existing service and distribution lines. Off-site construction activities are anticipated to be spread across multiple locations throughout the construction period, rather than occurring at a single site for its entirety. The impacts associated with these off-site activities are not expected to exceed those identified for the primary Project construction, as physical constraints in the off-site areas will limit the extent of activity.

4.4.2 Construction Duration

For purposes of analysis, construction will begin January 2026 and would last through January 2027. The construction schedule utilized in the analysis, shown in Table 4-3, represents a “conservative” analysis scenario. That is, should construction occur any time after the assumed dates, construction emissions would be reduced when compared to the levels presented here. This is due to the decrease in emission factors for construction equipment over time, and increasing stringency in emissions regulations.² The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per the *CEQA Guidelines* (1).

¹ The Project would require the demolition of approximately 8,400 sf of existing buildings and general site clearing (removal of surface debris, trees, vegetation). Using FEMA’s General Building Debris Formula $[8,400 \text{ sf (building area)} \times 20 \text{ ft (assumed average building Height)} \times 0.33 \text{ (to account for air space)}] / 27$, demolition of existing buildings is expected to generate 2,053 CY building debris. Applying a 50% contingency factor for general site removal debris, the Project demolition and site clearing would generate up to 3,080 CY of debris. Assuming a maximum mixed construction/demolition factor in California of 0.45 tons/CY, the total potential weight of construction debris is estimated to be 1,386 tons of debris.

² As shown in the CalEEMod User’s Guide Version 2022, Appendix G “Table G-11. Statewide Average Annual Offroad Equipment Emission Factors” as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

4.4.3 Construction Equipment

Consistent with industry standards and typical construction practices, each piece of equipment listed in Table 4-4 is assumed to operate up to a total of eight (8) hours per day, or more than two-thirds of the period during which construction activities are allowed pursuant to the County code.

TABLE 4-3: CONSTRUCTION DURATION

Construction Activity	Start Date	End Date	Days
Demolition	1/1/2026	1/29/2026	20
Site Preparation	1/30/2026	2/13/2026	10
Grading	2/14/2026	3/13/2026	20
Building Construction	3/16/2026	1/29/2027	230
Paving	1/4/2027	1/29/2027	20
Architectural Coating	1/4/2027	1/29/2027	20

TABLE 4-4: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Activity	Equipment ¹	Quantity	Hours
Demolition	Rubber Tired Dozers	2	8
	Excavators	3	8
	Concrete/Industrial Saws	1	8
Site Preparation	Rubber Tired Dozers	3	8
	Crawler Tractors	4	8
Grading	Graders	1	8
	Excavators	1	8
	Rubber Tired Dozers	1	8
	Crawler Tractors	3	8
Building Construction	Forklifts	3	8
	Generator Sets	1	8
	Cranes	1	8
	Welders	1	8
	Tractors/Loaders/Backhoes	3	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressors	1	8

¹ In order to account for fugitive dust emissions, Crawler Tractors were used in lieu of Tractors/Loaders/Backhoes.

4.4.4 On-Road Trips

Construction generates on-road vehicle emissions from vehicle usage for workers, vendors, and haul trucks commuting to and from the site. The number of worker, vendor, and hauling trips per phase is presented below in Table 4-5. Worker trips are based on CalEEMod defaults. It should be noted that for vendor trips, specifically, CalEEMod only assigns vendor trips to the Building Construction phase. Vendor trips would likely occur during all phases of construction. As such, the CalEEMod defaults for vendor trips have been adjusted based on a ratio of the total vendor trips to the number of days of each subphase of activity.

TABLE 4-5: CONSTRUCTION TRIP ASSUMPTIONS

Construction Activity	Worker Trips Per Day	Vendor Trips Per Day	Hauling Trips Per Day
Demolition	15	1	6
Site Preparation	18	0	0
Grading	15	1	42
Building Construction	21	8	0
Paving	15	0	0
Architectural Coating	4	0	0

4.4.5 Construction Emissions Summary

Base Development Concept

CalEEMod calculates maximum daily emissions for summer and winter periods. As such, the estimated maximum daily construction emissions without mitigation for both summer and winter periods are summarized in Table 4-6. Detailed unmitigated construction model outputs are presented in Appendix 4.1. Under the assumed scenarios, emissions resulting from the Base Development Concept construction would not exceed criteria pollutant thresholds established by the SCAQMD.

TABLE 4-6: BASE DEVELOPMENT CONCEPT CONSTRUCTION EMISSIONS SUMMARY

Year	Emissions (lbs/day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀ T	PM _{2.5} T
Summer						
2026	1.25	11.01	15.63	0.03	0.75	0.46
Winter						
2026	3.90	34.69	31.96	0.05	7.66	4.36
2027	22.20	18.64	27.57	0.04	1.28	0.78
Maximum Daily Emissions	22.20	34.69	31.96	0.05	7.66	4.36
SCAQMD Regional Thresholds	75	100	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

Source: CalEEMod construction-source (unmitigated) emissions are presented in Appendix 4.1.

Parcel 1 Option

CalEEMod calculates maximum daily emissions for summer and winter periods. As such, the estimated maximum daily construction emissions without mitigation for both summer and winter periods are summarized in Table 4-7. Detailed unmitigated construction model outputs are presented in Appendix 4.2. Under the assumed scenarios, emissions resulting from the Parcel 1 Option construction would not exceed criteria pollutant thresholds established by the SCAQMD.

TABLE 4-7: PARCEL 1 OPTION CONSTRUCTION EMISSIONS SUMMARY

Year	Emissions (lbs/day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀ T	PM _{2.5} T
Summer						
2026	1.26	11.02	15.78	0.03	0.78	0.47
Winter						
2026	3.90	34.69	31.96	0.05	7.66	4.36
2027	23.22	18.65	27.69	0.04	1.31	0.79
Maximum Daily Emissions	23.22	34.69	31.96	0.05	7.66	4.36
SCAQMD Regional Thresholds	75	100	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

Source: CalEEMod construction-source (unmitigated) emissions are presented in Appendix 4.2.

4.5 OPERATIONAL EMISSIONS

Operational activities associated with the Project would result in emissions of VOCs, NO_x, SO_x, CO, PM₁₀, and PM_{2.5}. Operational emissions are expected from the following primary sources:

- Mobile Source Emissions;
- Area Source Emissions;
- Energy Source Emissions;
- Gasoline Dispensing Emissions; and
- Stationary Source Emissions.

4.5.1 Mobile Source Emissions

The Project related operational air quality emissions derived primarily from vehicle trips generated by the Project. Trip characteristics available from the *Woodcrest Retail Center Traffic Study Scoping Agreement* were utilized in this analysis.

Per the Woodcrest Retail Center *Traffic Study Scoping Agreement*, the Base Development Concept is expected to generate a total of approximately 2,910 two-way vehicular trips per day and includes a 58% pass-by and 23% internal capture trip reduction to the gas station use, a 20% pass-by and 17% internal capture trip reduction to the supermarket use, a 38% pass-by and 7% internal capture trip reduction to the retail use, a 29% pass-by and 33% internal capture trip reduction to the fast-food

restaurant without drive-through window use, and a 36% pass-by and 35% internal capture trip reduction to the fast-food restaurant with drive-through window use (18)³.

Per the *Woodcrest Retail Center Traffic Study Scoping Agreement*, the Parcel 1 Option is expected to generate a total of approximately 3,160 two-way vehicular trips per day and includes a 15% pass-by and 39% internal capture trip reduction to the supermarket use, a 27% pass-by and 32% internal capture trip reduction to the retail use, a 30% pass-by and 31% internal capture trip reduction to the fast-food restaurant without drive-through window use, and a 37% pass-by and 32% internal capture trip reduction to the fast-food restaurant with drive-through window use (18)⁴.

4.5.1.1 Trip Length

As evaluated in the *Woodcrest Retail Center Vehicle Miles Traveled Screening Evaluation (VMT Evaluation)* (19), the Project consists of a variety of retail development that would serve the local community and lead to shorter trip lengths. As summarized in the VMT Evaluation, the Project results in a less than significant VMT impact as the Project is a local-serving retail use. Per the County of Riverside Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled (County Guidelines) (20), a local serving project shortens trips by putting goods and services closer to residence and businesses resulting in a lower overall reduction in VMT. The Project would create retail uses that will serve the nearby community that would otherwise have to travel further distances to seek the Project's provided services. As such, since the Project contains retail uses, is surrounded by residential land uses, and the project is local-serving in nature. Consistent with Project characteristics and context presented in the VMT evaluation, the analysis here assumes an average trip length for customers of 2 miles – as opposed to the 23.9-mile CalEEMod model default trip length value. Additionally, 96% of all trips are assumed to be customer trips, 3% of all trips are assumed to be workers, and 1% of all trips are assumed to be "other" trips. The estimated Project area of service is presented at Exhibit 4-A.

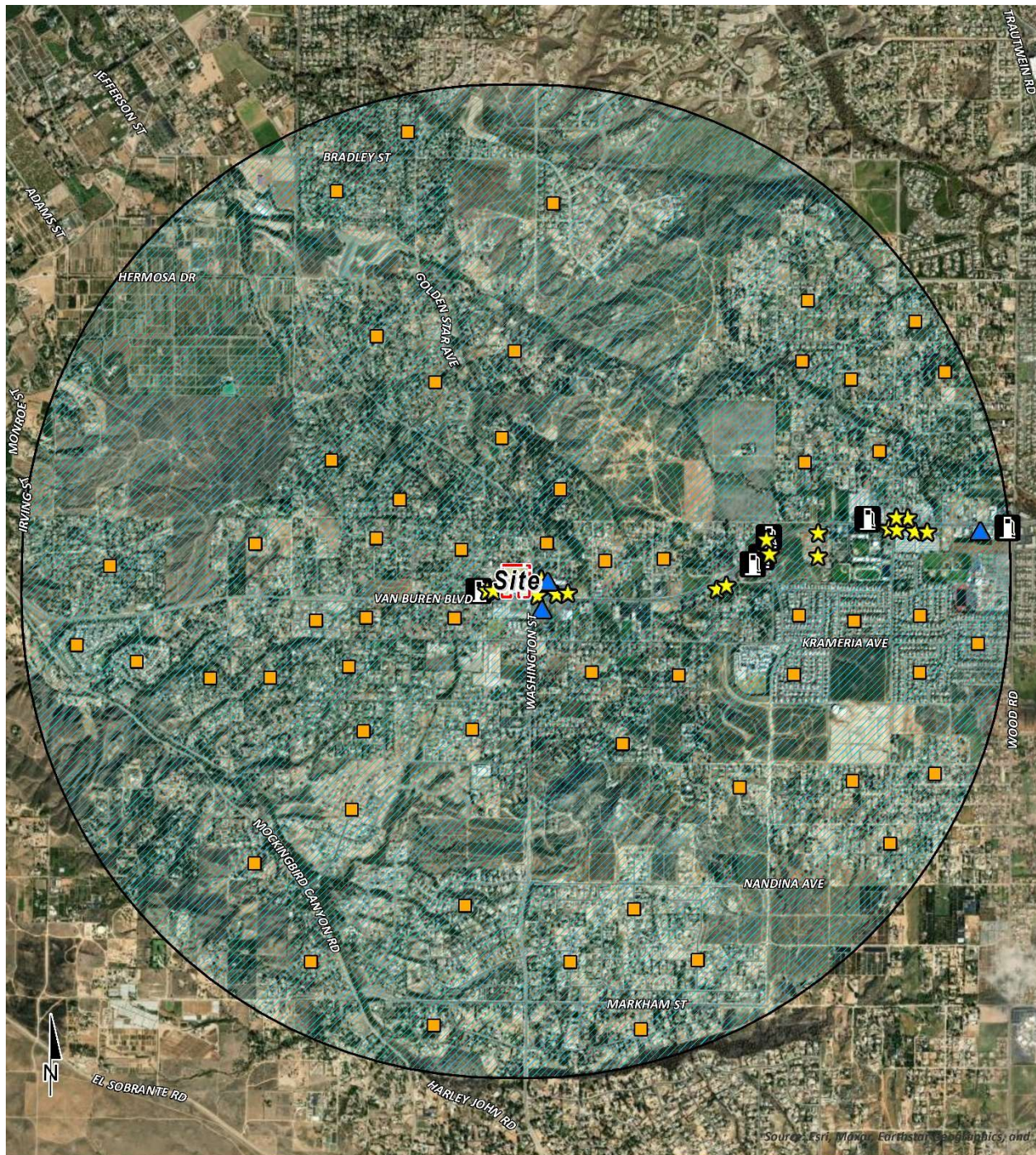
Fugitive Dust Related to Vehicular Travel

Vehicles traveling on paved roads would be a source of fugitive emissions due to the generation of road dust inclusive of brake and tire wear particulates. The emissions estimate for travel on paved roads was calculated using CalEEMod.

³ It should be noted that the total trips for each land use were modeled in CalEEMod and the pass-by trip and internal capture reductions are accounted for within the Pass-By Trip category in CalEEMod. As such, the CalEEMod outputs present the gross trips for all land uses (e.g., 12,030 daily weekday trips consistent with the traffic study), without the reduction of the pass-by and internal capture trips which are calculated internally to the model. Additionally, the trip generation may not necessarily align with the CalEEMod outputs total of 12,029 daily weekday trips due to rounding.

⁴ It should be noted that the total trips for each land use were modeled in CalEEMod and the pass-by trip and internal capture reductions are accounted for within the Pass-By Trip category in CalEEMod. As such, the CalEEMod outputs present the gross trips for all land uses (e.g., 11,382 daily weekday trips consistent with the traffic study), without the reduction of the pass-by and internal capture trips which are calculated internally to the model. Additionally, the trip generation may not necessarily align with the CalEEMod outputs total of 11,379 daily weekday trips due to rounding.

EXHIBIT 4-A: 2-MILE RADIUS OF RETAIL SERVICES



LEGEND:

- | | | |
|---------------|--------------------------------|-----------------------|
| Site Boundary | Gas Stations | Retail/Grocery Store |
| 2-Mile Radius | Fast-Food/ Sit-Down Restaurant | Residential Community |

4.5.2 Area Source Emissions

Architectural Coatings

Over a period of time the buildings that are part of this Project would require maintenance and would therefore produce emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings. The emissions associated with architectural coatings were calculated using CalEEMod.

Consumer Products

Consumer products include, but are not limited to, detergents, cleaning compounds, polishes, personal care products, and lawn and garden products. Many of these products contain organic compounds which when released in the atmosphere can react to form ozone and other photochemically reactive pollutants. The emissions associated with the use of consumer products were calculated based on defaults provided within CalEEMod.

Landscape Maintenance Equipment

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the Project. It should be noted that on October 9, 2021, Governor Gavin Newsom signed AB 1346. The bill aims to ban the sale of new gasoline-powered equipment under 25 gross horsepower (known as small off-road engines [SOREs]) by January 1, 2024, which is now in effect. However, for purposes of analysis, the emissions associated with landscape maintenance equipment were calculated based on assumptions provided in CalEEMod, and do not incorporate the emissions reductions that would be realized from implementation of AB 1346.

4.5.3 Energy Source Emissions

Combustion Emissions Associated with Electricity and Natural Gas

Electricity and natural gas are used by almost every project. Criteria pollutant emissions are emitted through the generation of electricity. However, because electrical generating facilities for the Project area are located either outside the region (state) or offset through the use of pollution credits (RECLAIM) for generation within the SCAB, criteria pollutant emissions from offsite generation of electricity are excluded from the evaluation of significance. Natural gas and electricity usage associated with the Project was calculated by CalEEMod using default parameters.

4.5.4 Gasoline Dispensing Emissions

Operational VOC emissions have been analyzed using CalEEMod analysis software and methodology and are based on the default assumptions for a convenience store with fueling positions. The operational VOC emissions estimates associated with this use were previously shown in Table 4-8. However, CalEEMod does not specifically calculate storage, transfer, and dispensing fuel.

The storage, transfer and dispensing of fuel is not expected to generate significant VOC emissions. The enhanced vapor recovery systems required by SCAQMD Rule 461 would substantially reduce

VOC emissions and mitigate any potential for the Project to exceed the daily emissions thresholds set by SCAQMD.

In 2022, CARB released the Gasoline Service Station Industrywide Risk Assessment Technical Guidance report which provides emission factors for loading, breathing, fueling, spillage and hose permeation for gasoline dispensing (21). According to USEPA, the anticipated average annual throughput of fuel for the 12 VFP Gas Station is 4,625,280 gallons/year or 12,672 gallons/day dispensed at the Project site. Based on this throughput estimate, the Project is anticipated to emit an additional 5.63 lbs/day VOC emissions for gasoline dispensing. Thus, the total daily VOC emissions from operational emissions estimated by CalEEMod as well as VOCs from gasoline dispensing would be 57.23 lbs/day (51.60 lbs/day + 5.63 lbs/day). Gasoline dispensing emission calculations are provided in Appendix 4.3.

As summarized previously, the impact of any additional VOCs from the storage, transfer and dispensing of gasoline is considered less than significant and no additional impacts would occur beyond those identified in this AQIA.

4.5.5 Stationary Source Emissions

The proposed Project was conservatively assumed to include installation of one (1) 700-horsepower diesel-powered emergency generator at the supermarket building. The emergency generator was estimated to operate for up to 1 hour per day, 1 day per week for up to 50 hours per year for maintenance and testing purposes. Emissions associated with the stationary diesel-powered emergency generator were calculated using CalEEMod.

4.5.6 Operational Emissions Summary

Base Development Concept

Operational activities for summer and winter scenarios are presented in Table 4-8. Detailed operation model outputs for the Base Development Concept are presented in Appendix 4.1. As shown on Table 4-8, the Base Development Concept would not exceed the numerical thresholds of significance established by the SCAQMD for emissions of any criteria pollutant. As such, operational impacts would be considered less-than-significant.

TABLE 4-8: SUMMARY OF PEAK OPERATIONAL EMISSIONS – BASE DEVELOPMENT CONCEPT

Source	Emissions (lbs/day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀ T	PM _{2.5} T
Summer						
Mobile	49.69	16.62	122.53	0.15	11.23	2.95
Area	1.87	0.02	2.65	0.00	0.00	0.00
Energy	0.03	0.58	0.49	0.00	0.04	0.04
Fuel Dispensing	5.63	0.00	0.00	0.00	0.00	0.00
Stationary Sources	1.15	3.21	2.93	0.01	0.17	0.17
Project Maximum Daily Emissions	58.38	20.43	128.60	0.16	11.45	3.17
<i>Existing Emissions</i>	<i>9.03</i>	<i>3.08</i>	<i>24.67</i>	<i>0.04</i>	<i>3.27</i>	<i>0.86</i>
Net Emissions (Base Development – Existing)	49.35	17.35	103.93	0.12	8.18	2.31
SCAQMD Regional Thresholds	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO
Winter						
Mobile	45.99	17.64	127.33	0.14	11.23	2.95
Area	1.44	0.00	0.00	0.00	0.00	0.00
Energy	0.03	0.58	0.49	0.00	0.04	0.04
Fuel Dispensing	5.63	0.00	0.00	0.00	0.00	0.00
Stationary Sources	1.15	3.21	2.93	0.01	0.17	0.17
Project Maximum Daily Emissions	54.24	21.42	130.74	0.15	11.44	3.16
<i>Existing Emissions</i>	<i>8.40</i>	<i>3.27</i>	<i>23.09</i>	<i>0.04</i>	<i>3.27</i>	<i>0.86</i>
Net Emissions (Base Development – Existing)	45.84	18.15	107.65	0.11	8.17	2.30
SCAQMD Regional Thresholds	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

Parcel 1 Option

Operational activities for summer and winter scenarios are presented in Table 4-9. Detailed operation model outputs for the Parcel 1 Option are presented in Appendix 4.2. As shown on Table 4-9, the Parcel 1 Option would not exceed the numerical thresholds of significance established by the SCAQMD for emissions of any criteria pollutant. As such, operational impacts would be considered less-than-significant.

TABLE 4-9: SUMMARY OF PEAK OPERATIONAL EMISSIONS – PARCEL 1 OPTION

Source	Emissions (lbs/day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀ T	PM _{2.5} T
Summer						
Mobile	50.86	16.87	123.87	0.15	11.05	2.90
Area	2.01	0.02	2.86	0.00	0.01	0.00
Energy	0.04	0.73	0.61	0.00	0.06	0.06
Stationary	1.15	3.21	2.93	0.01	0.17	0.17
Project Maximum Daily Emissions	54.06	20.83	130.27	0.16	11.28	3.13
<i>Existing Emissions</i>	<i>9.03</i>	<i>3.08</i>	<i>24.67</i>	<i>0.04</i>	<i>3.27</i>	<i>0.86</i>
Net Emissions (Parcel Option 1 – Existing)	45.03	17.75	105.60	0.12	8.01	2.27
SCAQMD Regional Thresholds	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO
Winter						
Mobile	47.07	17.89	129.15	0.14	11.05	2.90
Area	1.54	0.00	0.00	0.00	0.00	0.00
Energy	0.04	0.73	0.61	0.00	0.06	0.06
Stationary	1.15	3.21	2.93	0.01	0.17	0.17
Project Maximum Daily Emissions	49.80	21.83	132.69	0.15	11.27	3.13
<i>Existing Emissions</i>	<i>8.40</i>	<i>3.27</i>	<i>23.09</i>	<i>0.04</i>	<i>3.27</i>	<i>0.86</i>
Net Emissions (Parcel Option 1 – Existing)	41.40	18.56	109.60	0.11	8.00	2.27
SCAQMD Regional Thresholds	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

4.6 LOCALIZED AIR QUALITY IMPACTS

4.6.1 Background on LST Development

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (LST Methodology). The SCAQMD has established that localized impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs). The SCAQMD established LSTs in response to the SCAQMD Governing Board’s Environmental Justice Initiative I-4.⁵ LSTs represent the maximum

⁵ The purpose of SCAQMD’s Environmental Justice program is to ensure that everyone has the right to equal protection from air pollution and fair access to the decision-making process that works to improve the quality of air within their communities. Further, the SCAQMD defines Environmental Justice as “...equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.”

emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest residence or sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses. LSTs were developed in response to environmental justice and health concerns raised by the public regarding exposure of individuals to criteria pollutants in local communities. To address the issue of localized significance, the SCAQMD adopted LSTs that show whether a project would cause or contribute to localized air quality impacts and thereby cause or contribute to potential localized adverse health effects. The analysis makes use of methodology included in the *LST Methodology* (22).

4.6.2 Emissions Considered

Based on SCAQMD's *LST Methodology*, emissions for concern during construction activities are on-site NO_x , CO, $\text{PM}_{2.5}$, and PM_{10} . The *LST Methodology* clearly states that "off-site mobile emissions from the Project should not be included in the emissions compared to LSTs (23)." As such, for purposes of the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered.

4.6.3 Dispersion Modeling

In order to estimate localized pollutant concentrations resulting from Project construction, the SCAQMD-approved American Meteorological Society/EPA Regulatory Model (AERMOD) dispersion model was utilized. The modeling approach utilized is discussed as follows.

4.6.4 Sources

It should be noted that in order to model worst-case conditions, the highest daily peak on-site emissions resulting from overlapping construction activity were modeled. A ground level release height and a 1 meter (approximately 3.28 feet) initial vertical dimension (σ_z) were utilized for fugitive dust emissions of PM_{10} and $\text{PM}_{2.5}$ consistent with SCAQMD's LST guidance. In order to account for equipment exhaust emissions from NO_2 , CO, PM_{10} , and $\text{PM}_{2.5}$ a release height of 5.0 meters was utilized consistent with SCAQMD's LST guidance.

4.6.5 Meteorological Data and Model Options

In order to account for meteorological conditions at the Project site, meteorological data from the SCAQMD's Riverside monitoring station was utilized, as this is the nearest station to the Project site for which meteorological data is available. Additionally, a receptor height of 2 meters and regulatory default options were utilized consistent with SCAQMD's LST guidance.

4.6.6 Receptors

As previously stated, LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable NAAQS and CAAQS at the nearest residence or sensitive receptor. Receptor locations are off-site locations where individuals may be exposed to emissions from Project activities. Some people are especially sensitive to air pollution and are given special consideration when evaluating air quality impacts from projects. These groups of people include children, the elderly, and individuals with pre-existing respiratory or cardiovascular illness. Structures that house these persons or places where they gather are defined as "sensitive

receptors". These structures typically include uses such as residences, hotels, and hospitals where an individual can remain for 24 hours. Consistent with the LST Methodology, the nearest land use to the Project site where an individual could remain for 24 hours has been used to determine construction and operational air quality impacts for emissions of PM₁₀ and PM_{2.5}, since PM₁₀ and PM_{2.5} thresholds are based on a 24-hour averaging time.

Per the *LST Methodology*, commercial and industrial facilities are not included in the definition of sensitive receptor because employees and patrons do not typically remain onsite for a full 24 hours but are typically on-site for 8 hours or less. However, *LST Methodology* explicitly states that "*LSTs based on shorter averaging periods, such as the NO₂ and CO LSTs, could also be applied to receptors such as industrial or commercial facilities since it is reasonable to assume that a worker at these sites could be present for periods of one to eight hours (23).*" Therefore, any adjacent land use where an individual could remain for 1 or 8 hours, that is located at a closer distance to the Project site than the receptor used for PM₁₀ and PM_{2.5} analysis, must be considered to determine construction and operational LST air impacts for emissions of NO₂ and CO since these pollutants have an averaging time of 1 and 8 hours.

Receptors in the Project study area are described below and shown in Exhibit 4-B. Localized air quality impacts were evaluated at sensitive receptor land uses nearest the Project site. All distances are measured from the Project site boundary to the outdoor living areas (e.g., backyards) or at the building façade, whichever is closer to the Project site.

- Location R1 represents the existing building at 16200 Washington Street, approximately 132 feet east of the Project site. Receptor R1 is placed at the facade facing the Project site.
- Location R2 represents the existing residence at 16851 Palamino Place, approximately 89 feet west of the Project site. Receptor R2 is placed at the façade facing the Project site.
- Location R3 represents the existing residence at 16961 Tava Lane, approximately 130 feet north of the Project site. Receptor R3 is placed at the façade facing the Project site.
- Location R4 represents the existing school, Woodcrest Montessori, at 16191 Washington Street, approximately 7 feet north of the Project site.

The SCAQMD recommends that the nearest sensitive receptor be considered when determining a Project's impact. The nearest land use where an individual could remain for 24 hours to the Project site has been used to determine localized construction and operational air quality impacts for emissions of PM₁₀ and PM_{2.5} (since PM₁₀ and PM_{2.5} thresholds are based on a 24-hour averaging time).

As previously stated, and consistent with LST Methodology, the nearest industrial/commercial use to the Project site is used to determine construction and operational LST air impacts for emissions of NO_x and CO as the averaging periods for these pollutants are shorter (8 hours or less) and it is reasonable to assumed that an individual could be present at these sites for periods of one to 8 hours.

EXHIBIT 4-B: RECEPTOR LOCATIONS



4.6.7 Construction-Source Localized Emissions

Base Development Concept

Emissions during the peak construction activity will not exceed the SCAQMD's localized significance thresholds at the maximally exposed receptor location, as illustrated in Table 4-10. All other modeled locations in the study area would experience lower concentrations, resulting in a reduced impact. As such, the Base Development Concept's localized impacts during construction activity would be less than significant. Outputs from the model runs for construction LSTs are provided in Appendix 4.1.

TABLE 4-10: CONSTRUCTION LOCALIZED SIGNIFICANCE SUMMARY – BASE DEVELOPMENT CONCEPT

Peak Construction	CO		NO ₂	PM ₁₀ T	PM _{2.5} T
	Averaging Time				
	1-Hour	8-Hours	1-Hour	24-Hours	24-Hours
Peak Day Localized Emissions	0.11	0.04	0.07	6.15	3.30
Background Concentration ^A	3.3	1.8	0.056		
Total Concentration	3.41	1.84	0.13	6.15	3.30
SCAQMD Localized Significance Threshold	20	9	0.18	10.40	10.40
Threshold Exceeded?	NO	NO	NO	NO	NO

^A Highest concentration from the last three years of available data.

Notes: PM₁₀ and PM_{2.5} concentrations are expressed in µg/m³. All others are expressed in ppm.

Based on SCAQMD's LST Methodology, background concentrations are considered only for CO and NO₂.

Parcel 1 Option

Emissions during the peak construction activity will not exceed the SCAQMD's localized significance thresholds at the maximally exposed receptor location, as illustrated in Table 4-11. All other modeled locations in the study area would experience lower concentrations, resulting in a reduced impact. As such, the Parcel 1 Option's localized impacts during construction activity would be less than significant. Outputs from the model runs for construction LSTs are provided in Appendix 4.2.

TABLE 4-11: CONSTRUCTION LOCALIZED SIGNIFICANCE SUMMARY – PARCEL 1 OPTION

Peak Construction	CO		NO ₂	PM ₁₀ T	PM _{2.5} T
	Averaging Time				
	1-Hour	8-Hours	1-Hour	24-Hours	24-Hours
Peak Day Localized Emissions	0.11	0.04	0.07	6.15	3.30
Background Concentration	3.3	1.8	0.056		
Total Concentration	3.41	1.84	0.13	6.15	3.30
SCAQMD Localized Significance Threshold	20	9	0.18	10.40	10.40
Threshold Exceeded?	NO	NO	NO	NO	NO

4.6.8 Operational-Source Localized Emissions

As previously stated, the total development of the Base Development Concept is to consist of a 3,227 square foot convenience market with a 12-vehicle fueling position gas station, 43,403 square-foot

supermarket, 2,500 square foot retail use, 2,500 square-foot of fast-food restaurant without drive-through window, and 9,390 square-foot of fast-food restaurant with drive-through window. The total development of the Parcel 1 Option is to consist of a 43,403 square-foot supermarket, 5,200 square foot retail use, 5,200 square-foot of fast-food restaurant without drive-through window, and 11,890 square-foot of fast-food restaurant with drive-through window. Although, the Project does not include land uses such as transfer facilities and warehouse buildings, the project has the potential to attract mobile sources that may spend long periods queuing and idling at the site due to fueling stations and drive through activities.

The LST analysis generally includes on-site sources (area, energy, and mobile – are previously discussed in Section 4.5 of this report). However, it should be noted that the CalEEMod outputs do not separate on-site and off-site emissions from mobile sources. As such, in an effort to establish a maximum potential impact scenario for analytic purposes, the emissions shown in Tables 4-12 and 4-13 represents all on-site Project-related stationary (area) sources mobile sources. It should be noted that the longest on-site distance is roughly 0.20 miles for passenger cars. As such, a separate CalEEMod run for operational LSTs has been prepared which accounts for the 0.20-mile on-site travel distance. Outputs from the model runs for operational LSTs are provided in Appendix 4.2. As shown in Tables 4-12 and 4-13, emissions resulting from the Project operation will not exceed the numerical localized thresholds of significance established by the SCAQMD for any criteria pollutant. Thus, a less than significant impact would occur for localized Project-related operational-source emissions and no mitigation is required.

TABLE 4-12: OPERATIONAL LOCALIZED SIGNIFICANCE SUMMARY – BASE DEVELOPMENT CONCEPT

Peak Operation	CO		NO ₂	PM ₁₀ T	PM _{2.5} T
	Averaging Time				
	1-Hour	8-Hours	1-Hour	24-Hours	24-Hours
Peak Day Localized Emissions	0.18	0.10	0.02	2.09	0.77
Background Concentration	2.8	1.4	0.102		
Total Concentration	2.98	1.50	0.12	2.09	0.77
SCAQMD Localized Significance Threshold	20	9	0.18	2.5	2.5
Threshold Exceeded?	NO	NO	NO	NO	NO

TABLE 4-13: OPERATIONAL LOCALIZED SIGNIFICANCE SUMMARY – PARCEL 1 OPTION

Peak Operation	CO		NO ₂	PM ₁₀ T	PM _{2.5} T
	Averaging Time				
	1-Hour	8-Hours	1-Hour	24-Hours	24-Hours
Peak Day Localized Emissions	0.18	0.10	0.02	2.14	0.80
Background Concentration	2.8	1.4	0.102		
Total Concentration	2.98	1.50	0.12	2.14	0.80
SCAQMD Localized Significance Threshold	20	9	0.18	2.5	2.5
Threshold Exceeded?	NO	NO	NO	NO	NO

4.7 CO “HOT SPOT” ANALYSIS

A CO hotspot is defined as a localized concentration of carbon monoxide exceeding the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. At the time the most recent CEQA Air Quality Handbook (1993) was published by SCAQMD, the air basin was designated as non-attainment, requiring projects to perform hotspot analyses to ensure they did not worsen the existing conditions. Over the last two decades, background CO concentrations have been significantly reduced due to regulatory controls on tailpipe emissions, which have culminated in the air basin achieving attainment status for CO.

The 2003 AQMP’s findings underscore that CO hotspots are highly unlikely due to the reduced background concentrations and the effectiveness of California’s air quality management strategies. The substantial reduction in CO levels from the vehicle fleet and the state’s attainment status for CO further diminish the need for detailed microscale hotspot analyses, reinforcing that existing monitoring and regulatory frameworks adequately address potential air quality concerns.

In 2003, the SCAQMD as part of its AQMP development process, prepared modeling to determine the potential for CO Hotspots at the four busiest intersections in the air basin. As summarized in the 2003 AQMP, even at one of the busiest intersections at that time, only 0.7 ppm of CO is attributable to vehicular traffic and the remaining 7.7 ppm were due to ambient background conditions. As shown on Table 2-5 in this report, the background 1-hour and 8-hour concentrations are well below the applicable AAQS. The 2003 AQMP’s findings underscore that CO hotspots are highly unlikely due to the reduced background concentrations and the effectiveness of California’s air quality management strategies. The substantial reduction in CO levels from the vehicle fleet and the state’s attainment status for CO further diminish the need for detailed microscale hotspot analyses, reinforcing that existing monitoring and regulatory frameworks adequately address potential air quality concerns.

As such, Project-related traffic at any intersections within the Project area would not cause or contribute to a CO hotspot since the background concentrations are low and any contribution from Project traffic would be negligible.

4.8 AQMP

The Project site is located within the SCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 10,743 square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the SCAG, county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards. Currently, these state and federal air quality standards are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of AQMPs to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

In December 2022, the SCAQMD released the *Final 2022 AQMP (2022 AQMP)*. The 2022 AQMP continues to evaluate current integrated strategies and control measures to meet the NAAQS, as well as explore new and innovative methods to reach its goals. Some of these approaches include

utilizing incentive programs, recognizing existing co-benefit programs from other sectors, and developing a strategy with fair-share reductions at the federal, state, and local levels (24). Similar to the 2016 AQMP, the 2022 AQMP incorporates scientific and technological information and planning assumptions, including the 2020-2045 RTP/SCS, a planning document that supports the integration of land use and transportation to help the region meet the federal CAA requirements (25). The Project's consistency with the AQMP will be determined using the 2022 AQMP as discussed below.

CAG adopted the 2020-2045 *Regional Transportation Plan/Sustainable Communities Strategy* (2020-2045 RTP/SCS), a planning document that supports the integration of land use and transportation to help the region meet the federal metropolitan planning organization (MPO) requirements under the Sustainable communities and Climate Protection Act. The Project would be developed in accordance with all applicable rules and regulations contained in those plans. It should be noted that although the 2024-2050 RTP was released after approval of the 2022 AQMP, the 2022 AQMP is reliant in part upon the general plan land use designations.

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the 1993 *CEQA Handbook* (26). These indicators are discussed below:

4.8.1 Consistency Criterion No. 1

Potential to result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

The violations that Consistency Criterion No. 1 refer to are the CAAQS and NAAQS. CAAQS and NAAQS violations would occur if regional or localized significance thresholds were exceeded.

Construction Impacts – Consistency Criterion 1

As evaluated, the Project's localized and regional construction-source emissions would not exceed applicable regional significance threshold and LST thresholds. As such, a less than significant impact is expected.

Operational Impacts – Consistency Criterion 1

As evaluated, the Project's localized and regional operation-source emissions would not exceed applicable regional significance threshold and LST thresholds. As such, a less than significant impact is expected.

On the basis of the preceding discussion, the Project is determined to be consistent with the first criterion.

4.8.2 Consistency Criterion No. 2

Potential to exceed the assumptions in the AQMP based on the years of Project build-out phase.

The 2022 AQMP demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the SCAG, which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. Development consistent

with the growth projections in County of Riverside General Plan is considered to be consistent with the AQMP.

Construction Impacts – Consistency Criterion 2

Peak day emissions generated by construction activities are largely independent of land use assignments, but rather are a function of development scope and maximum area of disturbance. Irrespective of the site's land use designation, development of the site to its maximum potential would likely occur, with disturbance of the entire site occurring during construction activities. As such, when considering that no emissions thresholds will be exceeded, a less than significant impact would result.

Operational Impacts – Consistency Criterion 2

The County of Riverside General Plan designates the Project site within the Lake Matthews/Woodcrest Area Plan as "Rural Community - Very Low Density Residential (RC-VLDR)" and "Commercial Retail (CR)" land uses. The existing zoning designations are "Light Agriculture – 1 Acre Minimum Lot Size (A-1-1)" and "Scenic Highway Commercial (C-P-S)."

To accommodate the Project, the entire site will be designated as CR under the General Plan and Area Plan, which allows for commercial retail, professional office, and tourist-oriented commercial uses. The land uses proposed by the Project aligns with this designation (27).

To match the proposed General Plan Land Use, APNs 273-130-014 and 273-130-019 will be rezoned from A-1-1 to C-P-S zoning uses. The remaining Project site is already zoned C-P-S, consistent with the Commercial Retail designation, allowing for the proposed commercial/retail development (28).

The Project includes the development of 61,020 square feet of restaurant/retail use. As previously stated, to allow for the Project General Plan and Zone Change Amendments are required. However, all Project air quality impacts would be less-than-significant, individually and cumulatively. On this basis, the Project would not conflict with the goals and objectives of the AQMP.

On the basis of the preceding discussion, the Project is determined to be consistent with the second criterion.

AQMP Consistency Conclusion

The Project would not have the potential to result in or cause NAAQS or CAAQS violations. It is recognized that the Project's proposed uses are not consistent with the site's existing General Plan land use and zoning designations. However, the Project maximum emissions would not exceed regional or localized construction and operational emissions thresholds. All Project emissions would be less-than-significant individually, and cumulatively. On this basis, the potential for the Project to exceed the assumptions in the AQMP based on the years of Project build-out phase is considered less-than-significant.

4.9 POTENTIAL IMPACTS FROM GASOLINE FUEL DISPENSING

The potential impact of Project-generated air pollutant emissions at sensitive receptors has also been considered. Sensitive receptors can include uses such as long-term health care facilities, rehabilitation centers, and retirement homes. Residences, schools, playgrounds, child care centers, and athletic facilities can also be considered as sensitive receptors. The nearest sensitive receptor to the fueling canopy is location R1, which represents the existing residence at 16200 Washington Street, approximately 505 feet (154 meters) northeast of the Project site.

Emissions resulting from the gasoline service station the potential to result in TACs (e.g., benzene, hexane, methyl tert-butyl ether (MTBE), toluene, xylene) and have the potential to contribute to health risk in the project vicinity. It should be noted that standard regulatory controls would apply to the project in addition to any permits required that demonstrate appropriate operational controls. For purposes of this evaluation, cancer risk estimates were determined consistent with the methodology presented in CARB and California Air Pollution Control Officers Association (CAPCOA) Gasoline Service Station Industry Wide Risk Assessment Technical Guidance which provides a screening-level risk estimates tool for gasoline dispensing operations. Residential and worker risks were estimated using the CARB and CAPCOA Look-up Tool Version 1.0 2_18_22 (29). The Project site is located 8.45 miles northwest of SRA 23, and the fuel canopy of the Project is 505 feet (154 meters) northeast of the nearest residential site. Based on this screening procedure it is anticipated that no residential sensitive receptors in the project vicinity will be exposed to a cancer risk of greater than 1.55 in one million and that no worker sensitive receptors will be exposed to a cancer risk of greater than 3.27 in one million which is less than the applicable threshold of 10 in one million. It should be noted that this screening-level risk estimate is very conservative (i.e. it would overstate rather than understate potential impacts).

4.10 POTENTIAL IMPACTS TO SENSITIVE RECEPTORS

The potential impact of Project-generated air pollutant emissions at sensitive receptors has also been considered. Results of the LST analysis indicate that the Project would not exceed the SCAQMD localized significance thresholds during construction. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations during Project construction.

Additionally, the Project would not exceed the SCAQMD localized significance thresholds during operational activity. Further Project traffic would not create or result in a CO “hotspot.” Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations as the result of Project operations.

4.10.1 Friant Ranch Case

In December 2018, in the case of *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, California Supreme Court held that an EIR’s air quality analysis must meaningfully connect the identified air quality impacts to the human health consequences of those impacts, or meaningfully explain why that analysis cannot be provided. As noted in the Brief of Amicus Curiae by the SCAQMD in the Friant Ranch case (April 6, 2015) (Brief), SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, and thus it is uniquely situated to express an opinion on how lead agencies should correlate air quality impacts with specific health outcomes (30).

The SCAQMD discusses that it may be infeasible to quantify health risks caused by projects similar to the Project, due to many factors. It is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence) (30). The Brief states that it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic building that was built on "speculation" (i.e., without knowing the future tenant(s))⁶ (30). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk--it does not necessarily mean anyone will contract cancer as a result of the Project (30). The Brief also cites the author of CARB methodology, which reported that a PM_{2.5} methodology is not suited for small projects and may yield unreliable results (30). Similarly, SCAQMD staff does not currently know of a way to accurately quantify O₃-related health impacts caused by NO_x or VOC emissions from relatively small projects, due to photochemistry and regional model limitations (30). The Brief concludes, with respect to the Friant Ranch EIR, that although it may have been technically possible to plug the data into a methodology, the results would not have been reliable or meaningful (30).

On the other hand, for extremely large regional projects (unlike the Project), the SCAQMD states that it has been able to correlate potential health outcomes for very large emissions sources – as part of their rulemaking activity, specifically 6,620 lbs/day of NO_x and 89,180 lbs/day of VOC were expected to result in approximately 20 premature deaths per year and 89,947 school absences due to O₃ (30).

The Project does not generate anywhere near 6,620 lbs/day of NO_x or 89,190 lbs/day of VOC emissions. The Base Development Concept would generate 34.69 lbs/day of NO_x during construction and 5.56 lbs/day of NO_x during operations (0.52% and 0.08% of 6,620 lbs/day, respectively). The Base Development Concept would also generate 22.20 lbs/day of VOC emissions during construction and 45.70 lbs/day of VOC emissions during operations (0.02% and 0.05% of 89,190 lbs/day, respectively). The Parcel 1 Option would generate 34.69 lbs/day of NO_x during construction and 5.97 lbs/day of NO_x during operations (0.52% and 0.09% of 6,620 lbs/day, respectively). The Parcel 1 Option would also generate 23.22 lbs/day of VOC emissions during construction and 41.38 lbs/day of VOC emissions during operations (0.03% and 0.05% of 89,190 lbs/day, respectively). Therefore, the Project emissions are not sufficiently high enough to use a regional modeling program to correlate health effects on a basin-wide level.

Notwithstanding, this AQIA does evaluate the Project's localized impact to air quality for emissions of CO, NO_x, PM₁₀, and PM_{2.5} by comparing the Project's on-site emissions to the SCAQMD's applicable LST thresholds. As evaluated in this AQIA, the Project would not result in emissions that exceeded the SCAQMD's LSTs. Therefore, the Project would not be expected to exceed the most stringent applicable federal or state ambient air quality standards for emissions of CO, NO_x, PM₁₀, and PM_{2.5}.

⁶ It should also be noted that the actual occurrence of specific health conditions is based on numerous other factors that are infeasible to quantify, such as an individual's genetic predisposition, diet, exercise regiment, stress, and other behavioral characteristics.

4.11 ODORS

The potential for the Project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

The Project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the Project's (long-term operational) uses. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less than significant. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with current solid waste regulations. The Project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors and other emissions (such as those leading to odors) associated with construction and operations activities of the Project would be less than significant and no mitigation is required (31).

4.12 CUMULATIVE IMPACTS

As previously shown in Table 2-4, the CAAQS designates the Project site as nonattainment for O₃, PM₁₀, and PM_{2.5} while the NAAQS designates the Project site as nonattainment for O₃ and PM_{2.5}. The SCAQMD has published a report on how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (32). In this report the SCAQMD clearly states (Page D-3):

"...the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for TAC emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.

Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.”

Therefore, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the SCAQMD’s recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which SCAB is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Conversely, project-level construction and operational emissions that exceed SCAQMD thresholds would be considered cumulatively considerable. SCAQMD’s thresholds of significance for project-specific direct and cumulatively-considerable impacts have clearly been successful, as application of these thresholds has led to significant air quality improvements throughout the SCAB.

Construction-Source Emission Impacts

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that Project construction-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, Project construction-source emissions would be considered less than significant on a Project-specific and cumulative basis.

Operational-Source Emission Impacts

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that Project operation-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, the Project operation-source emissions would be considered less than significant on a project-specific and cumulative basis.

5 REFERENCES

1. **State of California.** *2020 CEQA California Environmental Quality Act.* 2020.
2. **South Coast Air Quality Management District.** Southern California Air Basins. [Online] <https://www.arb.ca.gov/msprog/onroad/porttruck/maps/scabc7map.pdf>.
3. —. *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.* 2005.
4. **St. Croix Sensory, Inc.** *The "Gray Line" Between Odor Nuisance and Health Effects.* 2000.
5. **California Air Resources Board.** Ambient Air Quality Standards (AAQS). [Online] 2024. <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.
6. **United State Environmental Protection Agency.** Frequent Questions about General Conformity . EPA. [Online] <https://www.epa.gov/general-conformity/frequent-questions-about-general-conformity#8>.
7. **South Coast Air Quality Management District.** Annual Air Quality Monitoring Network Plan. [Online] July 2023. <https://www.aqmd.gov/docs/default-source/default-document-library/south-coast-aqmd-2023-annual-air-quality-monitoring-network-plan.pdf?sfvrsn=0>.
8. **Air Resources Board.** *Appendix C Maps and Tables of Area Designations for State and National Ambient Air Quality Standards.* 2024.
9. **District, South Coast Air Quality Management.** Air Quality Data Tables. [Online] <https://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year>.
10. **Environmental Protection Agency.** National Ambient Air Quality Standards (NAAQS). [Online] 1990. <https://www.epa.gov/environmental-topics/air-topics>.
11. —. Air Pollution and the Clean Air Act. [Online] <http://www.epa.gov/air/caa/>.
12. **United States Environmental Protection Agency.** 1990 Clean Air Act Amendment Summary: Title I. [Online] <https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-amendment-summary-title-i>.
13. —. 1990 Clean Air Act Amendment Summary: Title II. [Online] <https://www.epa.gov/clean-air-act-overview/1990-clean-air-act-amendment-summary-title-ii>.
14. **Air Resources Board.** California Ambient Air Quality Standards (CAAQS). [Online] 2009. [Cited: April 16, 2018.] <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>.
15. **Southern California Association of Governments.** 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. [Online] April 2016. <https://scag.ca.gov/sites/main/files/file-attachments/f2016rtpscs.pdf?1606005557>.
16. **South Coast Air Quality Management District.** SCAQMD Air Quality Significance Thresholds. [Online] <https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf>.
17. **California Air Pollution Control Officers Association (CAPCOA).** California Emissions Estimator Model (CalEEMod). [Online] March 2023. www.caleemod.com.
18. **Urban Crossroads, Inc.** *Woodcrest Retail Center Traffic Study Scoping Agreement.* 2025.
19. —. *Woodcrest Retail Vehicle Miles Traveled Screening Evaluation (VMT Evaluation).* 2025.
20. **County of Riverside.** *Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled.* County of Riverside : s.n., December 2020.
21. **California Air Resources Board.** Gasoline Service Station Technical Guidance. [Online] https://www2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf.

22. **Lake Environmental.** US EPA Models. *Lake Environmental*. [Online]
http://www.weblakes.com/download/us_epa.html.
23. **South Coast Air Quality Management District.** *Localized Significance Thresholds Methodology*. s.l. :
 South Coast Air Quality Management District, 2008.
24. —. Final 2016 Air Quality Management Plan (AQMP). [Online] March 2017.
<http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=11>.
25. **Southern California Association of Governments.** 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy. [Online] September 2020. https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176.
26. **South Coast Air Quality Management District.** *CEQA Air Quality Handbook (1993)*. 1993.
27. **County of Riverside.** Lake Matthews/Woodcrest Area Plan . [Online] 2021.
<https://planning.rctlma.org/sites/g/files/aldnop416/files/migrated/Portals-14-genplan-GPA-2022-Compiled-LMWAP-4-2022-rev.pdf>.
28. —. Zoning Ordinance. [Online] December 11, 2024.
https://library.municode.com/ca/riverside_county/codes/code_of_ordinances?nodeId=TIT17ZO_CH17.6OPLREZO.
29. **California Air Resources Board.** Look-up Tool Version 1.0 2_18_22. [Online]
https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf.
30. **South Coast Air Quality Management District.** Sierra Club, Revive the San Joaquin and League of Women Voters of Fresno, Plaintiffs and Appellants, v. County of Fresno, Defendant and Respondent and, Friant Ranchm L.P. Real Party in Interest and Respondent. [Online] 2015.
<https://www.courts.ca.gov/documents/9-s219783-ac-south-coast-air-quality-mgt-dist-041315.pdf>.
31. —. RULE 402 NUISANCE. [Online] <http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf>.
32. **Goss, Tracy A and Kroeger, Amy.** White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. [Online] South Coast Air Quality Management District, 2003.
<http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper.pdf>.

6 CERTIFICATION

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed Woodcrest Retail Center Project. The information contained in this air quality impact assessment report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at hqureshi@urbanxroads.com.

Haseeb Qureshi
Principal
URBAN CROSSROADS, INC.
1133 Camelback #8329
Newport Beach, CA 92658
hqureshi@urbanxroads.com

Education

Master of Science in Environmental Studies
California State University, Fullerton • May, 2010
Bachelor of Arts in Environmental Analysis and Design
University of California, Irvine • June, 2006

Professional Affiliations

AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
ASTM – American Society for Testing and Materials

Professional Certifications

Planned Communities and Urban Infill – Urban Land Institute • June, 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April, 2008
Principles of Ambient Air Monitoring – CARB • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
Air Dispersion Modeling – Lakes Environmental • June, 2006

This page intentionally left blank

APPENDIX 2.1:

STATE/FEDERAL ATTAINMENT STATUS OF CRITERIA POLLUTANTS

This page intentionally left blank

APPENDIX 3.1:

CALEEMOD EXISTING EMISSIONS MODEL OUTPUTS

This page intentionally left blank

APPENDIX 4.1:

CALEEMOD BASE DEVELOPMENT CONCEPT EMISSIONS MODEL OUTPUTS

This page intentionally left blank

APPENDIX 4.2:

CALEEMOD PARCEL 1 OPTION EMISSIONS MODEL OUTPUTS

This page intentionally left blank

APPENDIX 4.3:

AERMOD LOCALIZED EMISSIONS MODEL OUTPUTS

This page intentionally left blank