AIR QUALITY, ENERGY, AND GREENHOUSE GAS IMPACT REPORT

ENDERLE CENTER PROJECT

CITY OF TUSTIN, CALIFORNIA

LSA

May 2024

AIR QUALITY, ENERGY, AND GREENHOUSE GAS IMPACT REPORT

ENDERLE CENTER PROJECT

CITY OF TUSTIN, CALIFORNIA

Submitted to:

EPD Solutions, Inc.
3333 Michelson Drive, Suite 500
Irvine, California 92612

Prepared by:

LSA
3210 El Camino Real, Suite 100
Irvine, California 92602
(949) 553-0666

Project No. ESL2201.76

LSA

May 2024

TABLE OF CONTENTS

FIGURES AND TABLES

FIGURES

TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

°C	degrees Celsius
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AAQS	ambient air quality standards
AB	Assembly Bill
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
BTU	British thermal units
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen Code	California Green Building Standards Code
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CBSC	California Building Standards Commission
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEC	California Energy Commission

CEQA	California Environmental Quality Act
CH_4	methane
City	City of Tustin
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of Orange
CPUC	California Public Utilities Commission
DPM	diesel particulate matter
du/ac	dwelling units per acre
EIA	Energy Information Administration
EIR	Environmental Impact Report
EMFAC	California Emissions Factor Model
EO	Executive Order
GHG	greenhouse gas
GPA	General Plan Amendment
GWh	gigawatt-hour
GWP	global warming potential
H_2S	hydrogen sulfide
HFCs	hydrofluorocarbons
HOD	Housing Overlay District
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatt-hour
lbs/day	pounds per day

LCFS	Low Carbon Fuel Standard
LST	Local Significance Threshold
mg/m^3	milligrams per cubic meter
MMT	million metric tons
MMT CO_2e	million metric tons of carbon dioxide equivalent
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
MT	metric tons
MT CO_2e	metric tons of carbon dioxide equivalent
MT CO_2e/yr	metric tons of carbon dioxide equivalent per year
MT CO_2e/yr/SP	metric tons of carbon dioxide equivalent per year per service population
MW	megawatt
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	ozone (or smog)
OPR	Governor's Office of Planning and Research
PC COM	Planned Community Commercial
PCCB	Planned Community Commercial/Business

PFCs	perfluorocarbons
PM	particulate matter
$PM_{2.5}$	particulate matter less than 2.5 microns in size
PM_{10}	particulate matter less than 10 microns in size
ppb	parts per billion
ppm	parts per million
PRC	Public Resources Code
project	Tustin Enderle Center Project
RCP	Regional Comprehensive Plan
RHNA	Regional Housing Needs Allocation
ROCs	reactive organic compounds
ROGs	reactive organic gases
RPS	Renewables Portfolio Standard
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SO_2	sulfur dioxide
SO_X	sulfur oxides
SoCalGas	Southern California Gas Company

sq ft	square foot/feet
sq mi	square mile
SR-55	State Route 55
TAC	toxic air contaminant
UNFCCC	United Nations Framework Convention on Climate Change
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
VMT	vehicle miles traveled
VOCs	volatile organic compounds
ZC	Zone Change
ZCA	Zoning Code Amendment
ZEV	zero-emission vehicle
ZNE	zero net energy

INTRODUCTION

This Air Quality, Energy, and Greenhouse Gas (GHG) Impact Report has been prepared to evaluate the potential air quality, energy, and GHG emissions impacts associated with the Enderle Center Project (project) in the City of Tustin (City), County of Orange (County), California. This report follows the guidelines identified by the South Coast Air Quality Management District (SCAQMD) in its *California Environmental Quality Act (CEQA) Air Quality Handbook*,[1] and associated updates. In keeping with these guidelines, this analysis describes existing air quality, including air quality and GHG emissions generated from project-related sources, regional air pollution, and global climate change. In addition, this analysis discusses energy use resulting from implementation of the proposed project and evaluates whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency.

PROJECT LOCATION

The 11.8-acre project site consists of Assessor's Parcel Numbers (APNs) 401-251-04, 401-251-06; 401-252-05, 401-252-06, 401-252-08, 401-252-09, 401-252-10; and 401-253-04 and 401-253-03. The project site is generally bounded on the north by 17th Street; on the east by Enderle Center Drive and the eastern property line of properties fronting Enderle Center Drive; to the south by Vandenberg Lane; and to the west by State Route 55 (SR-55), including properties west of Yorba Street. The project location is shown in Figure 1.

The Enderle Center is currently occupied with 87,136 square feet (sq ft) of commercial business uses, including 28,750 sq ft of restaurant use, 39,960 sq ft of retail and service use, 18,426 sq ft of office use, and surface parking lots. The site also includes ornamental landscaping along the perimeter and throughout the parking areas. See Figure 2.

The project site has a General Plan land use designation of Planned Community Commercial/ Business (PCCB) and a zoning designation of Planned Community Commercial (PC COM). The PCCB land use designation provides opportunities for a variety of miscellaneous retail, professional office, and service-oriented business activities. The PC COM zoning is intended to allow diversification of the relationships of various buildings, structures and open spaces in planned building groups while ensuring substantial compliance with the district regulations and other provisions of the Planned Community District zone.

PROJECT DESCRIPTION

The City of Tustin prepared the 2021–2029 Housing Element of the General Plan in accordance with Government Code Section 65580 et seq. The City is required by State law to periodically update its Housing Element, a mandatory component of the City's General Plan. The update to the Housing Element covers the Sixth Cycle planning period from October 15, 2021, to October 15, 2029.

[1] South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*. Website: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993) (accessed January 2024).

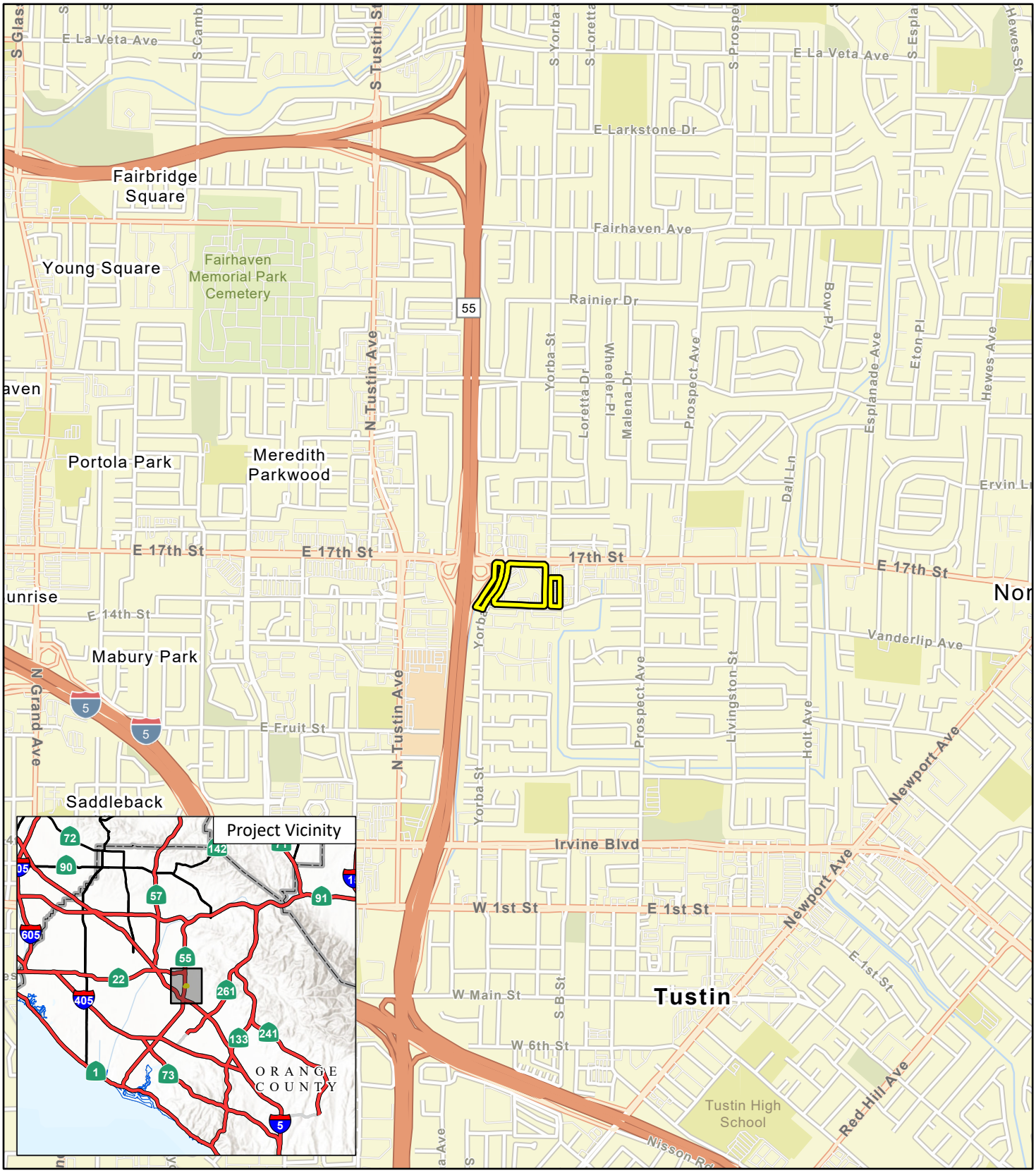

FIGURE 1

Enderle Center Project

Regional Project Location

SOURCE: Esri World Street Map (2024)

J:\ESL2201.76\GIS\Pro\Enderle Center Project\Enderle Center Project.aprx (3/26/2024)

LSA

Project Location

FIGURE 2

N

0 100 200
FEET

SOURCE: Google Maps (2023)

Enderle Center Project

Project Site

J:\ESL2201.76\GIS\Pro\Enderle Center Project\Enderle Center Project.aprx (3/26/2024)

The Housing Element is the City's housing policy and planning document that identifies housing needs and constraints, and sets forth goals, policies, and programs that address the future housing needs for all income levels over an eight-year planning period that coincides with a Regional Housing Needs Allocation (RHNA). During the Housing Element process, the City assessed a number of properties and areas throughout the community that would be able to accommodate the City's assigned RHNA. Of the Housing Element inventory sites, Enderle Center (the project site) was identified as necessary for rezoning under Housing Element Program 1.1f to allow for high density residential/mixed use development.

Pursuant to Housing Element Program 1.1f, the City is proposing an overlay zone (overlay district) for the project site. To accommodate this, a General Plan Amendment (GPA) is needed to allow a Housing Overlay District (residential uses) within Planned Community Commercial/Business land use designations; a Zoning Code Amendment (ZCA) to establish Housing Overlay Districts (overlay zone) in conjunction with the Planned Community Commercial Districts (base zone); and a Zone Change (ZC) that amends the City's zoning map to apply a Housing Overlay District (HOD) to the project site. The proposed HOD would allow for residential development with a maximum density of 59 dwelling units per acre (du/ac) over a maximum development area of 7 acres.

The Housing Element identified the Enderle Center as having capacity for 413 housing units. The anticipated development density was determined through the Housing Element process and is a conservative estimate based on development trends in nearby communities. The anticipated development does not rely on the demolition of any existing building, but rather focuses on areas used for surface parking. No development is proposed as part of this project.

Residential uses are currently not allowed on the project site. Upon approval of the Housing Overlay Zone, the project site could accommodate 413 units over approximately 7 acres of developable land within the existing 11.8-acre site. The anticipated development over 7 acres would take place on underutilized asphalt parking lot areas, and not require demolition of any existing buildings. Parking displaced as a result of redevelopment would be accommodated by vertical parking structures located within the proposed development.

In addition, the project site is envisioned to function as a mixed-use site and a portion of the project site would remain as nonresidential land use. The project site is assumed to be developed with 205,603 sq ft of nonresidential use. As identified above, the Enderle Center is currently developed with 87,136 sq ft of commercial business uses, including 28,750 sq ft of restaurant use, 39,960 sq ft of retail and service use, and 18,426 sq ft of office use. Therefore, the total remaining nonresidential use assumed for future buildout of the project site is an additional 118,467 sq ft, including 39,087 sq ft of restaurant use, 54,328 sq ft of retail and service use, and 25,051 sq ft of office use.

Roadways and utilities may be required to support development of future residential construction within the project site. However, specific infrastructure improvements required to support residential development within the Enderle Center are not known at this time and will not be known until a development project is proposed.

The proposed project does not propose or approve any specific development projects. However, for the purposes of this analysis, future development of the additional 413 units and remaining

commercial buildout capacity associated with the proposed project could occur anytime between October 2024 and October 2029. Construction activities for the residential units would include demolition of the surface parking lot, site preparation, grading, building construction, paving, and architectural coatings.

The existing uses generate approximately 7,058 average daily trips (ADT).[2] With the buildout of the proposed housing units and remaining commercial buildout capacity, the proposed project would generate approximately 18,528 ADT, resulting in 11,470 net new ADT.

The residential units would be constructed in compliance with the version of the California Title 24 Energy Efficiency Standards (Title 24 energy standards) and the Title 24 California Green Building Standards Code (CALGreen Code) in effect at the time building permit applications are submitted.

EXISTING LAND USES IN THE PROJECT AREA

For the purposes of this analysis, sensitive receptors are areas of population that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include residences, schools, daycare centers, hospitals, parks, and similar uses which are sensitive to air quality. Impacts on sensitive receptors are of particular concern because they are the population most vulnerable to the effects of air pollution. The project site is surrounded to the north by 17th Street followed by commercial, residential and office uses; to the east by Enderle Center Drive followed by office uses; to the south by Vandenberg Lane followed by residential uses; and to the west by Tustin city limits and SR-55 and restaurants and office uses.

The closest sensitive receptors to the project site are residential uses, located approximately 70 feet south of the project's site boundary.

[2] EPD Solutions, Inc. 2024. *Enderle Center Trip Generation*.

BACKGROUND

This section provides current background information on air pollutants and their health effects. It also provides current regulatory background information, including information from the California Air Resources Board's (CARB) Air Quality and Land Use Handbook[3] (CARB Handbook); a description of the general health risks of toxics, and the significance criteria for project evaluation. In addition, this section provides background information on energy usage in the project area and provides regulatory background information, including federal, State, and local energy regulations.

AIR POLLUTANTS AND HEALTH EFFECTS

Both State and federal governments have established health-based ambient air quality standards (California Ambient Air Quality Standards [CAAQS] and National Ambient Air Quality Standards [NAAQS], respectively) for six criteria air pollutants:[4] carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Long-term exposure to elevated levels of criteria pollutants may result in adverse health effects. However, emission thresholds established by an air district are used to manage total regional emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations and could adversely affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no known direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_X) and volatile organic compounds (VOCs).

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous outdoor work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses

[3] California Air Resources Board (CARB). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

[4] Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise.

Ozone

Rather than being directly emitted, ozone (O_3 or smog) is formed by photochemical reactions between NO_X and VOCs. Ozone is a pungent, colorless gas. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children. Ozone levels peak during the summer and early fall months.

Carbon Monoxide

Carbon monoxide (CO) is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. CO passes through the lungs into the bloodstream, where it interferes with the transfer of oxygen to body tissues.

Particulate Matter

Particulate matter (PM) is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are 10 microns or less in diameter, or PM_{10}. Fine, suspended particulate matter with an aerodynamic diameter of 2.5 microns or less, or $PM_{2.5}$, is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM_{10} and $PM_{2.5}$. These small particles can be directly emitted into the atmosphere as byproducts of fuel combustion; through abrasion, such as tire or brake lining wear; or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces and can enter the human body through the lungs.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels in the region. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses and cars), smelters (metal refineries), and the manufacture of lead storage batteries have been the primary sources of lead (Pb) released into the atmosphere. Lead has multiple adverse neurotoxic health effects, and children are at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, the United States Environmental Protection Agency (USEPA) strengthened the NAAQS for lead by lowering it from 1.5 to 0.15 micrograms per cubic meter ($\mu g/m^3$). The USEPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas, resulting in an increase in 76 monitors nationally.

Volatile Organic Compounds

Volatile organic compounds (VOCs) (also known as reactive organic gases [ROGs] and reactive organic compounds [ROCs]) are formed from the combustion of fuels and the evaporation of organic solvents. VOCs are not defined as criteria pollutants, however, because VOCs accumulate in the atmosphere more quickly during the winter, when sunlight is limited and photochemical reactions are slower, they are a prime component of the photochemical smog reaction. There are no attainment designations for VOCs.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated by the USEPA and the CARB. Some examples of TACs include benzene, butadiene, formaldehyde, and hydrogen sulfide. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants.

TACs do not have ambient air quality standards (AAQS), but are regulated by the USEPA, the CARB, and the SCAQMD. In 1998, the CARB identified particulate matter from diesel-fueled engines as a TAC. The CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[5] High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high-volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter (DPM) is emitted from mobile sources—primarily "off-road" sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as "on-road" sources such as trucks and buses traveling on freeways and local roadways.

[5] CARB. 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

Although not specifically monitored, recent studies indicate that exposure to DPM may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.[6] The technology for reducing DPM emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. The CARB anticipated that by 2020, average statewide DPM concentrations will decrease by 85 percent from levels in 2000 with full implementation of the CARB's Diesel Risk Reduction Plan,[7] meaning that the statewide health risk from DPM is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000. The CARB 2000 Diesel Risk Reduction Plan is still the most recent version and has not been updated.

Table A summarizes the sources and health effects of air pollutants discussed in this section. Table B presents a summary of CAAQS and NAAQS.

Table A: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	● Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust ● Natural events, such as decomposition of organic matter	● Reduced tolerance for exercise ● Impairment of mental function ● Impairment of fetal development ● Death at high levels of exposure ● Aggravation of some heart diseases (angina)
Nitrogen Dioxide (NO_2)	● Motor vehicle exhaust ● High temperature stationary combustion ● Atmospheric reactions	● Aggravation of respiratory illness ● Reduced visibility ● Reduced plant growth ● Formation of acid rain
Ozone (O_3)	● Atmospheric reaction of organic gases with nitrogen oxides in sunlight	● Aggravation of respiratory and cardiovascular diseases ● Irritation of eyes ● Impairment of cardiopulmonary function ● Plant leaf injury
Lead (Pb)	● Contaminated soil	● Impairment of blood functions and nerve construction ● Behavioral and hearing problems in children
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	● Stationary combustion of solid fuels ● Construction activities ● Industrial processes ● Atmospheric chemical reactions	● Reduced lung function ● Aggravation of the effects of gaseous pollutants ● Aggravation of respiratory and cardiorespiratory diseases ● Increased cough and chest discomfort ● Soiling ● Reduced visibility
Sulfur Dioxide (SO_2)	● Combustion of sulfur-containing fossil fuels ● Smelting of sulfur-bearing metal ores Industrial processes	● Aggravation of respiratory diseases (asthma, emphysema) ● Reduced lung function ● Irritation of eyes ● Reduced visibility ● Plant injury ● Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board (2015).

6 CARB. 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

7 Ibid.

Table B: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
Ozone (O_3)[h]	1-Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10})[i]	24-Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		–		
Fine Particulate Matter ($PM_{2.5}$)[i]	24-Hour	-		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	–	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	
Nitrogen Dioxide (NO_2)[j]	Annual Arithmetic Mean	0.03 ppm (57 µg/m³)	Gas Phase Chemi-luminescence	53 ppb (100 µg/m³)	Same as Primary Standard	Gas Phase Chemi-luminescence
	1-Hour	0.18 ppm (339 µg/m³)		100 ppb (188 µg/m³)	-	
Lead (Pb)[l,m]	30-Day Average	1.5 µg/m³	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m³ (for certain areas)[l]	Same as Primary Standard	
	Rolling 3-Month Average[i]	–		0.15 µg/m³		
Sulfur Dioxide (SO_2)[k]	24-Hour	0.04 ppm (105 µg/m³)	Ultraviolet Fluorescence	0.14 ppm (for certain areas)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1300 µg/m³)	
	1-Hour	0.25 ppm (655 µg/m³)		75 ppb (196 µg/m³)[k]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[k]	–	
Visibility-Reducing Particles[l]	8-Hour	See footnote n	Beta Attenuation and Transmittance through Filter Tape.	No Federal Standards		
Sulfates	24-Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[j]	24-Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

Source: California Air Resources Board (2016) (Website: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

Table notes are provided on the following page.

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California Ambient Air Quality Standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] 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 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact USEPA for further clarification and current national policies.

[c] 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.

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

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

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

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

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

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

[j] 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.

[k] 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.

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

[m] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 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.

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

°C = degrees Celsius
µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
mg/m^3 = milligrams per cubic meter
ppb = parts per billion
ppm = parts per million
USEPA = United States Environmental Protection Agency

ENERGY

Electricity

Electricity is a manmade resource. The production of electricity requires the consumption or conversion of energy resources (including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources) into energy. Electricity is used for a variety of purposes (e.g., lighting, heating, cooling, and refrigeration, and for operating appliances, computers, electronics, machinery, and public transportation systems).

According to the most recent data available, in 2022, California's electricity was generated primarily by natural gas (47.5 percent), renewable sources (52.2 percent), large hydroelectric (7.2 percent), nuclear (8.7 percent), coal (<1.0 percent), and other unspecified sources. Total electric generation in California in 2022 was 287,220 gigawatt-hours (GWh), up 3.4 percent from the 2021 total generation of 277,764 GWh.[8]

The project site is within the service territory of Southern California Edison (SCE). SCE provides electricity to more than 15 million people in a 50,000-square-mile (sq mi) area of Central, Coastal, and Southern California.[9] According to the California Energy Commission (CEC), total electricity consumption in the SCE service area in 2022 was 85,870 GWh (31,604 GWh for the residential sector and 54,266 GWh for the non-residential sector). Total electricity consumption in Orange County in 2022 was 20,244 GWh (20,243,721,856 kilowatt hours [kWh]), including 7,830 GWh for the residential sector and 12,414 GWh for the non-residential sector.[10]

Natural Gas

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

8 California Energy Commission (CEC). 2021a. *2020 Total System Electric Generation*. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation (accessed January 2024).

9 Southern California Edison (SCE). 2020. About Us. Website: https://www.sce.com/about-us/who-we-are (accessed January 2024).

10 CEC. 2023. Electricity Consumption by County and Entity. Website: http://www.ecdms.energy.ca.gov/elecbycounty.aspx and http://www.ecdms.energy.ca.gov/elecbyutil.aspx (accessed January 2024).

Natural gas consumed in California is used for electricity generation (45 percent), residential uses (21 percent), industrial uses (25 percent), and commercial uses (9 percent). California continues to depend on out-of-state imports for nearly 90 percent of its natural gas supply.[11]

The Southern California Gas Company (SoCalGas) is the natural gas service provider for the project site. SoCalGas provides natural gas to approximately 21.8 million people in a 24,000 sq mi service area throughout Central and Southern California, from Visalia to the Mexican border.[12] According to the CEC, total natural gas consumption in the SoCalGas service area in 2022 was 5,026 million therms (2,230 million therms for the residential sector). Total natural gas consumption in Orange County in 2021 was 573 million therms (572,454,744 therms), including 352 million therms for the residential sector and 221 million therms for the non-residential sector.[13]

Fuel

Petroleum is also a non-renewable fossil fuel. Petroleum is a thick, flammable, yellow-to-black mixture of gaseous, liquid, and solid hydrocarbons that occurs naturally beneath the earth's surface. Petroleum is primarily recovered by oil drilling. It is refined into a large number of consumer products, primarily fuel oil, gasoline, and diesel.

The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has steadily increased from about 14.9 miles per gallon (mpg) in 1980 to 22.9 mpg in 2021.[14] Federal fuel economy standards have changed substantially since the Energy Independence and Security Act was passed in 2007. This act, which originally mandated a national fuel economy standard of 35 mpg by year 2020[15], applies to cars and light trucks of Model Years 2011 through 2020. In March 2020, the United States Environmental Protection Agency (USEPA) and National Highway Traffic Safety Administration (NHTSA) finalized the Corporate Average Fuel Economy (CAFE) standards for Model Years 2024–2026 Passenger Cars and Light Trucks, further detailed below.

Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles. According to the most recent data available, in 2021, total gasoline consumption in California was 289,918 thousand barrels

11 CEC. 2021b. Supply and Demand of Natural Gas in California. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california (accessed January 2024).

12 Southern California Gas Company (SoCalGas). 2020. About SoCalGas. Website: https://www3.socalgas.com/about-us/company-profile (accessed January 2024).

13 CEC. 2023. Gas Consumption by County and Entity. Website: http://www.ecdms.energy.ca.gov/gasbycounty.aspx and http://www.ecdms.energy.ca.gov/gasbyutil.aspx (accessed January 2024).

14 U.S. Department of Transportation (USDOT). "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." Website: https://www.bts.dot.gov/bts/bts/content/average-fuel-efficiency-us-light-duty-vehicles (accessed January 2024).

15 U.S. Department of Energy. 2007. "Energy Independence & Security Act of 2007." Website: https://www.afdc.energy.gov/laws/eisa (accessed January 2024).

(12.2 billion gallons) or 1,464.7 trillion British Thermal Units (BTU).[16] Of the total gasoline consumption, 273,289 thousand barrels (11.5 billion gallons) or 1,380.7 trillion BTU were consumed for transportation.[17] Based on fuel consumption obtained from CARB's California Emissions Factor Model, Version 2021 (EMFAC2021), approximately 1.2 billion gallons of gasoline and approximately 157.1 million gallons of diesel will be consumed from vehicle trips in Orange County in 2024..

GREENHOUSE GASES

Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ± 0.2° Celsius (°C) or 1.1 ± 0.4° Fahrenheit (°F) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.[18]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

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

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is

16 U.S. Energy Information Administration (EIA). 2022. California State Profile and Energy Estimates, Data. Website: www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_mg.html&sid=CA (accessed January 2024).

17 Ibid.

18 The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the naturally occurring greenhouse effect is necessary to keep our planet at a comfortable temperature.

excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this air quality analysis, the term "GHGs" will refer collectively to the six gases listed above.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to carbon dioxide, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e). Table C shows the GWP for each type of GHG. For example, SF_6 is 23,900 times more potent at contributing to global warming than CO_2.

Table C: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-Year Time Horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	310
HFC-23	270	11,700
HFC-134a	14	140
HFC-152a	1.4	140
PFC: Tetrafluoromethane (CF_4)	50,000	6,500
PFC: Hexafluoromethane (C_2F_6)	10,000	9,200
Sulfur Hexafluoride (SF_6)	3,200	23,900

Source: *Second Update to the Climate Change Scoping Plan: Building on the Framework* (CARB 2017). Website: www.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents (accessed January 2024).
HFC = hydrofluorocarbons
PFC = perfluorocarbons

The following discussion summarizes the characteristics of the six GHGs and black carbon.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form, as carbon dioxide (CO_2). Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants, volcanic out gassing, decomposition of organic matter and evaporation from the oceans. Human caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of manmade emissions of CO_2 each year. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of manmade CO_2, and consequently, the gas is building up in the atmosphere.

In 2021, total annual CO_2 accounted for approximately 81.2 percent of California's overall GHG emissions.[19] Transportation is the single largest source of CO_2 in California, which is primarily comprised of on-road travel. Electricity production, industrial and residential sources also make important contributions to CO_2 emissions in California.

Methane

Methane (CH_4) is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH_4 in California. Total annual emissions of CH_4 accounted for approximately 9.8 percent of GHG emissions in California in 2021.[20]

Nitrous Oxide

Nitrous oxide (N_2O) is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. Nitrous oxide emissions accounted for approximately 3.4 percent of GHG emissions in California in 2021.[21]

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[22] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 5.6 percent of GHG emissions in California in 2021.[23]

Black Carbon

Black carbon is the most strongly light-absorbing component of PM formed by burning fossil fuels such as coal, diesel, and biomass. Black carbon is emitted directly into the atmosphere in the form of $PM_{2.5}$ and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in

19 CARB. 2022. *GHGs Descriptions & Sources in California*. Website: ww2.arb.ca.gov/ghg-descriptions-sources (accessed January 2024).

20 Ibid.

21 Ibid.

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

23 CARB. 2022. op. cit.

the atmosphere, black carbon can absorb one million times more energy than CO_2.[24] Black carbon contributes to climate change both directly, such as absorbing sunlight, and indirectly, such as affecting cloud formation. However, because black carbon is short-lived in the atmosphere, it can be difficult to quantify its effect on global warming.

Most U.S. emissions of black carbon come from mobile sources (52 percent), particularly from diesel-fueled vehicles. The other major source of black carbon is open biomass burning, including wildfires, although residential heating and industry also contribute. The CARB estimates that the annual black carbon emissions in California will be reduced approximately 50 percent below 2013 levels by 2030.[25]

24 U.S. Environmental Protection Agency (USEPA). 2015. Black Carbon, Basic Information. February 14, 2017. Website: 19january2017snapshot.epa.gov/www3/airquality/blackcarbon/basic.html (accessed January 2024).

25 CARB. 2017b. *Short-Lived Climate Pollutant Reduction Strategy.* March. Website: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf (accessed January 2024).

REGULATORY SETTING

AIR QUALITY REGULATIONS

The USEPA and the CARB regulate direct emissions from motor vehicles. The SCAQMD is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as monitoring ambient pollutant concentrations.

Federal Regulations

Federal Clean Air Act

The 1970 federal Clean Air Act (CAA) authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The Federal Clean Air Act Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required of areas of the nation that exceed the standards. Under the Clean Air Act, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates.

State Regulations

California Clean Air Act

In 1988, the California Clean Air Act (CCAA) required that all air districts in the State endeavor to achieve and maintain CAAQS for CO, O_3, SO_2, and NO_2 by the earliest practical date. The California Clean Air Act provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

California Air Resources Board

The CARB is the State's "clean air agency." The CARB's goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

Assembly Bill 2588 Air Toxics "Hot Spots" Information and Assessment Act. Under Assembly Bill (AB) 2588, stationary sources of air pollutants are required to report the types and quantities of certain substances their facilities routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, determine health risks, and notify nearby residents of significant risks.

The California Air Resources Board Handbook. The CARB has developed an Air Quality and Land Use Handbook[26] which is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. According to the CARB Handbook, air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. Other studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California. The CARB Handbook recommends that county and city planning agencies strongly consider proximity to these sources when finding new locations for "sensitive" land uses such as homes, medical facilities, daycare centers, schools, and playgrounds.

Land uses that can produce air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the CARB Handbook include taking steps to avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day;
- Within 1,000 feet of a major service and maintenance rail yard;
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries;
- Within 300 feet of any dry cleaning operation (for operations with two or more machines, provide 500 feet); and
- Within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater).

The CARB Handbook specifically states that its recommendations are advisory and acknowledges land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

The recommendations are generalized and do not consider site-specific meteorology, freeway truck percentages, or other factors that influence risk for a particular project site. The purpose of this guidance is to help land use agencies determine when to further examine project sites for actual health risk associated with the location of new sensitive land uses.

Regional Regulations

South Coast Air Quality Management District

The SCAQMD has jurisdiction over most air quality matters in the South Coast Air Basin (Basin). This area includes all of Orange County, Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of

[26] CARB. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

Riverside County. The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin and is tasked with implementing certain programs and regulations required by the CAA and the CCAA. The SCAQMD prepares plans to attain CAAQS and NAAQS. SCAQMD is directly responsible for reducing emissions from stationary (area and point) sources. The SCAQMD develops rules and regulations, establishes permitting requirements, inspects emissions sources, and enforces such measures though educational programs or fines, when necessary.

The proposed project could be subject to the following SCAQMD rules and regulations:[27]

- **Regulation IV - Prohibitions:** This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air pollutant emissions, fuel contaminants, start-up/shutdown exemptions, and breakdown events.
    - **Rule 402 - Nuisance:** This rule restricts the discharge of any contaminant in quantities that cause or have a natural ability to cause injury, damage, nuisance, or annoyance to businesses, property, or the public.
    - **Rule 403 - Fugitive Dust:** This rule requires the prevention, reduction, or mitigation of fugitive dust emissions from a project site. Rule 403 restricts visible fugitive dust to a project property line, restricts the net PM_{10} emissions to less than 50 µg/m^3 and restricts the tracking out of bulk materials onto public roads. Additionally, Rule 403 requires an applicant to utilize one or more of the best available control measures (identified in the tables within the rule). Control measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers, and/or ceasing all activities. Finally, Rule 403 requires that a contingency plan be prepared if so determined by the USEPA. In addition, SCAQMD Rule 403(e), Additional Requirements for Large Operations, includes requirements to provide Large Operation Notification Form 403 N, appropriate signage, additional dust control measures, and employment of a dust control supervisor that has successfully completed the Dust Control training class in the South Coast Air Basin.
- **Regulation XI - Source Specific Standards:** Regulation XI sets emissions standards for different sources.
    - **Rule 1113 - Architectural Coatings:** This rule limits the amount of VOCs from architectural coatings and solvents, which lowers the emissions of odorous compounds.

The SCAQMD is responsible for demonstrating regional compliance with AAQS but has limited indirect involvement in reducing emissions from fugitive, mobile, and natural sources. To that end, the SCAQMD works cooperatively with the CARB, the Southern California Association of Governments (SCAG), county transportation commissions, local governments, and other federal and State government agencies. It has responded to this requirement by preparing a series of Air Quality Management Plans (AQMPs) to meet CAAQS and NAAQS. SCAQMD and the SCAG are responsible for formulating and implementing the AQMP for the Basin. The main purpose of an AQMP is to bring

[27] SCAQMD. 2024. South Coast AQMD Rule Book. Website: https://www.aqmd.gov/home/rules-compliance/rules (accessed January 2024).

the area into compliance with federal and State air quality standards. Every 3 years, SCAQMD prepares a new AQMP, updating the previous plan and 20-year horizon.[28]

The Final 2022 Air Quality Management Plan is the currently adopted AQMP. Key elements of the Final 2022 AQMP include the following:

- Calculating and taking credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation)
- A strategy with fair-share emission reductions at the federal, State, and local levels
- Investment in strategies and technologies meeting multiple air quality objectives
- Seeking new partnerships and significant funding for incentives to accelerate deployment of zero-emission and near-zero emission technologies
- Enhanced socioeconomic assessment, including an expanded environmental justice analysis
- Attainment of the 24-hour $PM_{2.5}$ standard in 2019 with no additional measures
- Attainment of the annual $PM_{2.5}$ standard by 2025 with implementation of a portion of the O_3 strategy
- Attainment of the 1-hour O_3 standard by 2022 with no reliance on "black box" future technology (CAA Section 182(e)(5) measures)

The 2022 AQMP builds upon measures already in place from previous AQMPs. It also includes a variety of additional strategies such as regulation, accelerated deployment of available cleaner technologies (e.g., zero emissions technologies, when cost-effective and feasible, and low NO_X technologies in other applications), best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), incentives, and other CAA measures to achieve the 2015 8-hour ozone standard.

Southern California Association of Governments

SCAG is a council of governments for Los Angeles, Orange, Riverside, San Bernardino, Imperial, and Ventura Counties. It is a regional planning agency and serves as a forum for regional issues relating to transportation, the economy and community development, and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With regard to air quality planning, SCAG prepares the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP), which address regional development and growth forecasts and form the basis for the land use and transportation control portions of the AQMP and are utilized in the preparation of the air

[28] SCAQMD. 2022. *Final 2022 Air Quality Management Plan*. December 2.

quality forecasts and consistency analysis included in the AQMP. The RTP, RTIP, and AQMP are based on projections originating within local jurisdictions.

Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality. SCAG's Regional Comprehensive Plan (RCP) provides growth forecasts that are used in the development of air quality-related land use and transportation control strategies by the SCAQMD. The RCP is a framework for decision-making for local governments, assisting them in meeting federal and State mandates for growth management, mobility, and environmental standards, while maintaining consistency with regional goals regarding growth and changes. Policies within the RCP include consideration of air quality, land use, transportation, and economic relationships by all levels of government.

SCAG adopted the Connect SoCal: The 2024–2050 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal 2024)[29] on April 4, 2024. Connect SoCal 2024 is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. Connect SoCal is an important planning document for the region, allowing project sponsors to qualify for federal funding and takes into account operations and maintenance costs, to ensure reliability, longevity, and cost effectiveness. The forecasted development pattern, when integrated with the financially constrained transportation investments identified in Connect SoCal 2024, would reach the GHG emissions reduction target set by CARB, including the regional target of reducing GHG emissions from autos and light-duty trucks by 19 percent by 2035 (compared to 2005 levels).

Local Regulations

City of Tustin General Plan

The City of Tustin addresses air quality in the Conservation, Open Space, and Recreation Element of the City of Tustin General Plan.[30] The Conservation, Open Space, and Recreation Element contains policies that work to improve air quality and reduce particulate emissions. The following policies are applicable to the proposed project:

- **Policy 1.1:** Cooperate with the South Coast Air Quality Management District and the Southern California Association of Governments in their effort to implement provisions of the region's Air Quality Management Plan, as amended.

- **Policy 1.2:** Design safe and efficient vehicular access to commercial land uses from arterial streets to insure efficient vehicular ingress and egress.

[29] Southern California Association of Governments (SCAG). 2024. Connect SoCal: The 2024–2050 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments. Website: https://scag.ca.gov/sites/main/files/file-attachments/23-2987-connect-socal-2024-final-complete-040424.pdf?1712261565 (accessed April 2024).

[30] City of Tustin. 2017. *City of Tustin General Plan*. July.

- **Policy 1.3:** Locate multiple family developments close to commercial areas to encourage pedestrian rather than vehicular travel.
- **Policy 1.7:** Create the maximum possible opportunities for bicycles as an alternative transportation mode and recreational use.
- **Policy 2.1:** Reduce vehicle trips through incentives, regulations and/or Transportation Demand Management (TDM) programs.
- **Policy 2.2:** Reduce total vehicle miles traveled (VMT) through incentives, regulations and/or Transportation Demand Management.
- **Policy 2.6:** Encourage non-motorized transportation through the provision of bicycle and pedestrian pathways.
- **Policy 2.7:** Encourage employer rideshare and transit incentives programs by local businesses.
- **Policy 2.8:** Manage non-residential parking supply to discourage auto use, while ensuring that economic development goals will not be sacrificed.

ENERGY REGULATORY SETTING

Federal and State agencies regulate energy use and consumption through various means and programs. On the federal level, the U.S. Department of Transportation (USDOT), the United States Department of Energy, and the USEPA are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure improvements. On the State level, the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) are two agencies with authority over different aspects of energy.

The CPUC regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies and serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy.

The CEC is the State's primary energy policy and planning agency. The CEC forecasts future energy needs, promotes energy efficiency, supports energy research, develops renewable energy resources, and plans for/directs state response to energy emergencies. The applicable federal, State, regional, and local regulatory framework is discussed below.

Federal Regulations

Energy Policy Act of 2005

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under this Act, consumers and businesses can obtain federal tax credits for purchasing fuel-efficient appliances and products (including hybrid vehicles), building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

Corporate Average Fuel Economy (CAFE) Standards

On March 31, 2022, the National Highway Traffic Safety Administration (NHTSA) finalized the Corporate Average Fuel Economy (CAFE) standards for Model Years 2024–2026 Passenger Cars and Light Trucks. The amended CAFE standards would require an industry wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024–2025, and 10 percent annually for model year 2026. The final standards are estimated to save about 234 billion gallons of gas between model years 2030 to 2050.

State Regulations

Assembly Bill 1575, Warren-Alquist Act

In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted Assembly Bill (AB) 1575 (also known as the Warren-Alquist Act), which created the CEC. The statutory mission of the CEC is to forecast future energy needs; license power plants of 50 megawatts (MW) or larger; develop energy technologies and renewable energy resources; plan for and direct State responses to energy emergencies; and, perhaps most importantly, promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code (PRC) Section 21100(b)(3) and *State CEQA Guidelines* Section 15126.4 to require Environmental Impact Reports (EIRs) to include, where relevant, mitigation measures proposed to minimize the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F to the *State CEQA Guidelines*. Appendix F assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the *State CEQA Guidelines* also states that the goal of conserving energy implies the wise and efficient use of energy and the means of achieving this goal, including (1) decreasing overall per capita energy consumption; (2) decreasing reliance on fossil fuels such as coal, natural gas, and oil; and (3) increasing reliance on renewable energy sources.

Senate Bill 1389, Energy: Planning and Forecasting

In 2002, the State Legislature passed Senate Bill (SB) 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies

a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission vehicles (ZEVs) and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled (VMT) and accommodate pedestrian and bicycle access.

In compliance with the requirements of SB 1389, the CEC adopts an Integrated Energy Policy Report every 2 years and an update every other year. The most recently adopted report includes the *2023 Integrated Energy Policy Report.*[31] The *Integrated Energy Policy Report* covers a broad range of topics, including decarbonizing buildings, integrating renewables, energy efficiency, energy equity, integrating renewable energy, updates on Southern California electricity reliability, climate adaptation activities for the energy sector, natural gas assessment, transportation energy demand forecast, and the California Energy Demand Forecast. The *Integrated Energy Policy Report* provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs.

Renewable Portfolio Standard

SB 1078 established the California Renewable Portfolio Standards program in 2002. SB 1078 initially required that 20 percent of electricity retail sales be served by renewable resources by 2017; however, this standard has become more stringent over time. In 2006, SB 107 accelerated the standard by requiring that the 20 percent mandate be met by 2010. In April 2011, SB 2 required that 33 percent of electricity retail sales be served by renewable resources by 2020. In 2015, SB 350 established tiered increases to the Renewable Portfolio Standards of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. In 2018, SB 100 increased the requirement to 60 percent by 2030 and required that all the State's electricity come from carbon-free resources by 2045. SB 100 took effect on January 1, 2019.[32]

Title 24, California Building Code

Energy consumption by new buildings in California is regulated by the Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations (CCR), known as the California Building Code (CBC). The CEC first adopted the Building Energy Efficiency Standards for Residential and Non-residential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the State. The CBC is updated every 3 years, with the most recent update consisting of the 2022 CBC that became effective January 1, 2023. The efficiency standards apply to both new construction and rehabilitation of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in CCR Title 24.

---

31 CEC. 2023. *2023 Integrated Energy Policy Report*. California Energy Commission. Docket Number: 23-IEPR-01.

32 California Public Utilities Commission (CPUC). 2019. Renewables Portfolio Standard Program. Website: cpuc.ca.gov/rps (accessed January 2024).

California Green Building Standards Code (CALGreen Code)

In 2010, the California Building Standards Commission (CBSC) adopted Part 11 of the Title 24 Building Energy Efficiency Standards, referred to as the California Green Building Standards Code (CALGreen Code). The CALGreen Code took effect on January 1, 2011. The CALGreen Code is updated on a regular basis, with the most recent update consisting of the 2022 CALGreen Code standards that became effective January 1, 2023. The CALGreen Code established mandatory measures for residential and non-residential building construction and encouraged sustainable construction practices in the following five categories: (1) planning and design, (2) energy efficiency, (3) water efficiency and conservation, (4) material conservation and resource efficiency, and (5) indoor environmental quality. Although the CALGreen Code was adopted as part of the State's efforts to reduce greenhouse gas (GHG) emissions, the CALGreen Code standards have co-benefits of reducing energy consumption from residential and non-residential buildings subject to the standard.

California Energy Efficiency Strategic Plan

On September 18, 2008, the CPUC adopted California's first Long-Term Energy Efficiency Strategic Plan, presenting a roadmap for energy efficiency in California. The Plan articulates a long-term vision and goals for each economic sector and identifies specific near-term, mid-term, and long-term strategies to assist in achieving those goals. The Plan also reiterates the following four specific programmatic goals known as the "Big Bold Energy Efficiency Strategies" that were established by the CPUC in Decisions D.07-10-032 and D.07-12-051:

- All new residential construction will be zero net energy (ZNE) by 2020.
- All new commercial construction will be ZNE by 2030.
- 50 percent of commercial buildings will be retrofitted to ZNE by 2030.
- 50 percent of new major renovations of State buildings will be ZNE by 2025.

Regional Regulations

There are no regional regulations that apply to the proposed project.

Local Regulations

City of Tustin General Plan

The City of Tustin addresses energy in the Conservation, Open Space, and Recreation Element of the City of Tustin General Plan.[33] The Conservation, Open Space, and Recreation Element contains policies that work to reduce energy consumption. The following policies are applicable to the proposed project:

- **Policy 4.1:** Promote energy conservation in all sectors of the City including residential, commercial, and industrial.

[33] City of Tustin. 2017. op. cit.

- **Policy 4.2:** Promote local recycling of wastes and the use of recycled materials.

GREENHOUSE GAS REGULATORY SETTING

This section describes regulations related to GHGs at the federal, State, and local level.

Federal Regulations

The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the USEPA has the authority to regulate CO_2 emissions under the CAA. While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the USEPA commenced several actions in 2009 to implement a regulatory approach to global climate change.

This includes the 2009 USEPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the USEPA Administrator signed an endangerment finding action in 2009 under the Clean Air Act, finding that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

In October 2012, the USEPA and the NHTSA, on behalf of the U.S. Department of Transportation, issued final rules to further reduce GHG emissions and improve CAFE standards for light-duty vehicles for model years 2017 and beyond (77 *Federal Register* 62624). The NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5 miles per gallon (mpg), limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025 (77 *Federal Register* 62630).

On March 31, 2022, the NHTSA finalized the CAFE standards for Model Years 2024–2026 Passenger Cars and Light Trucks. The amended CAFE standards would require an industry wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024–2025, and 10 percent annually for model year 2026. The final standards are estimated to save about 234 billion gallons of gas between model years 2030 to 2050.

State Regulations

The CARB is the lead agency for implementing climate change regulations in the State. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

Assembly Bill 1493 (2002)

In a response to the transportation sector's significant contribution to California's CO_2 emissions, AB 1493 was enacted on July 22, 2002. AB 1493 requires the CARB to set GHG emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial

personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the CARB in 2004, but the needed waiver of CCAA Preemption was not granted by the USEPA until June 30, 2009. The CARB responded by amending its original regulation, now referred to as Low Emission Vehicle III, to take effect for model years starting in 2017 to 2025. The Trump administration revoked California's waiver in 2019; however, the Biden administration restored California's waiver in 2021.

Executive Order S-3-05 (2005)

Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California's GHG emissions reduction targets, which established the following goals:

- GHG emissions should be reduced to 2000 levels by 2010;
- GHG emissions should be reduced to 1990 levels by 2020; and
- GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate efforts of various State agencies in order to collectively and efficiently reduce GHGs. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

The Secretary of CalEPA leads this Climate Action Team (CAT) made up of representatives from State agencies as well as numerous other boards and departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide GHG targets that were established in the executive order and further defined under AB 32, the "Global Warming Solutions Act of 2006." The first CAT Report to the Governor and the Legislature was released in March 2006, which it laid out 46 specific emission reduction strategies for reducing GHG emissions and reaching the targets established in the executive order. The most recent report was released in December 2020.

Assembly Bill 32 (2006), California Global Warming Solutions Act

California's major initiative for reducing GHG emissions is AB 32, passed by the State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) of CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The Scoping Plan was approved by the CARB on December 11, 2008, and contains the main strategies California will implement to achieve the reduction of approximately 169 MMT CO_2e, or approximately 30 percent, from the State's projected 2020

emissions level of 596 MMT CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- The Low-Carbon Fuel Standard (15.0 MMT CO_2e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines CARB climate change priorities until 2020, and also sets the groundwork to reach long-term goals set forth in EOs S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,[34] to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

Most recently, the 2022 Scoping Plan[35] was approved in December 2022 and assesses progress towards achieving the SB 32 2030 target and lay out a path to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

Senate Bill 97 (2007)

SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code [PRC], Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the *State CEQA Guidelines* in November 2018, which went into effect in December 2018. The amendments do not identify a

34 CARB. 2017a. *California's 2017 Climate Change Scoping Plan*. November.

35 CARB. 2021. *2022 Scoping Plan Update*. May 10. Website: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf (accessed January 2024).

threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

Senate Bill 375 (2008)

SB 375, the Sustainable Communities and Climate Protection Act, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. On September 23, 2010, the CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the Metropolitan Planning Organization (MPOs); the targets require a 6 to 15 percent reduction by 2020 and between 13 to 19 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs such as the Fresno Council of Governments will work with local jurisdictions in the development of Sustainable Communities Strategy (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. Pursuant to SB 375, the Los Angeles/Southern California reduction targets for per capita vehicular emissions were 8 percent by 2020 and are 19 percent by 2035 as shown in Table D.

Table D: Senate Bill 375 Regional Greenhouse Gas Emissions Reduction Targets

Metropolitan Planning Organization	By 2020 (percent)	By 2035 (percent)
San Francisco Bay Area	10	19
San Diego	15	19
Sacramento	7	19
Central Valley/San Joaquin	6–13	13–16
Los Angeles/Southern California	8	19

Source: California Air Resources Board (2018).

Executive Order B-30-15 (2015)

Governor Jerry Brown signed EO B-30-15 on April 29, 2015, which added the immediate target of:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act

SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent; and
- Increasing energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the CPUC for the private utilities and by the CEC for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other non-renewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to state energy agencies under existing law. The addition made by this legislation requires State energy agencies to plan for and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197

In summer 2016 the Legislature passed, and the Governor signed, SB 32, and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an Intergovernmental Panel on Climate Change (IPCC) analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million CO_2e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which raises California's Renewables Portfolio Standard (RPS) requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18

EO B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." EO B-55-18 directs CARB to work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon

neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Assembly Bill 1279

AB 1279 was signed in September of 2022, and codifies the State goals of achieving net carbon neutrality by 2045 and maintaining net negative GHG emissions thereafter. This bill also requires California to reduce statewide GHG emissions by 85 percent compared to 1990 levels by 2045 and directs CARB to work with relevant state agencies to achieve these goals.

Title 24, Part 11, Building Standards Code and CALGreen Code

In November 2008, the California Building Standards Commission established the California Green Building Standards Code (CALGreen Code), which sets performance standards for residential and non-residential development to reduce environmental impacts and encourage sustainable construction practices. The CALGreen Code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code is updated every 3 years and was most recently updated in 2022 to include new mandatory measures for residential as well as non-residential uses; the new measures took effect on January 1, 2023.

California Building Efficiency Standards (Title 24, Part 6)

The California Building Standards Code, or Title 24 of the California Code of Regulations (CCR) contains the regulations that govern the construction of buildings in California. Within the Building Standards Code, two parts pertain to the incorporation of both energy efficient and green building elements into land use development. Part 6 is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. These standards were first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption and are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. The current set of standards was adopted in 2022 and applies to projects seeking building permits on or after January 1, 2023. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Cap and Trade

The development of a cap-and-trade program was included as a key reduction measure of the CARB AB 32 Climate Change Scoping Plan. The cap-and-trade program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by 2020 and ultimately achieving an 80 percent reduction from 1990 levels by 2050. The cap-and-trade emissions trading program developed by the CARB took effect on January 1, 2012, with enforceable compliance obligations beginning January 1, 2013. The cap-and-trade program aims to regulate GHG emissions from the largest producers in the State by setting a statewide firm limit, or cap, on allowable annual GHG emissions. The cap was set in 2013 at approximately 2 percent below the emissions forecast for 2020. In 2014, the cap declined approximately 2 percent. Beginning in 2015 and continuing through

2020, the cap has been declining approximately 3 percent annually. The CARB administered the first auction on November 14, 2012, with many of the qualified bidders representing corporations or organizations that produce large amounts of GHG emissions, including energy companies, agriculture and food industries, steel mills, cement companies, and universities. On January 1, 2015, compliance obligation began for distributors of transportation fuels, natural gas, and other fuels. The cap-and-trade program was initially slated to sunset in 2020 but the passage of SB 398 in 2017 extended the program through 2030.

Executive Order N-79-20

EO N-79-20, which was signed by the Governor on September 23, 2020, sets the following goals for the State: 100 percent of in-state sales of new passenger cars and trucks shall be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the State shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment in the State shall be zero-emission by 2035, where feasible.

Low Carbon Fuel Standard

In January 2007, EO S-01-07 established a Low Carbon Fuel Standard (LCFS). This executive order calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and that an LCFS for transportation fuels be established for California. The LCFS applies to all refiners, blenders, producers, or importers ("Providers") of transportation fuels in California, including fuels used by off-road construction equipment. In June 2007, CARB adopted the LCFS under AB 32 pursuant to Health and Safety Code Section 38560.5, and, in April 2009, CARB approved the new rules and carbon intensity reference values with new regulatory requirements taking effect in January 2011. The standards require providers of transportation fuels to report on the mix of fuels they provide and demonstrate they meet the LCFS intensity standards annually. This is accomplished by ensuring that the number of "credits" earned by providing fuels with a lower carbon intensity than the established baseline (or obtained from another party) is equal to or greater than the "deficits" earned from selling higher intensity fuels. In response to certain court rulings, CARB re-adopted the LCFS regulation in September 2015, and the LCFS went into effect on January 1, 2016. In 2018, CARB approved amendments to the regulation to readjust carbon intensity benchmarks to meet California's 2030 GHG reductions targets under SB 32. These amendments include opportunities to promote zero emission vehicle (ZEV) adoption, carbon capture and sequestration, and advanced technologies for decarbonization of the transportation sector.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of ZEVs, into a single package of regulatory standards for vehicle model years 2017 through 2025. The new regulations strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's ZEVs regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of

zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the State. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 40 percent fewer GHGs and 75 percent fewer smog-forming emissions than 2012 model year vehicles.

Executive Order B-48-18

In January 2018, Governor Brown signed EO B-48-18 requiring all State entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the EV charging stations should be direct current fast chargers. This order also requires all State entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a Plug-in Charging Station Design Guidebook and update the 2015 Hydrogen Station Permitting Guidebook to aid in these efforts. All State entities are required to participate in updating the 2016 Zero-Emissions Vehicle Action Plan to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all State entities are to support and recommend policies and actions to expand ZEV infrastructure at residential land uses, through the LCFS program, and recommend how to ensure affordability and accessibility for all drivers.

Regional Regulations

South Coast Air Quality Management District

In 2008, the SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the Basin. The Working Group developed several different options that are contained in the SCAQMD 2008 draft guidance document titled, *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans,*[36] that could be applied by lead agencies. On September 28, 2010, SCAQMD Working Group Meeting No. 15 provided further guidance, including a tiered approach for evaluating GHG emissions for development projects where the SCAQMD is not the lead agency. The SCAQMD has not presented a finalized version of these thresholds to the governing board.

The SCAQMD identifies the emissions level for which a project would not be expected to substantially conflict with any State legislation adopted to reduce statewide GHG emissions. As such, the utilization of a service population represents the rates of emissions needed to achieve a fair share of the State's mandated emissions reductions. Overall, the SCAQMD identifies a GHG efficiency level that, when applied statewide or to a defined geographic area, would meet the year 2020 and post-2020 emissions targets as required by AB 32 and SB 32. If projects are able to achieve targeted rates of emissions per the service population, the State will be able to accommodate expected population growth and achieve economic development objectives, while also abiding by AB 32's emissions target and future post-2020 targets.

[36] SCAQMD. 2008b. *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans*.

Southern California Association of Governments

On April 4, 2024, SCAG adopted Connect SoCal 2024.[37] In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled (VMT) from automobiles and light-duty trucks and thereby reduce GHG emissions from these sources. For the SCAG region, CARB has set GHG reduction targets at 8 percent below 2005 per capita emissions levels by 2020, and 19 percent below 2005 per capita emissions levels by 2035. The 2024–2050 RTP/SCS lays out a strategy for the region to meet these targets. Overall, the SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high-quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles.[38] However, the SCS does not require that local General Plans, Specific Plans, or zoning be consistent with the SCS; SCAG is required to consider local land use controls when drafting the SCS.

The horizon year for Connect SoCal 2024 is 2050 and the plan projects that by 2050, 66 percent of new households and 54 percent of new jobs will be located in Priority Development Areas, either near transit or in walkable communities. The objectives of Connect SoCal 2024 are to create a region with: transit as a backbone of the transportation system; more Complete Streets where people and safety are prioritized; policies that encourage emerging technologies and mobility innovations that support rather than hamper regional goals; more housing, jobs, and mobility options closer together in Priority Development Areas to preserve natural lands and open spaces; more housing to address the existing housing need as defined by the RHNA; safe and fluid movement of goods, with a commitment to the broad deployment of zero- and near-zero emission technologies.

Local Regulations

City of Tustin

The City of Tustin has not prepared a Climate Action Plan. The air quality and energy policies from the City of Tustin General Plan, identified above, would also work to reduce GHG emissions.

37 SCAG. 2024. op. cit.
38 Ibid.

SETTING

This section provides the current SCAQMD attainment status, climate and air quality, ambient air quality monitoring results, and GHG emissions inventory.

ATTAINMENT STATUS

The CARB is required to designate areas of the state as attainment, nonattainment, or unclassified for all State standards. An *attainment* designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A *nonattainment* designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An *unclassified* designation signifies that data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The USEPA designates areas for O_3, CO, and NO_2 as either does not meet the primary standards, or cannot be classified, or better than national standards. For SO_2, areas are designated as does not meet the primary standards, does not meet the secondary standards, cannot be classified, or better than national standards.

Table E provides a summary of the attainment status for the Basin with respect to NAAQS and CAAQS.

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

Pollutant	State	Federal
O_3 1 hour	Nonattainment	Extreme Nonattainment
O_3 8 hour	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Serious Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	N/A	Attainment/Unclassified
Lead	Attainment	Attainment[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: South Coast Air Quality Management District (2018).
[1] Except in Los Angeles County.
CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SO_2 = sulfur dioxide

EXISTING CLIMATE AND AIR QUALITY

Air quality in the planning area is not only affected by various emission sources (e.g., mobile and industry), but also by atmospheric conditions (e.g., wind speed, wind direction, temperature, and rainfall). The combination of topography, low mixing height, abundant sunshine, and emissions from

the second-largest urban area in the United States gives the Basin some of the worst air pollution in the nation.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s°F. With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station closest to the site is the Tustin Irvine Ranch Station.[39] The monthly average maximum temperature recorded at this station ranged from 66.8°F in January to 85.2°F in August, with an annual average maximum of 75.4°F. The monthly average minimum temperature recorded at this station ranged from 40.2°F in January to 59.1°F in August, with an annual average minimum of 49.4°F. These levels are representative of the project area.

The majority of annual rainfall in the Basin occurs between November and March. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. Average monthly rainfall at the Tustin Irvine Ranch Station varied from 0.01 inch in July to 2.67 inches in February, with an annual total of 12.86 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid-afternoon to late afternoon on hot summer days when the air appears to clear up suddenly. Winter inversions frequently break by midmorning.

Winds in the project area blow predominantly from the south-southwest, with relatively low velocities. Wind speeds in the project area average about 5 miles per hour (mph). Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north, or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly on shore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are CO and NO_X because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog. Smog is a general term that is naturally occurring fog that has become mixed with smoke or pollution. In this context it is better described as a form of air pollution

[39] Western Regional Climate Center. Recent Climate in the West. Website: http://www.wrcc.dri.edu, (accessed January 2024).

produced by the photochemical reaction of sunlight with pollutants that have been released into the atmosphere, especially by automotive emissions.

AIR QUALITY MONITORING RESULTS

Air quality monitoring stations are located throughout the nation and are maintained by the local air pollution control district and State air quality regulating agencies. The SCAQMD, together with the CARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring stations closest to the project site is located at 1630 Pampas Lane in Anaheim.

Pollutant monitoring results for years 2020 to 2022 at the Anaheim ambient air quality monitoring stations, shown in Table F, indicate that air quality in the area has generally been moderate. As indicated in the monitoring results, the federal PM_{10} standard was not exceeded during the 3-year period. The State PM_{10} standard was exceeded 5 times in 2020, once in 2021, and once in 2022. Similarly, the federal $PM_{2.5}$ standard had 12 exceedances in 2020, 10 exceedances in 2021, and no exceedances in 2022. The State 1-hour ozone standards were exceeded 6 times in 2021, no times in 2021, and once in 2022. The State 8-hour ozone standards were exceeded 16 times in 2020, no times in 2021, and once in 2022. The federal 8-hour standards were exceeded 15 times in 2021, no times in 2021, and once in 2022. The CO and NO_2 standards were not exceeded in this area during the 3-year period. SO_2 data were not available from 2020 to 022 at air quality monitoring stations in Orange County.

GREENHOUSE GAS EMISSIONS INVENTORY

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, and California GHG emission inventories.

Global Emissions

Worldwide emissions of GHGs in 2020 totaled 22.9 billion metric tons (MT) of CO_2e. Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change.[40]

United States Emissions

In 2021, the year for which the most recent data are available, the United States emitted about 5,586.0 million metric tons of CO_2e (MMT CO_2e) after accounting for sequestration from the land sector. Overall, emissions in 2021 increased by 6 percent since and were 17 percent lower than 2005 levels. The increase in total GHG emissions was driven by an increase in CO_2 emissions from fossil fuel combustion.

[40] United Nations Framework Convention on Climate Change (UNFCCC). 2021. GHG Data from UNFCCC. Website: unfccc.int/process-and-meetings/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc/ghg-data-from-unfccc (accessed January 2024).

Table F: Ambient Air Quality at the Nearby Monitoring Stations

Pollutant	Standard	2020	2021	2022
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		2.3	2.1	2.4
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.7	1.5	1.4
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.142	0.089	0.102
Number of days exceeded:	State: > 0.09 ppm	6	0	1
Maximum 8-hour concentration (ppm)		0.098	0.068	0.077
Number of days exceeded:	State: > 0.07 ppm	16	0	1
	Federal: > 0.07 ppm	15	0	1
Coarse Particulates (PM_{10})				
Maximum 24-hour concentration (µg/m^3)		74.8	63.6	67.0
Number of days exceeded:	State: > 50 µg/m^3	5	1	1
	Federal: > 150 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		30.8	23.4	20.9
Exceeded for the year:	State: > 20 µg/m^3	Yes	Yes	Yes
	Federal: > 50 µg/m^3	No	No	No
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration (µg/m^3)		64.8	54.4	33.1
Number of days exceeded:	Federal: > 35 µg/m^3	12	10	0
Annual arithmetic average concentration (µg/m^3)		12.4	11.6	9.9
Exceeded for the year:	State: > 12 µg/m^3	Yes	No	No
	Federal: > 15 µg/m^3	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.071	0.067	0.053
Number of days exceeded:	State: > 0.250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.013	0.012	0.012
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)				
Maximum 1-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	State: > 0.25 ppm	ND	ND	ND
Maximum 24-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	State: > 0.04 ppm	ND	ND	ND
	Federal: > 0.14 ppm	ND	ND	ND
Annual arithmetic average concentration (ppm)		ND	ND	ND
Exceeded for the year:	Federal: > 0.030 ppm	ND	ND	ND

Sources: CARB (2023) and USEPA (2023).
µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
ND = No data. There were insufficient (or no) data to determine the value.
ppm = parts per million
USEPA = United States Environmental Protection Agency

In 2021, CO_2 emissions from fossil fuel combustion increased by 7 percent relative to the previous year. This increase in fossil fuel consumption emissions was due primarily to economic activity rebounding after the height of the COVID-19 pandemic. Of the five major sectors—residential and commercial, agricultural, industry, transportation, and electricity generation—transportation accounted for the highest amount of GHG emissions in 2021 (approximately 28 percent), with electricity generation second at 25 percent and emissions from industry third at 23 percent.[41]

State of California Emissions

The State emitted approximately 381.3 MMT CO_2e emissions in 2021, 12.1 MMT CO_2e higher than 2020 levels and 49.7 MMT CO_2e below the 2020 GHG limit of 431 MMT CO_2e.[42] CARB estimates that transportation was the source of approximately 38 percent of the State's GHG emissions in 2021. The next largest sources included industrial sources at approximately 19 percent and electricity generation at 16 percent. The remaining sources of GHG emissions were commercial and residential activities at 10 percent, agriculture at 8 percent, high GWP at 6 percent, and waste at 2 percent.[43]

41 USEPA. 2023. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021. Website: https://www.epa.gov/system/files/documents/2023-04/US-GHG-Inventory-2023-Main-Text.pdf (accessed January 2024).

42 CARB. 2023. *California Greenhouse Gas Emissions for 2000 to 2021, Trends of Emissions and Other Indicators Report*. Website: https://ww2.arb.ca.gov/sites/default/files/2023-12/2000_2021_ghg_inventory_trends.pdf (accessed January 2024).

43 Ibid.

METHODOLOGY

The methodology used to estimate air quality, energy use, and GHG impacts is described below.

CONSTRUCTION EMISSIONS

Construction activities can generate a substantial amount of air pollution. Construction activities are considered temporary; however, short-term impacts can contribute to exceedances of air quality standards. Construction activities include demolition, site preparation, earthmoving, and general construction. The emissions generated from these common construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel and gasoline powered equipment, portable auxiliary equipment, and worker commute trips.

The California Emissions Estimator Model version 2022.1 (CalEEMod) computer program was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site. Information regarding a specific development project is not yet known; however, for the purposes of this analysis, future development of the additional 413 units and remaining commercial buildout capacity associated with the proposed project could occur anytime between October 2024 and October 2029. Therefore, to be conservative, this analysis assumes a project construction schedule based on a start date of October 2024 and a default construction duration in CalEEMod and assuming architectural coating would overlap with building construction activities. The proposed project would demolish the existing surface parking, but would not demolish any existing buildings. This analysis also assumes that the proposed project would comply with SCAQMD Rule 403 measures. In addition, this analysis assumes the use of Tier 2 construction equipment, which was also included in CalEEMod. All other construction details are not yet known; therefore, default assumptions (e.g., construction worker and truck trips and fleet activities) from CalEEMod were used.

OPERATIONAL EMISSIONS

The air quality analysis includes estimating emissions associated with long-term operation of the proposed project. Consistent with the SCAQMD guidance for estimating emissions associated with land use development projects, the CalEEMod computer program was used to calculate the long-term operational emissions associated with the project.

This analysis evaluates the buildout of 413 units and remaining commercial buildout capacity within the project site and compares the potential impacts to impacts associated with the existing commercial uses as determined based on two CalEEMod runs.

As identified in the Project Description, the existing uses that were modeled consists of the Enderle Center that is currently developed with 87,136 sq ft of commercial business uses, including 28,750 sq ft of restaurant use, 39,960 sq ft of retail and service use, and 18,426 sq ft of office use. The analysis was conducted using land use codes *High Turnover (Sit Down Restaurant), Strip Mall, General Office Building*, and *Parking Lot*. Trip generation rates used in CalEEMod for the existing uses were based on the trip generation rate of 7,058 ADT.

The analysis of the future buildout of the project site included the existing development, the buildout of 413 units, and the addition of the total remaining nonresidential use including a total of 67,837 sq ft of restaurant use, 94,288 sq ft of retail and service use, and 43,477 sq ft of office use. The analysis was conducted using land use codes *Apartments Mid Rise*, *High Turnover (Sit Down Restaurant), Strip Mall,* and *General Office Building* assuming a total trip generation of 18,528 ADT. This analysis also assumes that the proposed project would not include any woodburning hearths or wood stoves. Where project-specific data were not available, default assumptions (e.g., energy usage, water usage, and solid waste generation) from CalEEMod were used to estimate project emissions.

ENERGY USE

The analysis of electricity/natural gas usage is based on the CalEEMod modeling conducted by LSA, which quantifies energy use for project operations. Fuel consumption (diesel fuel and gasoline) from vehicle trips during operation was conservatively estimated for the year 2024 of the proposed project based on trip estimates from the CalEEMod model and fuel efficiencies from the CARB EMission FACtor Model (EMFAC2021) model. Estimates of fuel consumption (diesel fuel and gasoline) from construction trucks and construction worker vehicles were based on trip estimates from the CalEEMod model and fuel efficiencies from the CARB EMFAC2021 model.

The analysis focuses on the three sources of energy that are relevant to the proposed project: electricity, the equipment fuel necessary for project construction, and vehicle fuel necessary for project operations. For the purposes of this analysis, the amount of electricity, construction fuel, and fuel use from operations are quantified and compared to that consumed in Orange County. The electricity use of the proposed project is analyzed as a whole on an annual basis. Electricity use was estimated for the project using default energy intensities by land use type in CalEEMod.

GREENHOUSE GAS ANALYSIS

Recognizing that the field of global climate change analysis is rapidly evolving, the approaches advocated most recently indicate that for determining a project's contribution to GHG emissions, lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, construction activities, and any other significant source of emissions within the project area. The CalEEMod results were used to quantify GHG emissions generated by the project.

THRESHOLDS OF SIGNIFICANCE

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

- 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 is nonattainment under applicable federal or State ambient air quality standards;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) affecting a substantial number of people.

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse energy impact if the project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse greenhouse gas emission impact if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reduction the emissions of greenhouse gases.

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

CRITERIA POLLUTANT THRESHOLDS

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

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

Table G: Regional Thresholds for Construction and Operational Emissions

Emissions Source	Pollutant Emissions Threshold (lbs/day)					
	VOCs	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Construction	75	100	550	150	55	150
Operations	55	55	550	150	55	150

Source: SCAQMD. Air Quality Significance Thresholds. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf (accessed January 2024).

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

LOCALIZED IMPACTS ANALYSIS

The SCAQMD published its *Final Localized Significance Threshold Methodology* in July 2008, recommending that all air quality analyses include an assessment of air quality impacts to nearby sensitive receptors.[44] This guidance was used to analyze potential localized air quality impacts associated with construction of the proposed project. Localized significance thresholds (LST) are developed based on the size or total area of the emission source, the ambient air quality in the source receptor area, and the distance to the project. Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality.

LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For the proposed project, the appropriate SRA for the LST is the nearby Central Orange County (SRA 17). SCAQMD provides LST screening tables for 25, 50, 100, 200, and 500-meter source-receptor distances. As identified above, the closest sensitive receptors to the project site include residential uses, located approximately 70 feet south of the project's site boundary. In cases where receptors may be closer than 82 feet (25 meters), any distances within the 82-foot (25-meter) buffer zone can be used. As such, the minimum distance of 25 meters was used. Based on the anticipated construction equipment, it is assumed that the maximum daily disturbed acreage during construction would be 3.5 acres.[45] The 5-acre thresholds were used for project operation. Table H lists the emissions thresholds that apply during project construction and operation.

44 SCAQMD. 2008a. *Final Localized Significance Threshold Methodology*. July.

45 SCAQMD. n.d. *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf (accessed February 2024).

Table H: South Coast Air Quality Management District Localized Significance Thresholds

Emissions Source	Pollutant Emissions Threshold (lbs/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Construction	149.0	984.0	9.5	5.5
Operations	183.0	1,253.0	3.0	2.0

Source: South Coast Air Quality Management District (2008).
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size

LOCAL MICROSCALE CONCENTRATION STANDARDS

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

- California State 1-hour CO standard of 20 parts per million (ppm)
- California State 8-hour CO standard of 9 ppm

GREENHOUSE GAS THRESHOLD

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

- **Tier 1. Exemptions:** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2. Consistency with a locally adopted GHG Reduction Plan:** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

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

  For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. The 10,000 MT of CO_2e per year (MT CO_2e/yr) threshold for industrial uses would be recommended for use by all lead agencies. Under Option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e/yr), commercial projects (1,400 MT CO_2e/yr), and mixed-use projects (3,000 MT CO_2e/yr).

Under Option 2, a single numerical screening-level threshold of 3,000 MT CO_2e/yr would be used for all non-industrial projects.

- **Tier 4. Performance Standards:** If emissions exceed the numerical screening threshold, a more detailed review of the project's GHG emissions is warranted. SCAQMD has proposed an efficiency target for projects that exceed the bright-line threshold. The current recommended approach is per capita efficiency targets. SCAQMD is not recommending use of a percent emissions reduction target. Instead, SCAQMD proposes a 2020 efficiency target of 4.8 MT CO_2e/yr per service population (for project-level analyses and 6.6 MT CO_2e/yr per service population for plan-level projects (e.g., program-level projects such as general plans). The GHG efficiency metric divides annualized GHG emissions by the service population, which is the sum of residents and employees, per the following equation:

  Rate of Emission: GHG Emissions (MT CO_2e/yr) ÷ Service Population

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

  Relative to the 2035 target date, this target date was selected to be consistent with the GHG reduction target date of SB 375. Overall, GHG reductions by the SB 375 target date of 2035 would be approximately 40 percent. This 40 percent reduction was applied to the 2020 targets, resulting in an efficiency threshold for plans of 4.1 MT CO_2e/yr and an efficiency threshold at the project level of 3.0 MT CO_2e/yr.

For the purpose of this analysis, the proposed project will first be compared to the SCAQMD screening-level Tier 3 Numerical Screening Threshold of 3,000 MT CO_2e/yr for all land use type projects. If it is determined that the proposed project is estimated to exceed this numerical threshold, it will then be compared to the SCAQMD-recommended 2035 efficiency-based plan-level threshold of 4.1 MT CO_2e/yr per service population. In addition, the proposed project is also evaluated for compliance with the 2022 Scoping Plan and the 2024–2050 RTP/SCS.

IMPACTS ANALYSIS

This section identifies the air quality, energy, and GHG emissions impacts associated with implementation of the proposed project.

AIR QUALITY IMPACTS

Air pollutant emissions associated with the project would occur over the short term from construction activities and over the long term from operational activities associated with the proposed land uses.

Consistency with Applicable Air Quality Plans

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

Consistency with the 2022 AQMP would be achieved if the project is consistent with the goals, objectives, and assumptions in this plan to achieve the federal and State air quality standards. Per SCAQMD's *CEQA Air Quality Handbook*, there are two main indicators of a project's consistency with the AQMP:

- **Indicator 1:** Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or emission reductions in the AQMP.

- **Indicator 2:** Whether the project would exceed the assumptions in the AQMP. The AQMP strategy is, in part, based on projections from local general plans.

Indicator 1: As demonstrated below, the regional emissions generated by construction and operation of the proposed project would be less than the SCAQMD emissions thresholds. As such, the proposed project would not be consistent with Indicator 1.

Indicator 2: The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities.

The proposed project includes a GPA to amend the City's existing General Plan to create a Housing Overlay Zone. The proposed project would not directly result in physical development but upon

approval of the Housing Overlay Zone, the project site could accommodate 413 units. As such, this analysis evaluates whether the project would exceed the 2022 AQMP's assumptions.

With respect to determining the proposed project's consistency with AQMP growth assumptions, the projections in the AQMP for achieving air quality goals are based on assumptions in SCAG's 2024–2050 RTP/SCS regarding population, housing, and growth trends. According to SCAG's 2024–2050 RTP/SCS, in 2019, the City's population was 80,400 residents and the City had 27,000 households and 51,700 jobs. Households are forecast to increase by approximately 6,800 households by 2035 and 7,000 households by 2050 and employment are forecast to increase by approximately 14,600 jobs by 2035 and 19,600 jobs by 2050.[46]

As identified in the Project Description, the City's 2021–2029 Housing Element identifies several adequate sites that are able to accommodate the development of up to additional housing units for the City to meet its estimated housing growth needs identified in the SCAG's RHNA allocation. Of the Housing Element inventory sites, Enderle Center (the project site) was identified as necessary for rezoning under Housing Element Program 1.1f to allow for high density residential/mixed use development. The proposed project would accommodate up to 413 housing units to help the City meet its RHNA allocation.

The development of 413 housing units would result in approximately 1,189 additional residents based on the estimated 2.88 persons per household[47] in Tustin. Future development implemented in accordance with the proposed Housing Overlay Zone would accommodate planned regional housing growth included in the SCAG RHNA and would be required to adhere to the General Plan. Therefore, since the purpose of the proposed project is to accommodate planned regional housing growth included in the SCAG RHNA, the proposed project would not exceed the growth assumptions in the SCAG's 2024–2050 RTP/SCS or the AQMP.

In addition, the proposed project would not include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities; therefore, it is unlikely that the proposed project would interfere with SCAQMD's goals for improving air quality in the region. The proposed project would not conflict with the 2022 AQMP and, as such, would not jeopardize attainment of the CAAQS and NAAQS in the area under the jurisdiction of the SCAQMD. The proposed project is therefore considered consistent with Indicator 2.

Summary: Based on the discussion above, the proposed project would not conflict or obstruct implementation of applicable air quality plans under Indicator 1 because the proposed project would result in pollutant emissions below the SCAQMD's thresholds. As such, based on the

46 Southern California Association of Governments (SCAG). 2024. *Connect SoCal 2024 Demographics & Growth Forecast.* Website: https://scag.ca.gov/sites/main/files/file-attachments/23-2987-tr-demographics-growth-forecast-final-040424.pdf?1712261839 (accessed May 2024).

47 State of California, Department of Finance. 2023. *E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change*. May.

consistency analysis presented above, the proposed project would be consistent with the regional AQMP.

Criteria Pollutant Analysis

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

In developing thresholds of significance for air pollutants, the SCAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary. The following analysis assesses the potential project-level construction- and operation-related air quality impacts.

Construction Emissions

It is important to note that the proposed project would not, in and of itself entitle, propose, or otherwise require the construction of new development. The proposed project would create a Housing Overlay Zone that would accommodate 413 units.

Construction activities associated with the construction of additional housing units and remaining commercial buildout capacity that could occur with implementation of the project would be through the horizon year 2029, which would cause short-term emissions of criteria air pollutants. The primary source of emissions is the operation of construction equipment. Before development can take place, a project will be required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

Construction activities would include demolition, site preparation, grading, building construction, architectural coating, and paving activities. Construction-related effects on air quality are typically greatest during the grading phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at construction sites. Unless properly controlled, vehicles leaving construction sites would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, whereas fine particles would be dispersed over greater distances from the construction site.

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

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_X, VOCs and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for development envisioned under the proposed project using CalEEMod. As described in the Methodology section above, information regarding a specific development project is not yet known; however, for the purposes of this analysis, future development of the additional 413 units and remaining commercial buildout capacity associated with the proposed project could occur anytime between October 2024 and October 2029. Therefore, to be conservative, this analysis assumes a project construction schedule based on a start date of October 2024 and a default construction duration in CalEEMod. Table I lists the tentative schedule, and Table J lists the potential construction equipment to be used during project construction under each phase of construction. Construction-related emissions are presented in Table K. CalEEMod output sheets are included in Appendix A.

Table I: Tentative Project Construction Schedule

Phase Number	Phase Name	Phase Start Date	Phase End Date	Number of Days/Week	Number of Days
1	Demolition	10/7/2024	11/4/2024	5	20
2	Site Preparation	11/5/2024	11/19/2024	5	10
3	Grading	11/20/2024	1/1/2025	5	30
4	Building Construction	1/2/2025	2/26/2026	5	300
5	Paving	2/27/2026	3/27/2026	5	20
6	Architectural Coating	12/8/2025	4/25/2026	5	100

Source: Compiled by LSA assuming construction would start October 2024 with a default construction duration in CalEEMod and assuming architectural coating would overlap with building construction activities (March 2024).
CalEEMod = California Emissions Estimator Model

Table J: Diesel Construction Equipment Utilized by Construction Phase

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	1	8	33	0.73
	Excavators	3	8	36	0.38
	Rubber Tired Dozers	2	8	367	0.4
Site Preparation	Rubber Tired Dozers	3	8	367	0.4
	Tractors/Loaders/Backhoes	4	8	84	0.37
Grading	Excavators	2	8	36	0.38
	Graders	1	8	148	0.41
	Rubber Tired Dozers	1	8	367	0.4
	Scrapers	2	8	423	0.48
	Tractors/Loaders/Backhoes	2	8	84	0.37
Building Construction	Cranes	1	7	367	0.29
	Forklifts	3	8	82	0.2
	Generator Sets	1	8	14	0.74
	Tractors/Loaders/Backhoes	3	7	84	0.37
	Welders	1	8	46	0.45
Paving	Pavers	2	8	81	0.42
	Paving Equipment	2	8	89	0.36
	Rollers	2	8	36	0.38
Architectural Coating	Air Compressors	1	6	37	0.48

Source: Compiled by LSA using CalEEMod defaults (March 2024).
CalEEMod = California Emissions Estimator Model

Table K: Project Construction Emissions

Project Construction	Maximum Pollutant Emissions (lbs/day)					
	VOCs	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
2024	1.4	48.9	36.4	0.1	11.2	5.0
2025	38.0	48.9	36.3	0.1	6.6	2.7
2026	37.9	23.5	34.8	<0.1	6.6	2.1
Maximum Daily Emissions	**37.9**	**48.9**	**36.4**	**0.1**	**11.2**	**5.0**
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Exceeds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (March 2024).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

As shown in Table I, construction emissions associated with future development, as envisioned under the proposed project would not exceed the SCAQMD thresholds for VOCs, NO_X, CO, sulfur oxides (SO_X), $PM_{2.5,}$ or PM_{10} emissions. The proposed project would be required to comply with SCAQMD Rule 403: Fugitive Dust, which would further reduce construction-related emissions. Therefore, future construction of development projects consistent with the proposed project would not result in emissions that would result in a cumulatively considerable net increase of any criteria

pollutant for which the project is in nonattainment under an applicable federal or State ambient air quality standard.

Operational Air Quality Impacts

Operational activities associated with the additional housing units and remaining commercial buildout capacity consistent with the buildout envisioned as part of the proposed project would result in long-term air pollutant emissions associated with mobile sources (e.g., vehicle trips), energy sources (e.g., natural gas), and area sources (e.g., architectural coatings and the use of landscape maintenance equipment). Before development can take place, a project will be required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles. The existing uses generate approximately 7,058 ADT and the proposed project would generate approximately 18,528 ADT.

Energy source emissions result from activities in buildings for which electricity and natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of natural gas) and the emission factor of the fuel source. Major sources of energy demand for the proposed project could include building mechanical systems, such as heating and air conditioning. The residential units would be constructed in compliance with the version of the Title 24 energy standards and the CALGreen Code in effect at the time building permit applications are submitted.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings, consumer products, and the use of landscape maintenance equipment.

Long-term operation emissions associated with development consistent with the proposed project were calculated using CalEEMod. Model results are shown in Table L below. CalEEMod output sheets are included in Appendix A.

Table L: Project Operational Emissions

Emission Type	Pollutant Emissions (lbs/day)					
	VOCs	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Existing Uses						
Existing Uses Mobile Sources	23.7	19.0	192.5	0.5	42.0	10.9
Existing Uses Area Sources	2.8	<0.1	3.8	<0.1	<0.1	<0.1
Existing Uses Energy Sources	0.1	1.1	0.9	<0.1	0.1	0.1
Total Existing Uses Emissions	**26.5**	**20.0**	**197.2**	**0.5**	**42.1**	**11.0**
Full Buildout of the Project Site						
Project Buildout Mobile Sources	62.4	50.4	511.7	1.2	112.1	29.0
Project Buildout Area Sources	18.0	6.2	34.9	<0.1	0.5	0.5
Project Buildout Energy Sources	0.2	3.7	2.6	<0.1	0.3	0.3
Total Project Buildout Emissions	**80.6**	**60.2**	**549.2**	**1.3**	**112.9**	**29.8**
Net New Emissions (Project Buildout – Existing Uses)	**54.1**	**40.2**	**352.0**	**0.8**	**70.8**	**18.8**
SCAQMD Thresholds	**55.0**	**55.0**	**550.0**	**150.0**	**150.0**	**55.0**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (March 2024).
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOCs = volatile organic compounds

The results shown in Table L indicate that the net new emissions associated with the future development of the proposed project would not exceed the significance criteria for VOCs, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$ emissions; thus, the proposed project would not have a significant effect on regional air quality. Therefore, operation of the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under an applicable federal or State ambient air quality standard.

Long-Term Microscale (CO Hot Spot) Analysis

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

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the Anaheim monitoring station, the closest

station to the City of Tustin, showed a highest recorded 1-hour concentration of 2.4 ppm (the State standard is 20 ppm) and a highest 8-hour concentration of 1.7 ppm (the State standard is 9 ppm) during the past 3 years (Table G). The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis.

The proposed project would generate 11,470 net new ADT in the immediate vicinity of the opportunity sites and would result in 757 net new AM peak-hour trips and in 1,041 net new PM peak-hour trips. The proposed project would not result in any operational deficiencies to the surrounding roadway system. The evaluation of the study area intersections shows that the addition of traffic associated with new development allowed under the proposed project's Housing Overlay Zone is not expected to create significant level of service changes under buildout conditions. Therefore, project traffic would not create any significant adverse impacts to nearby intersections.

Therefore, given the extremely low level of CO concentrations in the City, and lack of traffic impacts at any intersections, project-related vehicles are not expected to contribute significantly or result in the CO concentrations exceeding the State or federal CO standards.

Health Risk on Nearby Sensitive Receptors

The SCAQMD recommends the evaluation of localized air quality impacts to sensitive receptors such as residential land uses in the immediate vicinity of the opportunity sites as a result of construction and operational activities. The thresholds are based on standards established by the SCAQMD in its Localized Significance Thresholds (LST) Methodology[48] and are measured against construction and operational emissions that occur on a specific project site. These emissions are primarily generated from heavy-duty construction equipment and demolition, grading, and trenching activities. Construction and operational activities associated with the construction of additional housing units and remaining commercial buildout capacity that could occur with implementation of the proposed project would have the potential to cause or contribute to significant localized air quality impacts to nearby residential land uses.

Construction and operation emissions associated with development consistent with the proposed project were compared to the LST screening tables in SRA 17, based on a 25-meter source-receptor distance.

[48] SCAQMD. 2021. Localized Significance Thresholds. Website: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds (accessed January 2024).

By design, the localized impacts analysis only includes on-site emission sources; however, the CalEEMod outputs do not separate on-site and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions detailed in Table N assume all area and energy source emissions would occur on site, and 5 percent of the project-related new mobile sources, which is an estimate of the amount of project-related on-site vehicle travel, would occur on site. Since the majority of vehicle travel would occur off-site and considering the total overall VMT and trip length included in CalEEMod, assuming that the 5 percent of the project's VMT would occur on-site is conservative.

Table M: Project Localized Construction Emissions (lbs/day)

Source	NO_x	CO	PM_{10}	$PM_{2.5}$
On-Site Project Construction Emissions	48.8	35.3	8.8	4.9
Localized Significance Threshold	149.0	984.0	9.5	5.5
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (March 2024).
CO= carbon monoxide
lbs/day = pounds per day
NO_x= nitrogen oxides
$PM_{2.5}$= particulate matter less than 2.5 microns in size
PM_{10}= particulate matter less than 10 microns in size

Table N: Project Localized Operational Emissions (lbs/day)

Source	NO_x	CO	PM_{10}	$PM_{2.5}$
On-Site Project Buildout Net New Emissions	10.4	48.8	4.2	1.6
Localized Significance Threshold	183.0	1,253.0	3.0	2.0
Exceeds Threshold?	**No**	**No**	**Yes**	**No**

Source: Compiled by LSA (March 2024).
CO= carbon monoxide
lbs/day = pounds per day
NO_x= nitrogen oxides
$PM_{2.5}$= particulate matter less than 2.5 microns in size
PM_{10}= particulate matter less than 10 microns in size

The results of the LST analysis, summarized in Table M, indicates that the project would not result in an exceedance of the SCAQMD LSTs during project construction. However, net new emissions associated with the future development of the proposed project would exceed the SCAQMD LSTs for PM_{10} during operational activities. As shown in Table L above, the majority of the PM_{10} emissions are associated with mobile sources from project-related vehicle trips. Emissions of motor vehicles are controlled by State and federal standards, and the project has no control over these standards. As such, implementation of Mitigation Measure AIR-1 would require a project-specific assessment of potential localized impacts and if the project exceeds the applicable LST thresholds, a dispersion modeling analysis would be necessary to calculate health risk from project implementation.

Mitigation Measure AIR-1 Prior to discretionary approval by the City of Tustin (City) for residential development projects subject to California Environmental Quality Act (CEQA) review, project applicants shall prepare and submit a technical assessment evaluating potential project-related air quality impacts, including a localized impacts analysis, to the City for review and approval. The analysis shall be

prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology. If project-related emissions exceed applicable SCAQMD thresholds of significance, the City shall require that applicants for new development projects incorporate mitigation measures to reduce emissions. The identified measures shall be included as part of the conditions of approval. Additionally, if project-related localized emissions exceed the SCAQMD's thresholds, a dispersion modeling analysis shall be conducted to calculate potential health risk from project implementation.

While Mitigation Measure AIR-1 would serve to reduce localized emissions associated with buildout of the project, localized emission impacts would remain significant and unavoidable.

It should be noted that the amount of emissions from a project does not necessarily correspond to the concentrations of air pollutants. A dispersion modeling analysis would be necessary to calculate health risk from project implementation. However, since it is not possible to translate the amount of an unknown future specific project's emissions to a particular concentration, it is not possible to calculate the risk factor for a particular health effect at the time of this analysis.

Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Particulate matter can also lead to a variety of health effects in people. These include premature death of people with heart or lung disease, heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Regional emissions of criteria pollutants contribute to these known health effects. The SCAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals and that they are not exposed to elevated concentrations of criteria pollutants in the Basin. To achieve the health-based standards established by the USEPA, the SCAQMD prepares an AQMP that details regional programs to attain the ambient air quality standards.

Although the analysis for the proposed project identifies that construction emissions associated with develop envisioned as part of the proposed project would not exceed the SCAQMD's thresholds for VOCs, NO_X, CO, SO_X, $PM_{2.5}$, or PM_{10} emissions, it should be noted that not exceeding the SCAQMD's numeric regional mass daily thresholds does not necessarily correspond to a determination for health risk impacts to sensitive receptors. This is because the mass daily thresholds are in pounds per day emitted into the air, whereas health effects are determined based on the concentration of emissions in the air at a particular receptor (e.g., ppm by volume of air, or $\mu g/m^3$ of air). State and federal ambient air quality standards were developed to protect the most susceptible population groups from adverse health effects and were established in terms of parts per million or micrograms per cubic meter for the applicable emissions.

However, the SCAQMD acknowledges that they have only been able to correlate potential health outcomes for very large emissions sources; specifically, 6,620 pounds per day (lbs/day) of NO_X, and 89,180 lbs/day of VOCs were expected to result in approximately 20 premature deaths per year and

89,947 school absences due to ozone.[49] As identified in Table K above, construction of the proposed project would generate a maximum of 48.9 lbs/day of NO_X and 37.9 lbs/day of VOCs and as shown in Table L, operation of the proposed project would generate a maximum of 60.2 lbs/day of NO_X and 80.9 lbs/day of VOCs. Therefore, it is not expected that any future development associated with the proposed project would generate 6,620 lbs/day of NO_X or 89,180 lbs/day of VOC emissions.

Therefore, emissions associated with the proposed project is not sufficiently high enough to correlate health effects on a Basin-wide level.

Current scientific, technological, and modeling limitations prevent the relation of expected adverse air quality impacts to likely health consequences. For this reason, this discussion explains why it is not feasible to provide such an analysis. However, as required by Mitigation Measure AIR-1, once a specific project is proposed, it would still be required to conduct a site-specific localized impact analysis that evaluates potential project health impacts at a project level to immediately adjacent land uses.

In addition, the project would be required to comply with SCAQMD standard conditions, including Rule 403 (Fugitive Dust) to control fugitive dust and Rule 1113 (Architectural Coatings) to control VOC emissions from paint. Furthermore, any necessary mitigation would be imposed at the project level once such future projects are proposed.

Asbestos

Naturally occurring asbestos (NOA) refers to the asbestos mineral as a natural component of soils or rocks, as opposed to asbestos in commercial products or other processing operations. Ultramafic rocks may contain asbestos or asbestos-like materials. Naturally occurring asbestos can be released from rocks or soils by routine human activities, such as construction, mining, agriculture, or natural weathering processes. If NOA is disturbed and fibers are released into the air it may become a health risk from inhalation. According to the California Geological Survey, no such rock has been identified in the project vicinity[50]. When demolition is proposed during construction, the demolition of existing buildings may expose asbestos used in building materials. The proposed project would demolish the existing surface parking; however existing buildings on the project site would not be demolished as part of the project. Therefore, the potential risk for naturally occurring asbestos during project construction is small and would not be significant.

Odors

During construction of future development envisioned under the proposed project, some odors may be present due to diesel exhaust. However, these odors would be temporary and limited to the construction period. The proposed project would not include any activities or operations that would generate objectionable odors and once operational, development envisioned under the proposed

---

49 Supreme Court of California. 2015. *Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno, Plaintiffs and Appellants, v. County of Fresno, Defendant and Despondent, and Friant Ranch, L.P., Real Part in Interest and Despondent.* April.

50 California Geological Survey, n.d. Areas with Potential for Naturally Occurring Asbestos. Website: https://www.arcgis.com/apps/webappviewer/index.html?id=da4b648958844134adc25ff002dbea1c (accessed February 2024).

project would not be a source of odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) affecting a substantial number of people.

ENERGY IMPACTS

The following describes the potential impacts regarding energy resources that could result from implementation of the proposed project.

Energy Consumption

The proposed project would increase the demand for energy through day-to-day operations and fuel consumption associated with project construction. This section discusses energy use resulting from implementation of the proposed project and evaluates whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency.

Construction Energy Use

Construction activities associated with the construction of additional housing units and remaining commercial buildout capacity that could occur with implementation of the project would be through the horizon year 2029, which would cause fuel consumption associated with construction activities. The primary source of emissions is the operation of construction equipment. Before development can take place, a project will be required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

Construction activities would include grading, site preparation, building construction, architectural coating, and paving activities. Construction activities require energy associated with the manufacture and transportation of building materials, grading activities, and building construction. Construction activities also typically require electricity to power construction-related equipment and do not involve the consumption of natural gas.

Transportation energy represents the largest energy use during construction and would be from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction worker vehicles that would use petroleum fuels (e.g., diesel fuel and/or gasoline). Therefore, the analysis of energy use during construction focuses on fuel consumption. Construction trucks and vendor trucks hauling materials to and from a site would be anticipated to use diesel fuel, whereas construction workers traveling to and from a site would be anticipated to use gasoline-powered vehicles. Fuel consumption from transportation uses depends on the type and number of trips, VMT, the fuel efficiency of the vehicles, and the travel mode.

Estimates of fuel consumption (diesel fuel and gasoline) from construction equipment, construction trucks, and construction worker vehicles were based on default construction equipment assumptions and trip estimates from CalEEMod and fuel efficiencies from EMFAC2021. Fuel consumption estimates are presented in Table O. CalEEMod output sheets are included in Appendix A, and detailed energy calculations are included in Appendix B.

Table O: Energy Consumption Estimates during Construction

Energy Type	Total Energy Consumption	Percentage of Increase Countywide
Diesel Fuel (total gallons)	117,690	0.07
Gasoline (total gallons)	148,345	0.01

Source: Compiled by LSA (March 2024).

As indicated in Table O, development envisioned under the proposed project would consume approximately 117,690 gallons of diesel fuel and approximately 148,345 gallons of gasoline during construction. Based on fuel consumption obtained from EMFAC2021, approximately 1.2 billion gallons of gasoline and approximately 157.1 million gallons of diesel will be consumed from vehicle trips in Orange County in 2024. Therefore, construction of future development as envisioned under the proposed project would increase the annual construction generated fuel use in Orange County approximately by approximately 0.07 percent for diesel fuel usage and by approximately 0.01 percent for gasoline fuel usage. As such, project construction would have a negligible effect on local and regional energy supplies. Furthermore, impacts related to energy use during construction would be temporary and relatively small in comparison to Orange County's overall use of the State's available energy resources. No unusual project characteristics would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or the State. In addition, construction activities are not anticipated to result in an inefficient use of energy as gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the project. The project would not cause or result in the need for additional energy facilities or an additional or expanded delivery system. For these reasons, fuel consumption during construction would not be inefficient, wasteful, or unnecessary.

Operational Energy Use

Operational activities associated with the additional housing units and remaining commercial buildout capacity consistent with the buildout envisioned as part of the proposed project would result in energy demand associated with natural gas use, electricity consumption, and fuel used for vehicle trips. Energy consumption was estimated for the proposed project using default energy intensities by land use type in CalEEMod. In addition, the proposed project would also result in energy usage associated with gasoline and diesel fuel consumed by project-related vehicle trips. Trip generation rates for the proposed project were based on the project's trip generation estimates. The existing uses generate approximately 7,058 ADT and the proposed project would generate approximately 18,528 ADT. The amount of operational fuel use was estimated using CARB's EMFAC2021 model, which provided projections for typical daily fuel usage in Orange County.

Electricity, natural gas, and fuel usage estimates associated with the proposed project are shown in Table P.

Table P: Energy Consumption Estimates during Operation

Energy Type	Annual Energy Consumption
Existing Uses	
Electricity Consumption (kWh/year)	1,984,211
Natural Gas Consumption (therms/year)	40,171
Gasoline (gallons/year)	640,878
Diesel Fuel (gallons/year)	54,200
Full Buildout of the Project Site	
Electricity Consumption (kWh/year)	5,564,016
Natural Gas Consumption (therms/year)	140,666
Gasoline (gallons/year)	1,755,365
Diesel Fuel (gallons/year)	148,455
Net New Energy Usage (Project Buildout – Existing Uses)	
Electricity Consumption (kWh/year)	**3,579,805**
Natural Gas Consumption (therms/year)	**100,495**
Gasoline (gallons/year)	**1,114,487**
Diesel Fuel (gallons/year)	**94,255**

Source: Compiled by LSA (March 2024).
kWh = kilowatt-hours

As shown in Table P, the estimated potential increase in electricity demand associated with development consistent with the proposed project is 3,579,805 kWh per year. Total electricity consumption in Orange County in 2022 was 20,244 GWh (20,243,721,856 kWh). Therefore, operation of the proposed project would increase the annual electricity consumption in Orange County by approximately 0.02 percent.

Additionally, as shown in Table P, the estimated potential increase in natural gas demand associated with development consistent with the proposed project is 100,495 therms per year. Total natural gas consumption in Orange County in 2022 was 573 million therms (572,454,744 therms). Therefore, operation of the proposed project would increase the annual natural gas consumption in Orange County by approximately 0.02 percent.

Electrical and natural gas demand associated with future operations would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. Furthermore, the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. All future development would be required to adhere to all federal, State, and local requirements for energy efficiency, including the latest Title 24 standards. Title 24 building energy efficiency standards establish minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting, which would reduce energy usage.

Construction of the 413 additional housing units and remaining commercial buildout capacity would also result in energy usage associated with gasoline and diesel fuel consumed by project-related vehicle trips. As shown in Table P, the increase in fuel use associated with the vehicle trips generated by the proposed project is estimated at approximately 1,114,487 gallons of gasoline and 94,255 gallons of diesel fuel per year. Based on fuel consumption obtained from EMFAC2021, approximately 1.2 billion gallons of gasoline and approximately 157.1 million gallons of diesel will be

consumed from vehicle trips in Orange County in 2024. Therefore, vehicle trips associated with the proposed project would increase the annual fuel use in Orange County by approximately 0.09 percent for gasoline fuel usage and approximately 0.06 percent for diesel fuel usage. Fuel consumption associated with vehicle trips generated by project operations would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region.

Although future development, as envisioned under the proposed project would result in an increase in demand for electricity, this increase would not require SCE to expand or construct infrastructure that could cause substantial environmental impacts because each of the opportunity sites are already served by utilities or directly adjacent to existing urban development. Similarly, natural gas infrastructure is not anticipated due to cumulative development. Transportation energy use would also increase; however, this transportation energy use would not represent a major amount of energy use when compared to the amount of existing development and to the total number of vehicle trips and VMT throughout Orange County and the region. As such, the buildout associated with the proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

Conflict with Renewable Energy or Energy Efficiency Plans

In 2002, the Legislature passed SB 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels for the Integrated Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for ZEVs and their infrastructure needs, and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

The CEC's *2023 Integrated Energy Policy Report* provide the results of the CEC's assessments of a variety of energy issues facing California. As indicated above, energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the overall use in the County. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the overall use in Orange County, and the State's available energy resources. Therefore, energy impacts at the regional level would be negligible. Because California's energy conservation planning actions are conducted at a regional level, and because the proposed project's total impact on regional energy supplies would be minor, the proposed project would not conflict with or obstruct California's energy conservation plans as described in the CEC's Integrated Energy Policy Report. Additionally, as demonstrated above, the proposed project would not result in the inefficient, wasteful, and unnecessary consumption of energy.

GREENHOUSE GAS IMPACTS

This section describes the potential GHG impacts associated with implementation the proposed project.

Generation of Greenhouse Gas Emissions

This section describes the proposed project's construction- and operational-related GHG emissions and contribution to global climate change. The SCAQMD has not addressed emission thresholds for construction in its *CEQA Air Quality Handbook*; however, the SCAQMD requires quantification and disclosure. Thus, an evaluation of the project's impacts related to the release of GHG emissions for both construction and operational phases of the project is described below.

Short-Term Greenhouse Gas Emissions

Construction activities associated with the construction of additional housing units and remaining commercial buildout capacity would cause short-term GHG emissions. Construction activities with the proposed project would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As indicated above, the SCAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are required to quantify and disclose GHG emissions that would occur during construction. The SCAQMD then requires the construction GHG emissions to be amortized over the life of the project, defined by the SCAQMD as 30 years[51], added to the operational emissions, and compared to the applicable interim GHG significance threshold tier.

Using CalEEMod, it is estimated that development envisioned under the proposed project would generate approximately 1,522.9 MT CO_2e during construction of the project. When annualized over the 30-year life of the project, annual emissions would be 50.8 MT CO_2e.

Long-Term Greenhouse Gas Emissions

Operational activities associated with the additional housing units and remaining commercial buildout capacity consistent with the buildout envisioned as part of the proposed project would result in long-term GHG emissions associated with mobile sources (e.g., vehicle trips), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions would include project-generated vehicle trips to and from the project. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site. Energy source emissions would be generated at off-site utility providers because of increased electricity demand generated by the project. Waste source emissions generated by the proposed project include energy generated by land filling and other methods of disposal related to transporting and managing project-generated waste. In addition, water source emissions associated with the proposed project

[51] The SCAQMD has identified the average operational lifespan of buildings to be 30 years. Website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf (accessed January 2024).

are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

Following guidance from the SCAQMD, GHG emissions were estimated using CalEEMod. Table Q shows the calculated GHG emissions for development consistent with the proposed project.

Table Q: Greenhouse Gas Emissions (MT/yr)

Emissions Source	Operational Emissions (MT/yr)			
	CO_2	CH_4	N_2O	CO_2e
Existing Uses				
Existing Uses Mobile Sources	6,169.3	0.3	0.3	6,271.5
Existing Uses Area Sources	1.8	<0.1	<0.1	1.8
Existing Uses Energy Sources	691.7	<0.1	<0.1	694.2
Existing Uses Water Sources	29.3	0.5	<0.1	45.0
Existing Uses Waste Sources	35.8	3.6	0.0	125.3
Total Existing Uses Emissions	**6,927.9**	**4.4**	**0.3**	**7,137.8**
Full Buildout of the Project Site				
Project Buildout Mobile Sources	16,874.0	0.9	0.7	17,151.0
Project Buildout Area Sources	100.0	<0.1	<0.1	100.2
Project Buildout Energy Sources	2,088.8	0.1	<0.1	2,096.0
Project Buildout Water Sources	99.6	1.7	<0.1	152.9
Project Buildout Waste Sources	111.7	11.2	<0.1	390.9
Project Buildout Emissions	**19,274.1**	**13.9**	**0.7**	**19,891.0**
Amortized Construction Emissions				50.8
Total Project Buildout Annual Emissions				**19,941.8**
Net New Emissions (Project Buildout – Existing Uses)				**12,804.0**
SCAQMD Threshold				3,000
Exceed?				Yes
Per Service Population Emissions				**8.2**
SCAQMD Efficiency Target Threshold				4.1
Exceed?				**Yes**

Source: Compiled by LSA (March 2024).
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide
SCAQMD = South Coast Air Quality Management District

As discussed above, according to SCAQMD, a project would have less than significant GHG emissions if it would result in operational-related GHG emissions of less than 3,000 MT CO_2e/yr. Based on the analysis results, the proposed project would result in a net increase of 12,804.0 MT CO_2e/yr, which would exceed the SCAQMD threshold of 3,000 MT CO_2e/yr. Therefore, consistent with the SCAQMD's interim guidance, the following discussion compares the proposed project to the efficiency-based threshold.

The development of 413 housing units would result in approximately 1,189 additional residents based on the estimated 2.88 persons per household[52] in Tustin. In addition, the proposed project

[52] State of California, Department of Finance. 2023. *E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change*. May.

would include an additional 39,087 sq ft of restaurant use, 54,328 sq ft of retail and service use, and 25,051 sq ft of office use. Future development, as envisioned under the proposed project would result in 365 new employees. The total service population (residents plus employees) would be 1,554 persons. The proposed project would result in per service population emissions of 8.2 metric tons of CO_2 per year per service population (MT CO_2e/yr/SP), which would exceed the SCAQMD's plan-level screening threshold of 4.1 MT CO_2e/yr/SP.

The development of 413 housing units would result in approximately 1,189 additional residents based on the estimated 2.88 persons per household[53] in Tustin. In addition, the proposed project would include an additional 39,087 sq ft of restaurant use, 54,328 sq ft of retail and service use, and 25,051 sq ft of office use. Future development, as envisioned under the proposed project would result in 365 new employees. The total service population (residents plus employees) would be 1,554 persons. The proposed project would result in per service population emissions of 8.2 metric tons of CO_2 per year per service population (MT CO_2e/yr/SP), which would exceed the SCAQMD's plan-level screening threshold of 4.1 MT CO_2e/yr/SP.

However, as identified above, before development can occur, once a specific development project is proposed, it would be required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits. As demonstrated above, the likely scale and extent of build out associated with future projects would likely exceed the SCAQMD thresholds. As such, implementation of Mitigation Measure GHG-1 would require a project-specific assessment of potential GHG impacts and implementation of feasible mitigation measures to reduce GHG emissions.

Mitigation Measure GHG-1 Prior to discretionary approval by the City of Tustin (City) for residential development projects subject to California Environmental Quality Act (CEQA) review, project applicants shall prepare and submit a technical assessment evaluating potential project-related greenhouse gas (GHG) impacts to the City for review and approval. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology. If project-related GHG emissions exceed applicable SCAQMD thresholds of significance and/or Statewide GHG reduction targets, the City shall require that applicants for new development projects incorporate mitigation measures to reduce GHG emissions. Mitigation measures could include, but are not limited, to energy efficiency measures, water conservation and efficiency measures, solid waste measures, and transportation and motor vehicles measures. The identified measures shall be included as part of the conditions of approval.

[53] State of California, Department of Finance. 2023. *E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change*. May.

While Mitigation Measure GHG-1 would serve to reduce GHG emissions associated with buildout of the project, GHG emission impacts would remain significant and unavoidable because compliance with future efficiency targets cannot be assured.

Consistency with Greenhouse Gas Emissions Reduction Plans

An evaluation of the proposed project's consistency with the 2022 Scoping Plan and the 2024–2050 RTP/SCS is provided below.

2022 Scoping Plan

The following discussion evaluates the proposed project according to the goals of the 2022 Scoping Plan, EO B-30-15, AB 1279, SB 32, and AB 197.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan, to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to provide easier public access to air emissions data that are collected by CARB was posted in December 2016. AB 1279 establishes State policy to achieve net zero GHG emissions no later than 2045 and for Statewide anthropogenic GHG emissions to be reduced to at least 85 percent below 1990 levels by 2045.

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

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

Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As identified above, buildout of the proposed project would be required to comply with the latest Title 24 and CALGreen Code standards regarding water efficiency and energy conservation requirements. Therefore, the proposed project would comply with applicable energy measures.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, buildout associated with the proposed project would be required to comply with the latest Title 24 and CALGreen Code standards, which include a variety of different measures, including reduction of wastewater and water use. In addition, the project would be required to comply with the California Model Water Efficient Landscape Ordinance. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

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

2024–2050 Regional Transportation Plan/Sustainable Communities Strategy

SCAG's 2024–2050 RTP/SCS identifies that land use strategies that focus on new housing and job growth in areas served by high quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The core vision in the 2024–2050 RTP/SCS is to better manage the existing transportation system through design management strategies, integrate land use decisions and technological advancements, create complete streets that are safe to all roadway users, preserve the transportation system, and expand transit and foster development in transit oriented communities. The 2024–2050 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, as well as forecast development that is generally consistent with regional-level general plan data. The forecasted development pattern, when integrated with the financially constrained transportation investments identified in the 2024–2050 RTP/SCS, would reach the GHG emissions reduction target set by CARB, including the regional target of reducing GHG emissions from autos and light-duty trucks by 19 percent by 2035 (compared to 2005 levels). The 2024–2050 RTP/SCS does not require that local General Plans, Specific Plans, or zoning be consistent with the 2024–2050 RTP/SCS but provides incentives for consistency for governments and developers.

The objectives of the 2024–2050 RTP/SCS are to create a region with: transit as a backbone of the transportation system; more Complete Streets where people and safety are prioritized; policies that encourage emerging technologies and mobility innovations that support rather than hamper regional goals; more housing, jobs, and mobility options closer together in Priority Development Areas to preserve natural lands and open spaces; more housing to address the existing housing need as defined by the RHNA; safe and fluid movement of goods, with a commitment to the broad deployment of zero- and near-zero emission technologies.

With respect to determining the proposed project's consistency with AQMP growth assumptions, the projections in the AQMP for achieving air quality goals are based on assumptions in SCAG's 2024–2050 RTP/SCS regarding population, housing, and growth trends. According to SCAG's 2024–2050 RTP/SCS, in 2019, the City's population was 80,400 residents and the City had 27,000 households and 51,700 jobs. Households are forecast to increase by approximately 6,800 households by 2035 and 7,000 households by 2050 and employment are forecast to increase by approximately 14,600 jobs by 2035 and 19,600 jobs by 2050.[54]

As identified in the Project Description, the City's 2021–2029 Housing Element identifies several adequate sites that are able to accommodate the development of up to additional housing units for the City to meet its estimated housing growth needs identified in the SCAG's RHNA allocation. Of the Housing Element inventory sites, Enderle Center (the project site) was identified as necessary for rezoning under Housing Element Program 1.1f to allow for high density residential/mixed use development. The proposed project would accommodate up to 413 housing units to help the City meet its RHNA allocation.

The development of 413 housing units would result in approximately 1,189 additional residents based on the estimated 2.88 persons per household[55] in Tustin. Future development implemented in accordance with the proposed Housing Overlay Zone would accommodate planned regional housing growth included in the SCAG RHNA and would be required to adhere to the General Plan. Therefore, since the purpose of the proposed project is to accommodate planned regional housing growth included in the SCAG RHNA, the proposed project would not exceed the growth assumptions in the SCAG's 2024–2050 RTP/SCS or the AQMP. Based on the nature of the proposed project, it is anticipated that implementation of the proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the 2024–2050 RTP/SCS.

Implementing SCAG's 2024–2050 RTP/SCS will greatly reduce the regional GHG emissions from transportation, helping to achieve statewide emissions reduction targets. The proposed project would not interfere with SCAG's ability to achieve the region's GHG reduction target of 19 percent below 2005 per capita emissions levels by 2035. As identified above, the proposed project would help the City meet its RHNA allocation, which is consistent with SCAG's objectives to provide more housing in Priority Development Areas to preserve natural lands and open spaces and to address the

54 SCAG. 2024. *Connect SoCal 2024 Demographics & Growth Forecast.* Website: https://scag.ca.gov/sites/main/files/file-attachments/23-2987-tr-demographics-growth-forecast-final-040424.pdf?1712261839 (accessed May 2024).

55 State of California, Department of Finance, 2023. *E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change*. May.

existing housing need as defined by the RHNA. As such, the proposed project would be consistent with SCAG's 2024–2050 RTP/SCS.

Although the proposed project would be consistent with the identified measures and goals from the 2022 Scoping Plan and 2024–2050 RTP/SCS, the proposed project would result in a significant and unavoidable impact for GHG emissions based on SCAQMD thresholds. As such, the proposed project would not comply with existing State regulations adopted to achieve the overall GHG emissions reduction goals identified in the 2022 Scoping Plan, EO B-30-15, and AB 197 and would not be consistent with applicable State plans and programs designed to reduce GHG emissions. Therefore, the proposed project would conflict with applicable plans, policies, and regulations adopted for the purpose of reducing the emissions of GHGs.

CUMULATIVE IMPACTS

This section presents information regarding potential cumulative impacts associated with the proposed project. As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area. Below is a list of cumulative projects; however, because of the lack of available emissions data for the cumulative projects, cumulative emissions were not evaluated quantitatively. Table R lists the cumulative projects and provides a brief description and the distances from the project site.

Cumulative Air Quality Impacts

The cumulative impact area for air quality related to the proposed project is the South Coast Air Basin. Each project in the Basin is required to comply with SCAQMD rules and regulations and is subject to independent review. Future development that may take place with implementation of the project would contribute criteria pollutants to the area during project construction and operation.

The Basin is currently designated as a nonattainment area for the federal O_3 standard and $PM_{2.5}$ standard and as a nonattainment area for the State O_3, PM_{10}, and $PM_{2.5}$ standard. Thus, the Basin has not met the federal and State standards for these air pollutants. As identified above, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Table R: Cumulative Projects List

Project	Project Address	Project Description	Distance from Project Site
City of Santa Ana Projects			
Baja Fish Tacos	2107 17th Street, Santa Ana, CA	Construction of a 5,005-sq ft multi-tenant commercial building.	2,275 feet
Tustin Service Station	2230 Tustin Avenue, Santa Ana, CA	Construction of a service station with six stations and 12 fueling pumps and a 2,150-sq ft convenience store.	3,330 feet
McDonalds Drive-Through	2101 Santa Clara Avenue, Santa Ana, CA	Demolition of two residential units and construction of a 3,975-sq ft restaurant with drive-thru.	3,620 feet
New ARCO AM/PM Service Station	2301 Seventeenth Street, Santa Ana, CA	Demolition an existing multi-tenant commercial building in order to construct a new single- story, 4,000-sq ft service station with a convenience store to include fast food/retail space and eight gasoline dispensers. Scope of work to include underground storage tanks, 33 parking stalls, new landscaping, and a trash enclosure.	1,180 feet
Park Court Office Building	1801 Parkcourt Place, Santa Ana, CA	Construction of a 3,974 sq ft office building within an existing office park.	4,230 feet
Russell Fischer Center	301 Tustin Avenue, Santa Ana, CA	Demolition of two commercial buildings (approximately 5,100 sq ft) and construction of a service station with four stations and eight dispensing pumps, a 2,775-sq ft convenience store, and a 7,368-sq ft multi-tenant commercial building.	3,910 feet
City of Tustin Projects			
Medical Office Building	17631 17th Street, Tustin, CA	Demolition of existing 5,240 SF restaurant building to construct a 12,320 SF, two-story medical office.	810 feet
Jessup by Intracorp	17802 & 17842 Irvine Boulevard, Tustin, CA	Redevelopment of commercial center to construct 40 residential units (36 attached duplexes and 4 single family units).	3,940 feet

Source: EPD Solutions, Inc. (February 2024).

Air pollution is inherently a cumulative type of impact measured across an air basin. The Air Quality Impacts section above includes an analysis of the proposed project's contribution to cumulative air impacts. As demonstrated above, construction emissions associated with the proposed project would not exceed the SCAQMD thresholds for VOCs, NO_X, CO, SO_X, $PM_{2.5,}$ or PM_{10} emissions. Additionally, operational impacts from criteria pollutant emissions would also not exceed SCAQMD thresholds. However, as discussed above, net new emissions associated with the future development of the proposed project would exceed the SCAQMD LSTs for PM_{10} during operational activities. As such, implementation of Mitigation Measure AIR-1 would require a project-specific assessment of potential localized impacts and if the project exceeds the applicable LST thresholds, a dispersion modeling analysis would be necessary to calculate health risk from project implementation. As such, future cumulative growth within the City could result in potential health risks. Therefore, air quality emissions associated with future development that may occur under the proposed project would result in cumulatively considerable impact.

Cumulative Energy Impacts

The geographic area for cumulative analysis of electricity is that of the SCE service area, while the geographic area for cumulative analysis of natural gas service is that of the SoCalGas service area. Construction of the additional 413 housing units and remaining commercial buildout capacity associated with the proposed project would result in an increased services demand in electricity and natural gas. Although the proposed project would result in an increase in demand for electricity, this increase would not require SCE to expand or construct infrastructure that could cause substantial environmental impacts. As discussed previously, total electricity consumption in the SCE service area in 2022 was 85,870 GWh. By 2030, consumption is anticipated to increase by 12,000 GWh for the low-demand scenario and by 22,000 GWh for the high-demand scenario.[56] While this forecast represents a large increase in electricity consumption, the proposed project's share of cumulative consumption would be negligible. The proposed project, in combination with cumulative development, is well within SCE's system-wide net annual increase in electricity supplies over the 2018 to 2030 period, and there are sufficient planned electricity supplies in the region for estimated net increases in energy demands.

Similarly, additional natural gas infrastructure is not anticipated due to cumulative development. Total natural gas consumption in the SoCalGas service area in 2022 was 5,026 million therms. Between 2018 and 2030, total natural gas consumption in the SoCalGas service area is forecast to remain steady for the low- and mid-demand scenarios and to increase by approximately 650 million therms in the high-demand scenario due to intense energy efficiency efforts.[57] The proposed project's share of cumulative consumption of natural gas in the SoCalGas service area would be negligible. It is anticipated that SoCalGas would be able to meet the natural gas demand of cumulative development without additional facilities. In addition, both SCE and SoCalGas demand forecasts include the growth contemplated by the proposed project and the other cumulative development within their respective service areas. Increased energy efficiency to comply with building energy efficiency standards would reduce energy consumption on a per-square-foot basis. Furthermore, utility companies are required to increase their renewable energy sources to meet the Renewable Portfolio Standards mandate of 60 percent renewable supplies by 2030. SCE and SoCalGas plan to continue to provide reliable service to their customers and upgrade their distribution systems as necessary to meet future demand.

Transportation energy use would also increase; however, this transportation energy use would not represent a major amount of energy use compared to the amount of existing development and to the total number of vehicle trips and VMT throughout Orange County and the region. The proposed project and cumulative development are required to comply with various federal and State government legislation to improve energy efficiency in buildings, equipment, and appliances, and reduce VMT.

56 CEC. 2018. *California Energy Demand, 2018–2030 Revised Forecast*. Publication Number: CEC-200-2018-002-CMF. February. Website: https://efiling.energy.ca.gov/getdocument.aspx?tn=223244 (accessed February 2024).

57 Ibid.

As such, the proposed project would not result in an inefficient, wasteful, and unnecessary consumption of energy. Therefore, the proposed project's contribution to impacts related to the inefficient, wasteful, and unnecessary consumption of energy would not be cumulatively considerable.

Cumulative Greenhouse Gas Impacts

GHG impacts are by their nature cumulative impacts. Localized impacts of climate change are the result of the cumulative impact of global emissions. The combined benefits of reductions achieved by all levels of government help to slow or reverse the growth in GHG emissions. In the absence of comprehensive international agreements on appropriate levels of reductions achieved by each country, another measure of cumulative contribution is required. This serves to define the State's share of the reductions regardless of the activities or lack of activities of other areas of the U.S. or the world. Therefore, a cumulative threshold based on consistency with State targets and actions to reduce GHGs is an appropriate standard of comparison for significance determinations.

As previously stated, GHG emissions associated with the buildout under the proposed project would exceed the SCAQMD thresholds of 3,000 MT CO_2e/yr and 4.1 MT CO_2e/yr/SP. Since GHG is a global issue, it is unlikely that the proposed project would generate enough GHG emissions to influence GHG emissions on its own; however, because project-related CO_2e emissions would exceed the SCAQMD's thresholds, the proposed project would have a significant contribution to cumulatively considerable GHG emission impacts.

CONCLUSION

Based on the analysis presented above, construction and operation of the proposed project would not result in the generation of criteria air pollutants that would exceed SCAQMD thresholds of significance. Compliance with SCAQMD Rule 403 would further reduce construction dust impacts. Even with the implementation of Mitigation Measure AIR-1, proposed project has the potential to produce significant emissions that would affect nearby sensitive receptors. The project would not result in other emissions (such as those leading to odors) affecting a substantial number of people. In addition, the proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation and would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Operation of the proposed project would generate GHG emissions that would have a significant effect on the environment and would therefore not be consistent with the 2024–2050 RTP/SCS or the goals of the 2022 Scoping Plan.

APPENDIX A

CALEEMOD OUTPUT SHEETS

Enderle Center - Proposed Project (Construction) Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Enderle Center - Proposed Project (Construction)
Construction Start Date	10/7/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	17350 17th St, Tustin, CA 92780, USA
County	Orange
City	Tustin
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5961
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	413	Dwelling Unit	7.00	396,480	0.00	—	1,231	—

High Turnover (Sit Down Restaurant)	39.1	1000sqft	2.00	39,087	0.00	—	—	—
Strip Mall	54.3	1000sqft	2.00	54,328	0.00	—	—	—
General Office Building	25.1	1000sqft	0.80	25,051	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	36.1	22.2	34.3	0.04	0.70	4.98	5.68	0.66	1.19	1.85	—	8,927	8,927	0.26	0.46	9,094
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	38.0	48.9	36.4	0.10	1.36	10.3	11.2	1.23	3.99	5.01	—	13,428	13,428	0.92	1.60	13,928
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.35	16.1	23.5	0.03	0.51	3.55	4.06	0.47	0.85	1.32	—	6,306	6,306	0.19	0.33	6,417
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.52	2.94	4.28	< 0.005	0.09	0.65	0.74	0.09	0.16	0.24	—	1,044	1,044	0.03	0.05	1,062

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.88	22.2	34.3	0.04	0.70	4.98	5.68	0.66	1.19	1.85	—	8,927	8,927	0.26	0.46	9,094
2026	36.1	1.29	4.54	< 0.005	0.07	0.89	0.95	0.06	0.21	0.27	—	1,017	1,017	0.02	0.03	1,030
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.40	48.9	36.4	0.10	1.36	10.3	11.2	1.23	3.99	5.01	—	13,428	13,428	0.92	1.60	13,928
2025	38.0	48.9	36.3	0.06	1.36	5.86	6.63	1.23	1.49	2.72	—	9,700	9,700	0.29	0.49	9,856
2026	37.9	23.5	34.8	0.04	0.77	5.86	6.63	0.72	1.40	2.11	—	9,569	9,569	0.27	0.49	9,724
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.20	7.18	5.13	0.01	0.19	1.10	1.29	0.17	0.34	0.51	—	1,451	1,451	0.08	0.09	1,482
2025	3.02	16.1	23.5	0.03	0.51	3.55	4.06	0.47	0.85	1.32	—	6,306	6,306	0.19	0.33	6,417
2026	8.35	3.50	5.06	0.01	0.12	0.76	0.88	0.12	0.18	0.30	—	1,280	1,280	0.04	0.06	1,300
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.04	1.31	0.94	< 0.005	0.04	0.20	0.24	0.03	0.06	0.09	—	240	240	0.01	0.02	245
2025	0.55	2.94	4.28	< 0.005	0.09	0.65	0.74	0.09	0.16	0.24	—	1,044	1,044	0.03	0.05	1,062
2026	1.52	0.64	0.92	< 0.005	0.02	0.14	0.16	0.02	0.03	0.05	—	212	212	0.01	0.01	215

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	24.9	18.2	0.03	0.79	—	0.79	0.71	—	0.71	—	3,425	3,425	0.14	0.03	3,437
Demolition	—	—	—	—	—	7.64	7.64	—	1.16	1.16	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	1.37	1.00	< 0.005	0.04	—	0.04	0.04	—	0.04	—	188	188	0.01	< 0.005	188
Demolition	—	—	—	—	—	0.42	0.42	—	0.06	0.06	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.25	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	31.2
Demolition	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.78	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	193	193	< 0.005	0.01	196
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Hauling	0.19	12.6	5.35	0.06	0.12	2.50	2.62	0.12	0.70	0.82	—	9,809	9,809	0.78	1.56	10,295
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.7	10.7	< 0.005	< 0.005	10.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.70	0.29	< 0.005	0.01	0.14	0.14	0.01	0.04	0.04	—	537	537	0.04	0.09	564
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.78	1.78	< 0.005	< 0.005	1.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.13	0.05	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	89.0	89.0	0.01	0.01	93.4

3.3. Site Preparation (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	39.9	28.3	0.05	1.12	—	1.12	1.02	—	1.02	—	5,296	5,296	0.21	0.04	5,314
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	1.09	0.78	< 0.005	0.03	—	0.03	0.03	—	0.03	—	145	145	0.01	< 0.005	146
Dust From Material Movement	—	—	—	—	—	0.21	0.21	—	0.11	0.11	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.20	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	24.1
Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.08	0.91	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	226	226	< 0.005	0.01	228
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.27	6.27	< 0.005	< 0.005	6.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.04	1.04	< 0.005	< 0.005	1.05

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.33	48.8	35.3	0.06	1.36	—	1.36	1.23	—	1.23	—	6,598	6,598	0.27	0.05	6,621
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	4.01	2.91	0.01	0.11	—	0.11	0.10	—	0.10	—	542	542	0.02	< 0.005	544
Dust From Material Movement	—	—	—	—	—	0.30	0.30	—	0.12	0.12	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.73	0.53	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	90.1

Dust From Material Movement	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.09	1.04	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	258	258	< 0.005	0.01	261
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.5	21.5	< 0.005	< 0.005	21.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.56	3.56	< 0.005	< 0.005	3.61
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.7. Grading (2025) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.33	48.8	35.3	0.06	1.36	—	1.36	1.23	—	1.23	—	6,599	6,599	0.27	0.05	6,622
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.10	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.9	12.9	< 0.005	< 0.005	13.0
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.14	2.14	< 0.005	< 0.005	2.15
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.08	0.97	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	< 0.005	0.01	256
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	0.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	13.4	10.2	0.02	0.49	—	0.49	0.46	—	0.46	—	1,708	1,708	0.07	0.01	1,714
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	2.45	1.86	< 0.005	0.09	—	0.09	0.08	—	0.08	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.20	1.18	19.0	0.00	0.00	4.43	4.43	0.00	1.04	1.04	—	4,503	4,503	0.05	0.16	4,569
Vendor	0.06	2.11	1.05	0.01	0.01	0.54	0.56	0.01	0.15	0.16	—	2,027	2,027	0.11	0.28	2,119
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.20	1.34	16.4	0.00	0.00	4.43	4.43	0.00	1.04	1.04	—	4,285	4,285	0.06	0.16	4,334
Vendor	0.05	2.19	1.07	0.01	0.01	0.54	0.56	0.01	0.15	0.16	—	2,028	2,028	0.11	0.28	2,114
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.84	0.95	12.2	0.00	0.00	3.12	3.12	0.00	0.73	0.73	—	3,094	3,094	0.04	0.11	3,134
Vendor	0.04	1.57	0.76	0.01	0.01	0.38	0.39	0.01	0.11	0.12	—	1,444	1,444	0.08	0.20	1,507

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.17	2.23	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	512	512	0.01	0.02	519
Vendor	0.01	0.29	0.14	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	239	239	0.01	0.03	250
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	2.11	1.60	< 0.005	0.08	—	0.08	0.07	—	0.07	—	267	267	0.01	< 0.005	268
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.38	0.29	< 0.005	0.01	—	0.01	0.01	—	0.01	—	44.3	44.3	< 0.005	< 0.005	44.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.14	1.19	15.4	0.00	0.00	4.43	4.43	0.00	1.04	1.04	—	4,203	4,203	0.06	0.16	4,253
Vendor	0.04	2.11	1.04	0.01	0.01	0.54	0.56	0.01	0.15	0.16	—	1,995	1,995	0.10	0.28	2,081
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.13	1.79	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	475	475	0.01	0.02	482
Vendor	< 0.005	0.24	0.11	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	222	222	0.01	0.03	232
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.33	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	78.7	78.7	< 0.005	< 0.005	79.7
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.8	36.8	< 0.005	0.01	38.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.13. Paving (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.50	13.3	10.6	0.01	0.58	—	0.58	0.54	—	0.54	—	1,511	1,511	0.06	0.01	1,516
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.73	0.58	< 0.005	0.03	—	0.03	0.03	—	0.03	—	82.8	82.8	< 0.005	< 0.005	83.1
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	13.7	13.7	< 0.005	< 0.005	13.8
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.68	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	188
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	10.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.71	1.71	< 0.005	< 0.005	1.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.15. Architectural Coating (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architectural Coatings	35.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.27	6.27	< 0.005	< 0.005	6.29
Architectural Coatings	1.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.04	1.04	< 0.005	< 0.005	1.04
Architectural Coatings	0.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.27	3.28	0.00	0.00	0.89	0.89	0.00	0.21	0.21	—	857	857	0.01	0.03	867
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.16	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.8	40.8	< 0.005	< 0.005	41.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.75	6.75	< 0.005	< 0.005	6.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

3.17. Architectural Coating (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architectural Coatings	35.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architectural Coatings	35.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.24	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.0	30.0	< 0.005	< 0.005	30.1
Architectural Coatings	8.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.97	4.97	< 0.005	< 0.005	4.99

Architectu Coatings	1.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.21	3.58	0.00	0.00	0.89	0.89	0.00	0.21	0.21	—	883	883	0.01	0.03	896
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.24	3.08	0.00	0.00	0.89	0.89	0.00	0.21	0.21	—	841	841	0.01	0.03	851
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.72	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	192	192	< 0.005	0.01	194
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	31.8	31.8	< 0.005	< 0.005	32.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	10/7/2024	11/4/2024	5.00	20.0	—
Site Preparation	Site Preparation	11/5/2024	11/19/2024	5.00	10.0	—
Grading	Grading	11/20/2024	1/1/2025	5.00	30.0	—
Building Construction	Building Construction	1/2/2025	2/26/2026	5.00	300	—
Paving	Paving	2/27/2026	3/27/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	12/8/2025	4/25/2026	5.00	100	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 2	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Tier 2	3.00	8.00	36.0	0.38
Demolition	Rubber Tired Dozers	Diesel	Tier 2	2.00	8.00	367	0.40
Site Preparation	Rubber Tired Dozers	Diesel	Tier 2	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 2	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 2	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Tier 2	1.00	8.00	148	0.41

Grading	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Tier 2	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 2	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 2	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 2	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 2	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 2	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 2	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 2	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 2	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 2	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 2	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	138	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT

Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	339	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	63.6	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	67.8	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%

Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	802,872	267,624	177,699	59,233	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	11,054	—
Site Preparation	—	—	15.0	0.00	—
Grading	—	—	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%
High Turnover (Sit Down Restaurant)	0.00	0%

Strip Mall	0.00	0%
General Office Building	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	532	0.03	< 0.005
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Land Use	The project site is approximately 11.80 acres.
Operations: Vehicle Data	The proposed project would generate approximately 18,528 average daily trips.
Operations: Hearths	Assuming no wood burning hearths.
Construction: Construction Phases	Project construction could occur anytime between October 2024 and October 2029. Therefore, to be conservative, this analysis assumes a project construction schedule based on a start date of October 2024 and a default construction duration in CalEEMod and assuming architectural coating would overlap with building construction activities.
Construction: Off-Road Equipment	Assuming the use of Tier 2 construction equipment.

Enderle Center - Proposed Project (Operational) Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Enderle Center - Proposed Project (Operational)
Operational Year	2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	17350 17th St, Tustin, CA 92780, USA
County	Orange
City	Tustin
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5961
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	413	Dwelling Unit	7.00	396,480	0.00	—	1,231	—

High Turnover (Sit Down Restaurant)	67.8	1000sqft	2.00	67,837	0.00	—	—	—
Strip Mall	94.3	1000sqft	2.00	94,288	0.00	—	—	—
General Office Building	43.5	1000sqft	0.80	43,477	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Transportation	T-5	Implement Commute Trip Reduction Program (Voluntary)
Transportation	T-14*	Provide Electric Vehicle Charging Infrastructure
Transportation	T-31-A*	Locate Project in Area with High Destination Accessibility
Transportation	T-34*	Provide Bike Parking
Transportation	T-43*	Provide Real-Time Transit Information
Energy	E-1	Buildings Exceed 2019 Title 24 Building Envelope Energy Efficiency Standards
Energy	E-2	Require Energy Efficient Appliances
Energy	E-12-B	Install Electric Space Heater in Place of Natural Gas Heaters in Residences
Energy	E-13	Install Electric Ranges in Place of Gas Ranges
Energy	E-15	Require All-Electric Development
Water	W-4	Require Low-Flow Water Fixtures
Water	W-5	Design Water-Efficient Landscapes
Area Sources	LL-1	Replace Gas Powered Landscape Equipment with Zero-Emission Landscape Equipment
Area Sources	AS-2	Use Low-VOC Paints

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	80.6	56.1	549	1.29	1.56	111	113	1.50	28.3	29.8	772	145,839	146,611	84.5	5.21	150,898
Mit.	75.6	53.8	507	1.26	1.42	109	111	1.37	27.8	29.1	760	140,879	141,639	82.9	5.09	145,841
% Reduced	6%	4%	8%	2%	9%	2%	2%	9%	2%	2%	2%	3%	3%	2%	2%	3%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	76.3	59.9	483	1.24	1.53	111	113	1.48	28.3	29.7	772	140,886	141,658	84.7	5.45	145,524
Mit.	74.9	57.8	474	1.21	1.42	109	111	1.37	27.8	29.1	760	136,083	136,843	83.2	5.32	140,631
% Reduced	2%	3%	2%	2%	7%	2%	2%	7%	2%	2%	2%	3%	3%	2%	2%	3%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	76.0	49.0	453	1.02	1.00	91.6	92.6	0.95	23.3	24.2	772	115,618	116,390	84.0	4.82	120,221
Mit.	72.2	46.8	423	1.00	0.87	90.1	91.0	0.82	22.9	23.7	760	111,122	111,882	82.5	4.70	115,637
% Reduced	5%	4%	7%	2%	13%	2%	2%	13%	2%	2%	2%	4%	4%	2%	2%	4%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13.9	8.94	82.7	0.19	0.18	16.7	16.9	0.17	4.25	4.42	128	19,142	19,270	13.9	0.80	19,904
Mit.	13.2	8.55	77.3	0.18	0.16	16.4	16.6	0.15	4.18	4.33	126	18,397	18,523	13.7	0.78	19,145
% Reduced	5%	4%	7%	2%	13%	2%	2%	13%	2%	2%	2%	4%	4%	2%	2%	4%

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	62.4	46.3	512	1.23	0.77	111	112	0.72	28.3	29.0	—	125,227	125,227	5.96	4.89	127,345
Area	18.0	6.13	34.8	0.04	0.50	—	0.50	0.49	—	0.49	0.00	7,491	7,491	0.14	0.01	7,499
Energy	0.21	3.70	2.63	0.02	0.29	—	0.29	0.29	—	0.29	—	12,617	12,617	0.90	0.07	12,660
Water	—	—	—	—	—	—	—	—	—	—	97.3	504	601	10.0	0.24	923
Waste	—	—	—	—	—	—	—	—	—	—	675	0.00	675	67.4	0.00	2,361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
Total	80.6	56.1	549	1.29	1.56	111	113	1.50	28.3	29.8	772	145,839	146,611	84.5	5.21	150,898
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	61.7	50.4	478	1.18	0.77	111	112	0.72	28.3	29.0	—	120,373	120,373	6.24	5.13	122,071
Area	14.4	5.82	2.48	0.04	0.47	—	0.47	0.47	—	0.47	0.00	7,392	7,392	0.14	0.01	7,399
Energy	0.21	3.70	2.63	0.02	0.29	—	0.29	0.29	—	0.29	—	12,617	12,617	0.90	0.07	12,660
Water	—	—	—	—	—	—	—	—	—	—	97.3	504	601	10.0	0.24	923
Waste	—	—	—	—	—	—	—	—	—	—	675	0.00	675	67.4	0.00	2,361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
Total	76.3	59.9	483	1.24	1.53	111	113	1.48	28.3	29.7	772	140,886	141,658	84.7	5.45	145,524
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	59.2	44.7	428	1.00	0.66	91.6	92.3	0.61	23.3	23.9	—	101,923	101,923	5.66	4.51	103,592
Area	16.6	0.61	22.3	< 0.005	0.05	—	0.05	0.05	—	0.05	0.00	574	574	0.01	< 0.005	575
Energy	0.21	3.70	2.63	0.02	0.29	—	0.29	0.29	—	0.29	—	12,617	12,617	0.90	0.07	12,660
Water	—	—	—	—	—	—	—	—	—	—	97.3	504	601	10.0	0.24	923

Waste	—	—	—	—	—	—	—	—	—	—	675	0.00	675	67.4	0.00	2,361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
Total	76.0	49.0	453	1.02	1.00	91.6	92.6	0.95	23.3	24.2	772	115,618	116,390	84.0	4.82	120,221
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.8	8.16	78.2	0.18	0.12	16.7	16.8	0.11	4.25	4.36	—	16,874	16,874	0.94	0.75	17,151
Area	3.03	0.11	4.07	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	95.1	95.1	< 0.005	< 0.005	95.2
Energy	0.04	0.68	0.48	< 0.005	0.05	—	0.05	0.05	—	0.05	—	2,089	2,089	0.15	0.01	2,096
Water	—	—	—	—	—	—	—	—	—	—	16.1	83.4	99.6	1.66	0.04	153
Waste	—	—	—	—	—	—	—	—	—	—	112	0.00	112	11.2	0.00	391
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.1
Total	13.9	8.94	82.7	0.19	0.18	16.7	16.9	0.17	4.25	4.42	128	19,142	19,270	13.9	0.80	19,904

2.6. Operations Emissions by Sector, Mitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	61.3	45.5	503	1.21	0.76	109	110	0.71	27.8	28.5	—	123,093	123,093	5.85	4.80	125,174
Area	14.2	5.82	2.48	0.04	0.47	—	0.47	0.47	—	0.47	0.00	7,392	7,392	0.14	0.01	7,399
Energy	0.14	2.49	2.09	0.01	0.19	—	0.19	0.19	—	0.19	—	9,952	9,952	0.70	0.06	9,987
Water	—	—	—	—	—	—	—	—	—	—	85.3	442	527	8.78	0.21	809
Waste	—	—	—	—	—	—	—	—	—	—	675	0.00	675	67.4	0.00	2,361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
Total	75.6	53.8	507	1.26	1.42	109	111	1.37	27.8	29.1	760	140,879	141,639	82.9	5.09	145,841
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	60.6	49.5	470	1.16	0.76	109	110	0.71	27.8	28.5	—	118,322	118,322	6.13	5.04	119,990

Area	14.2	5.82	2.48	0.04	0.47	—	0.47	0.47	—	0.47	0.00	7,392	7,392	0.14	0.01	7,399
Energy	0.14	2.49	2.09	0.01	0.19	—	0.19	0.19	—	0.19	—	9,928	9,928	0.69	0.06	9,962
Water	—	—	—	—	—	—	—	—	—	—	85.3	442	527	8.78	0.21	809
Waste	—	—	—	—	—	—	—	—	—	—	675	0.00	675	67.4	0.00	2,361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
Total	74.9	57.8	474	1.21	1.42	109	111	1.37	27.8	29.1	760	136,083	136,843	83.2	5.32	140,631
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	58.2	43.9	421	0.98	0.65	90.1	90.8	0.60	22.9	23.5	—	100,229	100,229	5.56	4.43	101,871
Area	13.8	0.40	0.17	< 0.005	0.03	—	0.03	0.03	—	0.03	0.00	506	506	0.01	< 0.005	507
Energy	0.14	2.49	2.09	0.01	0.19	—	0.19	0.19	—	0.19	—	9,945	9,945	0.70	0.06	9,979
Water	—	—	—	—	—	—	—	—	—	—	85.3	442	527	8.78	0.21	809
Waste	—	—	—	—	—	—	—	—	—	—	675	0.00	675	67.4	0.00	2,361
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
Total	72.2	46.8	423	1.00	0.87	90.1	91.0	0.82	22.9	23.7	760	111,122	111,882	82.5	4.70	115,637
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.6	8.02	76.9	0.18	0.12	16.4	16.6	0.11	4.18	4.29	—	16,594	16,594	0.92	0.73	16,866
Area	2.53	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	83.8	83.8	< 0.005	< 0.005	83.9
Energy	0.03	0.45	0.38	< 0.005	0.03	—	0.03	0.03	—	0.03	—	1,646	1,646	0.12	0.01	1,652
Water	—	—	—	—	—	—	—	—	—	—	14.1	73.1	87.3	1.45	0.03	134
Waste	—	—	—	—	—	—	—	—	—	—	112	0.00	112	11.2	0.00	391
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.1
Total	13.2	8.55	77.3	0.18	0.16	16.4	16.6	0.15	4.18	4.33	126	18,397	18,523	13.7	0.78	19,145

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	6.49	5.15	57.5	0.14	0.09	12.8	12.9	0.08	3.26	3.34	—	14,408	14,408	0.65	0.55	14,645
High Turnover (Sit Down Restaurant)	24.4	18.0	198	0.47	0.30	43.0	43.3	0.28	10.9	11.2	—	48,394	48,394	2.32	1.90	49,215
Strip Mall	29.9	22.0	243	0.58	0.37	52.7	53.0	0.34	13.4	13.7	—	59,289	59,289	2.84	2.32	60,295
General Office Building	1.58	1.16	12.9	0.03	0.02	2.79	2.81	0.02	0.71	0.73	—	3,136	3,136	0.15	0.12	3,190
Total	62.4	46.3	512	1.23	0.77	111	112	0.72	28.3	29.0	—	125,227	125,227	5.96	4.89	127,345
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	6.42	5.61	53.3	0.14	0.09	12.8	12.9	0.08	3.26	3.34	—	13,847	13,847	0.68	0.57	14,036
High Turnover (Sit Down Restaurant)	24.1	19.5	185	0.46	0.30	43.0	43.3	0.28	10.9	11.2	—	46,519	46,519	2.43	1.99	47,178
Strip Mall	29.6	23.9	227	0.56	0.37	52.7	53.0	0.34	13.4	13.7	—	56,992	56,992	2.98	2.44	57,799
General Office Building	1.56	1.27	12.0	0.03	0.02	2.79	2.81	0.02	0.71	0.73	—	3,015	3,015	0.16	0.13	3,058
Total	61.7	50.4	478	1.18	0.77	111	112	0.72	28.3	29.0	—	120,373	120,373	6.24	5.13	122,071
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartment Mid Rise	1.16	1.04	9.97	0.03	0.02	2.32	2.33	0.01	0.59	0.60	—	2,318	2,318	0.11	0.10	2,353
High Turnover (Sit Down Restaurant)	4.00	2.47	23.6	0.05	0.03	4.40	4.44	0.03	1.12	1.15	—	4,514	4,514	0.31	0.23	4,597
Strip Mall	5.36	4.41	42.4	0.10	0.07	9.50	9.57	0.06	2.41	2.47	—	9,538	9,538	0.49	0.40	9,689
General Office Building	0.28	0.23	2.24	0.01	< 0.005	0.50	0.51	< 0.005	0.13	0.13	—	505	505	0.03	0.02	513
Total	10.8	8.16	78.2	0.18	0.12	16.7	16.8	0.11	4.25	4.36	—	16,874	16,874	0.94	0.75	17,151

4.1.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	6.49	5.15	57.5	0.14	0.09	12.8	12.9	0.08	3.26	3.34	—	14,408	14,408	0.65	0.55	14,645
High Turnover (Sit Down Restaurant)	23.9	17.6	195	0.47	0.29	42.2	42.5	0.27	10.7	11.0	—	47,462	47,462	2.27	1.86	48,267
Strip Mall	29.3	21.6	238	0.57	0.36	51.7	52.0	0.33	13.1	13.4	—	58,147	58,147	2.79	2.28	59,133
General Office Building	1.55	1.14	12.6	0.03	0.02	2.73	2.75	0.02	0.69	0.71	—	3,076	3,076	0.15	0.12	3,128
Total	61.3	45.5	503	1.21	0.76	109	110	0.71	27.8	28.5	—	123,093	123,093	5.85	4.80	125,174
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments	6.42	5.61	53.3	0.14	0.09	12.8	12.9	0.08	3.26	3.34	—	13,847	13,847	0.68	0.57	14,036
High Turnover (Sit Down Restaurant)	23.7	19.2	182	0.45	0.29	42.2	42.5	0.27	10.7	11.0	—	45,624	45,624	2.38	1.95	46,270
Strip Mall	29.0	23.5	223	0.55	0.36	51.7	52.0	0.34	13.1	13.4	—	55,895	55,895	2.92	2.39	56,686
General Office Building	1.53	1.24	11.8	0.03	0.02	2.73	2.75	0.02	0.69	0.71	—	2,957	2,957	0.15	0.13	2,999
Total	60.6	49.5	470	1.16	0.76	109	110	0.71	27.8	28.5	—	118,322	118,322	6.13	5.04	119,990
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	1.16	1.04	9.97	0.03	0.02	2.32	2.33	0.01	0.59	0.60	—	2,318	2,318	0.11	0.10	2,353
High Turnover (Sit Down Restaurant)	3.92	2.43	23.1	0.05	0.03	4.32	4.35	0.03	1.10	1.13	—	4,427	4,427	0.30	0.22	4,508
Strip Mall	5.26	4.33	41.6	0.10	0.07	9.32	9.38	0.06	2.37	2.43	—	9,355	9,355	0.48	0.40	9,502
General Office Building	0.28	0.23	2.20	0.01	< 0.005	0.49	0.50	< 0.005	0.13	0.13	—	495	495	0.03	0.02	503
Total	10.6	8.02	76.9	0.18	0.12	16.4	16.6	0.11	4.18	4.29	—	16,594	16,594	0.92	0.73	16,866

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartment Mid Rise	—	—	—	—	—	—	—	—	—	—	—	2,207	2,207	0.14	0.02	2,215
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	3,424	3,424	0.21	0.03	3,437
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	1,350	1,350	0.08	0.01	1,355
General Office Building	—	—	—	—	—	—	—	—	—	—	—	1,129	1,129	0.07	0.01	1,134
Total	—	—	—	—	—	—	—	—	—	—	—	8,109	8,109	0.50	0.06	8,140
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	2,207	2,207	0.14	0.02	2,215
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	3,424	3,424	0.21	0.03	3,437
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	1,350	1,350	0.08	0.01	1,355
General Office Building	—	—	—	—	—	—	—	—	—	—	—	1,129	1,129	0.07	0.01	1,134
Total	—	—	—	—	—	—	—	—	—	—	—	8,109	8,109	0.50	0.06	8,140
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	365	365	0.02	< 0.005	367
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	567	567	0.04	< 0.005	569
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	223	223	0.01	< 0.005	224

General Office Building	—	—	—	—	—	—	—	—	—	—	—	187	187	0.01	< 0.005	188
Total	—	—	—	—	—	—	—	—	—	—	—	1,343	1,343	0.08	0.01	1,348

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	2,059	2,059	0.13	0.02	2,067
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	2,768	2,768	0.17	0.02	2,778
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	1,169	1,169	0.07	0.01	1,173
General Office Building	—	—	—	—	—	—	—	—	—	—	—	983	983	0.06	0.01	986
Total	—	—	—	—	—	—	—	—	—	—	—	6,978	6,978	0.43	0.05	7,005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	2,043	2,043	0.13	0.02	2,051
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	2,765	2,765	0.17	0.02	2,775
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	1,165	1,165	0.07	0.01	1,169

General Office Building	—	—	—	—	—	—	—	—	—	—	—	981	981	0.06	0.01	985
Total	—	—	—	—	—	—	—	—	—	—	—	6,953	6,953	0.43	0.05	6,980
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	340	340	0.02	< 0.005	341
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	458	458	0.03	< 0.005	460
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	193	193	0.01	< 0.005	194
General Office Building	—	—	—	—	—	—	—	—	—	—	—	163	163	0.01	< 0.005	163
Total	—	—	—	—	—	—	—	—	—	—	—	1,154	1,154	0.07	0.01	1,158

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.07	1.16	0.49	0.01	0.09	—	0.09	0.09	—	0.09	—	1,470	1,470	0.13	< 0.005	1,474
High Turnover (Sit Down Restaurant)	0.12	2.10	1.76	0.01	0.16	—	0.16	0.16	—	0.16	—	2,503	2,503	0.22	< 0.005	2,510
Strip Mall	0.01	0.15	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	181	181	0.02	< 0.005	181

General Office Building	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	353	353	0.03	< 0.005	354
Total	0.21	3.70	2.63	0.02	0.29	—	0.29	0.29	—	0.29	—	4,507	4,507	0.40	0.01	4,520
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.07	1.16	0.49	0.01	0.09	—	0.09	0.09	—	0.09	—	1,470	1,470	0.13	< 0.005	1,474
High Turnover (Sit Down Restaurant)	0.12	2.10	1.76	0.01	0.16	—	0.16	0.16	—	0.16	—	2,503	2,503	0.22	< 0.005	2,510
Strip Mall	0.01	0.15	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	181	181	0.02	< 0.005	181
General Office Building	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	353	353	0.03	< 0.005	354
Total	0.21	3.70	2.63	0.02	0.29	—	0.29	0.29	—	0.29	—	4,507	4,507	0.40	0.01	4,520
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.01	0.21	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	243	243	0.02	< 0.005	244
High Turnover (Sit Down Restaurant)	0.02	0.38	0.32	< 0.005	0.03	—	0.03	0.03	—	0.03	—	414	414	0.04	< 0.005	416
Strip Mall	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.0	30.0	< 0.005	< 0.005	30.0
General Office Building	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	58.5	58.5	0.01	< 0.005	58.6
Total	0.04	0.68	0.48	< 0.005	0.05	—	0.05	0.05	—	0.05	—	746	746	0.07	< 0.005	748

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	0.11	2.08	1.75	0.01	0.16	—	0.16	0.16	—	0.16	—	2,486	2,486	0.22	< 0.005	2,493
Strip Mall	0.01	0.15	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	179	179	0.02	< 0.005	179
General Office Building	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	309	309	0.03	< 0.005	310
Total	0.14	2.49	2.09	0.01	0.19	—	0.19	0.19	—	0.19	—	2,974	2,974	0.26	0.01	2,982
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	0.11	2.08	1.75	0.01	0.16	—	0.16	0.16	—	0.16	—	2,486	2,486	0.22	< 0.005	2,493
Strip Mall	0.01	0.15	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	179	179	0.02	< 0.005	179
General Office Building	0.01	0.26	0.22	< 0.005	0.02	—	0.02	0.02	—	0.02	—	309	309	0.03	< 0.005	310
Total	0.14	2.49	2.09	0.01	0.19	—	0.19	0.19	—	0.19	—	2,974	2,974	0.26	0.01	2,982
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	0.02	0.38	0.32	< 0.005	0.03	—	0.03	0.03	—	0.03	—	412	412	0.04	< 0.005	413
Strip Mall	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.6	29.6	< 0.005	< 0.005	29.7
General Office Building	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	51.1	51.1	< 0.005	< 0.005	51.3
Total	0.03	0.45	0.38	< 0.005	0.03	—	0.03	0.03	—	0.03	—	492	492	0.04	< 0.005	494

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.34	5.82	2.48	0.04	0.47	—	0.47	0.47	—	0.47	0.00	7,392	7,392	0.14	0.01	7,399
Consumer Products	12.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	3.61	0.31	32.3	< 0.005	0.03	—	0.03	0.02	—	0.02	—	99.4	99.4	< 0.005	< 0.005	99.8
Total	18.0	6.13	34.8	0.04	0.50	—	0.50	0.49	—	0.49	0.00	7,491	7,491	0.14	0.01	7,499

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.34	5.82	2.48	0.04	0.47	—	0.47	0.47	—	0.47	0.00	7,392	7,392	0.14	0.01	7,399
Consumer Products	12.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	14.4	5.82	2.48	0.04	0.47	—	0.47	0.47	—	0.47	0.00	7,392	7,392	0.14	0.01	7,399
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	83.8	83.8	< 0.005	< 0.005	83.9
Consumer Products	2.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.45	0.04	4.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	11.3
Total	3.03	0.11	4.07	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	95.1	95.1	< 0.005	< 0.005	95.2

4.3.2. Mitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.34	5.82	2.48	0.04	0.47	—	0.47	0.47	—	0.47	0.00	7,392	7,392	0.14	0.01	7,399
Consumer Products	12.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectu Coatings	0.94	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	14.2	5.82	2.48	0.04	0.47	—	0.47	0.47	—	0.47	0.00	7,392	7,392	0.14	0.01	7,399
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.34	5.82	2.48	0.04	0.47	—	0.47	0.47	—	0.47	0.00	7,392	7,392	0.14	0.01	7,399
Consumer Products	12.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectu ral Coatings	0.94	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	14.2	5.82	2.48	0.04	0.47	—	0.47	0.47	—	0.47	0.00	7,392	7,392	0.14	0.01	7,399
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	83.8	83.8	< 0.005	< 0.005	83.9
Consumer Products	2.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectu ral Coatings	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	2.53	0.07	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	83.8	83.8	< 0.005	< 0.005	83.9

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	29.7	154	183	3.05	0.07	282
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	39.5	204	244	4.06	0.10	374
Strip Mall	—	—	—	—	—	—	—	—	—	—	13.4	69.3	82.7	1.38	0.03	127
General Office Building	—	—	—	—	—	—	—	—	—	—	14.8	76.7	91.5	1.52	0.04	140
Total	—	—	—	—	—	—	—	—	—	—	97.3	504	601	10.0	0.24	923
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	29.7	154	183	3.05	0.07	282
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	39.5	204	244	4.06	0.10	374
Strip Mall	—	—	—	—	—	—	—	—	—	—	13.4	69.3	82.7	1.38	0.03	127
General Office Building	—	—	—	—	—	—	—	—	—	—	14.8	76.7	91.5	1.52	0.04	140
Total	—	—	—	—	—	—	—	—	—	—	97.3	504	601	10.0	0.24	923
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	4.92	25.5	30.4	0.51	0.01	46.6
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	6.53	33.8	40.4	0.67	0.02	62.0

Strip Mall	—	—	—	—	—	—	—	—	—	—	2.22	11.5	13.7	0.23	0.01	21.0
General Office Building	—	—	—	—	—	—	—	—	—	—	2.45	12.7	15.1	0.25	0.01	23.3
Total	—	—	—	—	—	—	—	—	—	—	16.1	83.4	99.6	1.66	0.04	153

4.4.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	23.8	123	147	2.45	0.06	226
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	35.8	185	221	3.68	0.09	340
Strip Mall	—	—	—	—	—	—	—	—	—	—	12.3	63.6	75.9	1.26	0.03	117
General Office Building	—	—	—	—	—	—	—	—	—	—	13.4	69.5	83.0	1.38	0.03	127
Total	—	—	—	—	—	—	—	—	—	—	85.3	442	527	8.78	0.21	809
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	23.8	123	147	2.45	0.06	226
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	35.8	185	221	3.68	0.09	340

Strip Mall	—	—	—	—	—	—	—	—	—	—	12.3	63.6	75.9	1.26	0.03	117
General Office Building	—	—	—	—	—	—	—	—	—	—	13.4	69.5	83.0	1.38	0.03	127
Total	—	—	—	—	—	—	—	—	—	—	85.3	442	527	8.78	0.21	809
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	3.94	20.4	24.3	0.41	0.01	37.4
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	5.93	30.7	36.6	0.61	0.01	56.2
Strip Mall	—	—	—	—	—	—	—	—	—	—	2.03	10.5	12.6	0.21	0.01	19.3
General Office Building	—	—	—	—	—	—	—	—	—	—	2.22	11.5	13.7	0.23	0.01	21.1
Total	—	—	—	—	—	—	—	—	—	—	14.1	73.1	87.3	1.45	0.03	134

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	165	0.00	165	16.5	0.00	576

High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	435	0.00	435	43.5	0.00	1,522
Strip Mall	—	—	—	—	—	—	—	—	—	—	53.4	0.00	53.4	5.33	0.00	187
General Office Building	—	—	—	—	—	—	—	—	—	—	21.8	0.00	21.8	2.18	0.00	76.2
Total	—	—	—	—	—	—	—	—	—	—	675	0.00	675	67.4	0.00	2,361
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	165	0.00	165	16.5	0.00	576
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	435	0.00	435	43.5	0.00	1,522
Strip Mall	—	—	—	—	—	—	—	—	—	—	53.4	0.00	53.4	5.33	0.00	187
General Office Building	—	—	—	—	—	—	—	—	—	—	21.8	0.00	21.8	2.18	0.00	76.2
Total	—	—	—	—	—	—	—	—	—	—	675	0.00	675	67.4	0.00	2,361
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	27.3	0.00	27.3	2.72	0.00	95.4
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	72.0	0.00	72.0	7.20	0.00	252
Strip Mall	—	—	—	—	—	—	—	—	—	—	8.83	0.00	8.83	0.88	0.00	30.9

General Office Building	—	—	—	—	—	—	—	—	—	—	3.61	0.00	3.61	0.36	0.00	12.6
Total	—	—	—	—	—	—	—	—	—	—	112	0.00	112	11.2	0.00	391

4.5.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	165	0.00	165	16.5	0.00	576
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	435	0.00	435	43.5	0.00	1,522
Strip Mall	—	—	—	—	—	—	—	—	—	—	53.4	0.00	53.4	5.33	0.00	187
General Office Building	—	—	—	—	—	—	—	—	—	—	21.8	0.00	21.8	2.18	0.00	76.2
Total	—	—	—	—	—	—	—	—	—	—	675	0.00	675	67.4	0.00	2,361
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	165	0.00	165	16.5	0.00	576
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	435	0.00	435	43.5	0.00	1,522
Strip Mall	—	—	—	—	—	—	—	—	—	—	53.4	0.00	53.4	5.33	0.00	187

General Office Building	—	—	—	—	—	—	—	—	—	—	21.8	0.00	21.8	2.18	0.00	76.2
Total	—	—	—	—	—	—	—	—	—	—	675	0.00	675	67.4	0.00	2,361
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	27.3	0.00	27.3	2.72	0.00	95.4
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	72.0	0.00	72.0	7.20	0.00	252
Strip Mall	—	—	—	—	—	—	—	—	—	—	8.83	0.00	8.83	0.88	0.00	30.9
General Office Building	—	—	—	—	—	—	—	—	—	—	3.61	0.00	3.61	0.36	0.00	12.6
Total	—	—	—	—	—	—	—	—	—	—	112	0.00	112	11.2	0.00	391

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.84
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	106

Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.59
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.84
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	106
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.59
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.6
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.1

4.6.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.84
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	106
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.59
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.84
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	106
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.59
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartment Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.47
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.6
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.1

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequester	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	1,875	1,875	1,875	684,382	18,159	18,159	18,159	6,627,917
High Turnover (Sit Down Restaurant)	7,272	7,272	7,272	2,654,326	24,021	60,776	60,776	12,600,648
Strip Mall	8,909	8,909	8,909	3,251,885	74,458	74,458	74,458	27,177,052
General Office Building	471	471	471	172,021	3,939	3,939	3,939	1,437,636

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	1,875	1,875	1,875	684,382	18,159	18,159	18,159	6,627,917
High Turnover (Sit Down Restaurant)	7,132	7,132	7,132	2,603,205	23,558	59,605	59,605	12,357,966
Strip Mall	8,738	8,738	8,738	3,189,255	73,024	73,024	73,024	26,653,636
General Office Building	462	462	462	168,708	3,863	3,863	3,863	1,409,948

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0

Gas Fireplaces	351
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	62
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	351
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	62
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
802872	267,624	308,403	102,801	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	1,513,989	532	0.0330	0.0040	4,587,126
High Turnover (Sit Down Restaurant)	2,349,217	532	0.0330	0.0040	7,810,183
Strip Mall	926,037	532	0.0330	0.0040	564,497
General Office Building	774,773	532	0.0330	0.0040	1,101,988

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	1,401,694	532	0.0330	0.0040	0.00
High Turnover (Sit Down Restaurant)	1,897,044	532	0.0330	0.0040	7,758,239

Strip Mall	799,124	532	0.0330	0.0040	558,092
General Office Building	672,960	532	0.0330	0.0040	963,712

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	15,498,093	0.00
High Turnover (Sit Down Restaurant)	20,590,816	0.00
Strip Mall	6,984,150	0.00
General Office Building	7,727,330	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	12,418,622	0.00
High Turnover (Sit Down Restaurant)	18,684,107	0.00
Strip Mall	6,411,450	0.00
General Office Building	7,008,688	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	305	—
High Turnover (Sit Down Restaurant)	807	—
Strip Mall	99.0	—
General Office Building	40.4	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	305	—
High Turnover (Sit Down Restaurant)	807	—
Strip Mall	99.0	—
General Office Building	40.4	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00

General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Land Use	The project site is approximately 11.80 acres.
Operations: Vehicle Data	The proposed project would generate approximately 18,528 average daily trips.
Operations: Hearths	Assuming no wood burning hearths or wood stoves.

Enderle Center - Existing Uses Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Enderle Center - Existing Uses
Operational Year	2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	18.6
Location	17350 17th St, Tustin, CA 92780, USA
County	Orange
City	Tustin
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5961
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
High Turnover (Sit Down Restaurant)	28.8	1000sqft	2.00	28,750	0.00	—	—	—

Strip Mall	40.0	1000sqft	2.00	39,960	0.00	—	—	—
General Office Building	18.4	1000sqft	0.80	18,426	0.00	—	—	—
Parking Lot	7.00	Acre	7.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	26.5	18.5	197	0.47	0.38	41.7	42.1	0.36	10.6	10.9	245	51,309	51,554	27.1	1.93	53,045
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	25.6	20.0	181	0.45	0.37	41.7	42.1	0.35	10.6	10.9	245	49,474	49,718	27.2	2.03	51,053
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	25.0	17.6	162	0.37	0.33	33.5	33.8	0.31	8.49	8.80	245	41,600	41,845	27.0	1.76	43,157
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.56	3.22	29.5	0.07	0.06	6.11	6.17	0.06	1.55	1.61	40.5	6,887	6,928	4.46	0.29	7,145

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	23.7	17.4	192	0.46	0.29	41.7	42.0	0.27	10.6	10.9	—	46,966	46,966	2.25	1.84	47,763
Area	2.75	0.03	3.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	15.6	15.6	< 0.005	< 0.005	15.6
Energy	0.06	1.08	0.91	0.01	0.08	—	0.08	0.08	—	0.08	—	4,178	4,178	0.29	0.02	4,193
Water	—	—	—	—	—	—	—	—	—	—	28.7	148	177	2.95	0.07	272
Waste	—	—	—	—	—	—	—	—	—	—	216	0.00	216	21.6	0.00	757
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	45.2
Total	26.5	18.5	197	0.47	0.38	41.7	42.1	0.36	10.6	10.9	245	51,309	51,554	27.1	1.93	53,045
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	23.4	19.0	180	0.44	0.29	41.7	42.0	0.27	10.6	10.9	—	45,147	45,147	2.36	1.93	45,786
Area	2.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.06	1.08	0.91	0.01	0.08	—	0.08	0.08	—	0.08	—	4,178	4,178	0.29	0.02	4,193
Water	—	—	—	—	—	—	—	—	—	—	28.7	148	177	2.95	0.07	272
Waste	—	—	—	—	—	—	—	—	—	—	216	0.00	216	21.6	0.00	757
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	45.2
Total	25.6	20.0	181	0.45	0.37	41.7	42.1	0.35	10.6	10.9	245	49,474	49,718	27.2	2.03	51,053
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	22.4	16.5	158	0.37	0.24	33.5	33.7	0.23	8.49	8.72	—	37,263	37,263	2.11	1.67	37,880
Area	2.56	0.02	2.59	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.7	10.7	< 0.005	< 0.005	10.7
Energy	0.06	1.08	0.91	0.01	0.08	—	0.08	0.08	—	0.08	—	4,178	4,178	0.29	0.02	4,193
Water	—	—	—	—	—	—	—	—	—	—	28.7	148	177	2.95	0.07	272
Waste	—	—	—	—	—	—	—	—	—	—	216	0.00	216	21.6	0.00	757

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	45.2
Total	25.0	17.6	162	0.37	0.33	33.5	33.8	0.31	8.49	8.80	245	41,600	41,845	27.0	1.76	43,157
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.09	3.02	28.9	0.07	0.04	6.11	6.15	0.04	1.55	1.59	—	6,169	6,169	0.35	0.28	6,272
Area	0.47	< 0.005	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.77	1.77	< 0.005	< 0.005	1.77
Energy	0.01	0.20	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	692	692	0.05	< 0.005	694
Water	—	—	—	—	—	—	—	—	—	—	4.75	24.6	29.3	0.49	0.01	45.0
Waste	—	—	—	—	—	—	—	—	—	—	35.8	0.00	35.8	3.58	0.00	125
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.49
Total	4.56	3.22	29.5	0.07	0.06	6.11	6.17	0.06	1.55	1.61	40.5	6,887	6,928	4.46	0.29	7,145

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	10.3	7.61	84.1	0.20	0.13	18.2	18.4	0.12	4.63	4.74	—	20,510	20,510	0.98	0.80	20,858
Strip Mall	12.7	9.32	103	0.25	0.16	22.3	22.5	0.14	5.67	5.81	—	25,127	25,127	1.20	0.98	25,553
General Office Building	0.67	0.49	5.45	0.01	0.01	1.18	1.19	0.01	0.30	0.31	—	1,329	1,329	0.06	0.05	1,352

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	23.7	17.4	192	0.46	0.29	41.7	42.0	0.27	10.6	10.9	—	46,966	46,966	2.25	1.84	47,763
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	10.2	8.28	78.6	0.19	0.13	18.2	18.4	0.12	4.63	4.74	—	19,715	19,715	1.03	0.84	19,995
Strip Mall	12.5	10.1	96.2	0.24	0.16	22.3	22.5	0.14	5.67	5.81	—	24,154	24,154	1.26	1.03	24,496
General Office Building	0.66	0.54	5.09	0.01	0.01	1.18	1.19	0.01	0.30	0.31	—	1,278	1,278	0.07	0.05	1,296
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	23.4	19.0	180	0.44	0.29	41.7	42.0	0.27	10.6	10.9	—	45,147	45,147	2.36	1.93	45,786
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	1.69	1.05	9.99	0.02	0.01	1.87	1.88	0.01	0.47	0.49	—	1,913	1,913	0.13	0.10	1,948
Strip Mall	2.27	1.87	18.0	0.04	0.03	4.03	4.05	0.03	1.02	1.05	—	4,042	4,042	0.21	0.17	4,106
General Office Building	0.12	0.10	0.95	< 0.005	< 0.005	0.21	0.21	< 0.005	0.05	0.06	—	214	214	0.01	0.01	217
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	4.09	3.02	28.9	0.07	0.04	6.11	6.15	0.04	1.55	1.59	—	6,169	6,169	0.35	0.28	6,272

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	1,451	1,451	0.09	0.01	1,457
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	572	572	0.04	< 0.005	574
General Office Building	—	—	—	—	—	—	—	—	—	—	—	479	479	0.03	< 0.005	480
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	389	389	0.02	< 0.005	391
Total	—	—	—	—	—	—	—	—	—	—	—	2,891	2,891	0.18	0.02	2,902
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	1,451	1,451	0.09	0.01	1,457
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	572	572	0.04	< 0.005	574
General Office Building	—	—	—	—	—	—	—	—	—	—	—	479	479	0.03	< 0.005	480
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	389	389	0.02	< 0.005	391
Total	—	—	—	—	—	—	—	—	—	—	—	2,891	2,891	0.18	0.02	2,902
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	240	240	0.01	< 0.005	241

Strip Mall	—	—	—	—	—	—	—	—	—	—	—	94.7	94.7	0.01	< 0.005	95.1
General Office Building	—	—	—	—	—	—	—	—	—	—	—	79.2	79.2	< 0.005	< 0.005	79.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	64.5	64.5	< 0.005	< 0.005	64.7
Total	—	—	—	—	—	—	—	—	—	—	—	479	479	0.03	< 0.005	480

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	0.05	0.89	0.75	0.01	0.07	—	0.07	0.07	—	0.07	—	1,061	1,061	0.09	< 0.005	1,064
Strip Mall	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.7	76.7	0.01	< 0.005	76.9
General Office Building	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	150	150	0.01	< 0.005	150
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.06	1.08	0.91	0.01	0.08	—	0.08	0.08	—	0.08	—	1,287	1,287	0.11	< 0.005	1,291
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	0.05	0.89	0.75	0.01	0.07	—	0.07	0.07	—	0.07	—	1,061	1,061	0.09	< 0.005	1,064
Strip Mall	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.7	76.7	0.01	< 0.005	76.9

General Office Building	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	150	150	0.01	< 0.005	150
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.06	1.08	0.91	0.01	0.08	—	0.08	0.08	—	0.08	—	1,287	1,287	0.11	< 0.005	1,291
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	0.01	0.16	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	176	176	0.02	< 0.005	176
Strip Mall	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.7	12.7	< 0.005	< 0.005	12.7
General Office Building	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.8	24.8	< 0.005	< 0.005	24.8
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.20	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	213	213	0.02	< 0.005	214

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.62	0.03	3.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	15.6	15.6	< 0.005	< 0.005	15.6
Total	2.75	0.03	3.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	15.6	15.6	< 0.005	< 0.005	15.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	2.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.08	< 0.005	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.77	1.77	< 0.005	< 0.005	1.77
Total	0.47	< 0.005	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.77	1.77	< 0.005	< 0.005	1.77

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	16.7	86.6	103	1.72	0.04	159
Strip Mall	—	—	—	—	—	—	—	—	—	—	5.67	29.4	35.0	0.58	0.01	53.8
General Office Building	—	—	—	—	—	—	—	—	—	—	6.28	32.5	38.8	0.65	0.02	59.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	28.7	148	177	2.95	0.07	272
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	16.7	86.6	103	1.72	0.04	159
Strip Mall	—	—	—	—	—	—	—	—	—	—	5.67	29.4	35.0	0.58	0.01	53.8
General Office Building	—	—	—	—	—	—	—	—	—	—	6.28	32.5	38.8	0.65	0.02	59.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	28.7	148	177	2.95	0.07	272
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	2.77	14.3	17.1	0.28	0.01	26.3
Strip Mall	—	—	—	—	—	—	—	—	—	—	0.94	4.86	5.80	0.10	< 0.005	8.91
General Office Building	—	—	—	—	—	—	—	—	—	—	1.04	5.38	6.42	0.11	< 0.005	9.86

Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	4.75	24.6	29.3	0.49	0.01	45.0

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	184	0.00	184	18.4	0.00	645
Strip Mall	—	—	—	—	—	—	—	—	—	—	22.6	0.00	22.6	2.26	0.00	79.1
General Office Building	—	—	—	—	—	—	—	—	—	—	9.24	0.00	9.24	0.92	0.00	32.3
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	216	0.00	216	21.6	0.00	757
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	184	0.00	184	18.4	0.00	645
Strip Mall	—	—	—	—	—	—	—	—	—	—	22.6	0.00	22.6	2.26	0.00	79.1

General Office Building	—	—	—	—	—	—	—	—	—	—	9.24	0.00	9.24	0.92	0.00	32.3
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	216	0.00	216	21.6	0.00	757
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	30.5	0.00	30.5	3.05	0.00	107
Strip Mall	—	—	—	—	—	—	—	—	—	—	3.74	0.00	3.74	0.37	0.00	13.1
General Office Building	—	—	—	—	—	—	—	—	—	—	1.53	0.00	1.53	0.15	0.00	5.35
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	35.8	0.00	35.8	3.58	0.00	125

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44.9
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	45.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44.9
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.25
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	45.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.44
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.49

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year

High Turnover (Sit Down Restaurant)	3,082	3,082	3,082	1,124,930	10,180	25,757	25,757	5,340,281
Strip Mall	3,776	3,776	3,776	1,378,174	31,556	31,556	31,556	11,517,849
General Office Building	200	200	200	72,904	1,669	1,669	1,669	609,285
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	130,704	43,568	18,295

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

High Turnover (Sit Down Restaurant)	995,622	532	0.0330	0.0040	3,310,034
Strip Mall	392,462	532	0.0330	0.0040	239,238
General Office Building	328,357	532	0.0330	0.0040	467,034
Parking Lot	267,110	532	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High Turnover (Sit Down Restaurant)	8,726,594	0.00
Strip Mall	2,959,938	0.00
General Office Building	3,274,922	0.00
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High Turnover (Sit Down Restaurant)	342	—
Strip Mall	42.0	—
General Office Building	17.1	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Land Use	The project site is approximately 11.80 acres. Of the site area, 7 acres within the southeastern portion of the project site have been identified as suitable for housing development. These 7 acres are currently made up of paved parking areas.

Operations: Vehicle Data	The existing uses generate approximately 7,058 average daily trips.
Operations: Hearths	Assuming no wood burning hearths.

APPENDIX B

DETAILED ENERGY CALCULATIONS

Construction Off-Road Equipment										
Phase	**Off-Road Equipment Type**	**Amount**	**Usage Hour/Day**	**Total Usage Days**	**Total Usage Hours/Equipment**	**Horsepower**	**Load Factor**	**Total Usage Hours/ Equipment**	**Horsepower-Hour**	**Fuel Usage (gallons)**
Demolition	Concrete/Industrial Saws	1	8	20	160	33	0.73	160	3854.4	197.34528
	Excavators	3	8	20	480	36	0.38	480	6566.4	336.19968
	Rubber Tired Dozers	2	8	20	320	367	0.4	320	46976	2405.1712
Site Preparation	Rubber Tired Dozers	3	8	10	240	367	0.4	240	35232	1803.8784
	Tractors/Loaders/Backhoes	4	8	10	320	84	0.37	320	9945.6	509.21472
Grading	Excavators	2	8	30	480	36	0.38	480	6566.4	336.19968
	Graders	1	8	30	240	148	0.41	240	14563.2	745.63584
	Rubber Tired Dozers	1	8	30	240	367	0.4	240	35232	1803.8784
	Scrapers	2	8	30	480	423	0.48	480	97459.2	4989.91104
	Tractors/Loaders/Backhoes	2	8	30	480	84	0.37	480	14918.4	763.82208
Building Construction	Cranes	1	7	300	2100	367	0.29	2100	223503	11443.3536
	Forklifts	3	8	300	7200	82	0.2	7200	118080	6045.696
	Generator Sets	1	8	300	2400	14	0.74	2400	24864	1273.0368
	Tractors/Loaders/Backhoes	3	7	300	6300	84	0.37	6300	195804	10025.1648
	Welders	1	8	300	2400	46	0.45	2400	49680	2543.616
Paving	Pavers	2	8	20	320	81	0.42	320	10886.4	557.38368
	Paving Equipment	2	8	20	320	89	0.36	320	10252.8	524.94336
	Rollers	2	8	20	320	36	0.38	320	4377.6	224.13312
Architectural Coating	Air Compressors	1	6	100	600	37	0.48	600	10656	545.5872
									Total	**47074.17088** Diesel

Construction Truck and Construction Worker Vehicle Fuel Efficiency				
		EMFAC 2021 Outputs		
Vehicle Type	Vehicle Class	Fuel Consumption (1,000 gallons/day)	VMT (miles/ day)	Fuel Efficency (miles/gallon)
Construction Truck	MHDT	129.3	1,155,908.7	8.9
	HHDT	202.3	1,220,548.3	6.0
	HHDT/MHDT	-	-	7.5
Construction Worker Vehicle	LDA	1408.4	42,285,386.1	30.0
	LDT1	139.0	3,495,530.4	25.2
	LDT2	872.9	21,321,177.5	24.4
	Worker Mix	-	-	27.4

Notes:

[1] For construction trucks assumes 50 percent HHDT and 50 percent MHDT vehicles, consistent with assumptions in CalEEMod for hauling trucks. For construction worker vehicles assumes 50 percent LDA, 25 percent LDT1, and 25 percent LDT2 vehicles, consistent with assumptions in CalEEMod for worker vehicles.

[2] EMFAC2021 was run for Orange County for the construction year 2024. Data was aggregated over all vehicle model years and speed bins.

[3] The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

Construction Vehicle Fuel Use - Diesel Vehicles						
Phase	Trip Type	Total Trips	Trip Length (miles)	Total VMT	Diesel Fuel Effiency (miles/gallon)	Fuel Usage (gallons/year)
Demolition	Hauling	5,520.0	20.0	110,400.0	6.0	18,298.3
Building Construction	Vendor	38,400.0	10.2	391,680.0	7.5	52,317.8
					Total	**70,616.1**

Diesel

[1] Assumes 100 percent HHDT vehicles for haul trucks and 50 percent HHDT/50 percent MHDT vehicles for MHDT, consistent with assumptions in CalEEMod.

[2] EMFAC2021 was run for Orange County for the construction year 2024. Data was aggregated over all vehicle model years and speed bins.

[3] The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

Construction Worker Vehicle Fuel Use - Gasoline Vehicles							
Phase	Total One-Way Trips/Day	Total Days	Total Trips	Trip Length (miles)	Total VMT	Gasoline Fuel Effiency (miles/gallon)	Fuel Usage (gallons/year)
Demolition	15	20	600	18.5	11,100	27.4	405.0
Site Preparation	18	10	360	18.5	6,660	27.4	243.0
Grading	20	30	1,200	18.5	22,200	27.4	810.0
Building Construction	339	300	203,400	18.5	3,762,900	27.4	137,301.7
Paving	15	20	600	18.5	11,100	27.4	405.0
Architectural Coating	68	100	13,600	18.5	251,600	27.4	9,180.4
						Total	**148,345.3**

Gas

Total Construction Gasoline Usage	148,345.3
Total Construction Diesel Usage	117,690.3

Proposed Project Operational Trips			
Vehicle Class	CalEEMod	Total Project Trips	Total Trips per Vehicle Class
LDA	50.24%	18,528	9,308.5
LDT1	22.92%	18,528	4,246.6
LDT2	2.71%	18,528	502.1
MDV	14.42%	18,528	2,671.7
LHD1	4.22%	18,528	781.9
LHD2	0.69%	18,528	127.8
MHD	1.52%	18,528	281.6
HHD	0.54%	18,528	100.1
OBUS	0.06%	18,528	11.1
UBUS	0.04%	18,528	7.4
MCY	2.16%	18,528	400.2
SBUS	0.10%	18,528	18.5
MH	0.39%	18,528	72.3

Proposed Project Operational Trips – Fuel Efficiency						
Fuel	Vehicle Class	EMFAC2021 Outputs1				
		Fleet Mix (%)2	Fuel Consumption (1,000 gallons/day)	VMT (miles/day)	Fuel Efficiency3 (miles/gallon)	
Gas	LDA	52%	1408.4	42,285,386.1	30.0	15.5
	LDT1	4%	139.0	3,495,530.4	25.2	1.1
	LDT2	26%	872.9	21,321,177.5	24.4	6.4
	MDV	15%	635.4	12,620,485.4	19.9	3.1
	LHD1	2%	118.3	1,661,882.0	14.0	0.3
	MCY	0%	7.6	321,576.6	42.2	0.2
	MH	0%	12.0	58,495.6	4.9	0.0
	Fleet Mix	–	–	–	26.5	26.5
Diesel	LHD2	14%	22.4	391,527.7	17.5	2.5
	MHDT	42%	129.3	1,155,908.7	8.9	3.7
	HHDT	44%	202.3	1,220,548.3	6.0	2.7
	Fleet Mix	–	–	–	8.9	8.9

Notes:

[1] EMFAC2021 was run for Orange County for the year 2024. Data was aggregated over all vehicle model years and speed bins.

[2] Fleet mix is based on assumptions made in CalEEMod for the proposed project.

[3] The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

Proposed Project Operational Trips – Fuel Usage						
Land Use	Total Annual VMT2 (miles/year)	Fuel Type	Portion of Fleet3 (%)	VMT by Fuel Type (miles/year)	Fleet Mix Efficiency4 (miles/gallon)	Fuel Usage (gallons/ year)
Apartments Mid Rise	6,627,917.00	Gas	97.2%	6,442,335.3	26.5	243,177.6
		Diesel	2.8%	182,267.7	8.9	20,566.1
High Turnover Restaurant	12,600,648.00	Gas	97.2%	12,247,829.9	26.5	462,316.5
		Diesel	2.8%	346,517.8	8.9	39,099.1
Strip Mall	27,177,052.00	Gas	97.2%	26,416,094.5	26.5	997,123.4
		Diesel	2.8%	747,368.9	8.9	84,328.9
General Office Building	1,437,636.00	Gas	97.2%	1,397,382.2	26.5	52,746.7
		Diesel	2.8%	39,535.0	8.9	4,460.9
					Total Gasoline/year	**1,755,364.2**
					Total Diesel/year	**148,454.9**

Notes:

[1] Calculated for year 2024 only. Future years will likely use less fuel due to more efficient cars.

[2] Total VMT is based on project's trip generation and trip lengths.

[3] Fleet distribution is based on EMFAC2021 output and CalEEMod assumptions.

[4] Fuel efficiency is based on fuel consumption and VMT data from EMFAC2021 for Orange County and total VMT.

Proposed Project Electricity Usage	
Electricity by Land Use	**kWh/year**
Apartments Mid Rise	1,513,989
High Turnover Restaurant	2,349,217
Strip Mall	926,037
General Office Building	774,773
Total	**5,564,016**

Proposed Project Natural Gas Usage			
Natural Gas by Land Use	**kBTU/year**	**BTU/year**	**therms/year**
Apartments Mid Rise	4,587,126	4,587,126,000	45,880
High Turnover Restaurant	7,810,183	7,810,183,000	78,117
Strip Mall	564,497	564,497,000	5,646
General Office Building	1,101,988	1,101,988,000	11,022
Total	**14,063,794**	**14,063,794,000**	**140,666**

Existing Uses Operational Trips			
Vehicle Class	CalEEMod	Total Project Trips	Total Trips per Vehicle Class
LDA	50.24%	7,058	3,545.9
LDT1	4.22%	7,058	297.8
LDT2	22.92%	7,058	1,617.7
MDV	14.42%	7,058	1,017.8
LHD1	2.71%	7,058	191.3
LHD2	0.69%	7,058	48.7
MHD	1.52%	7,058	107.3
HHD	0.54%	7,058	38.1
OBUS	0.06%	7,058	4.2
UBUS	0.04%	7,058	2.8
MCY	2.16%	7,058	152.5
SBUS	0.10%	7,058	7.1
MH	0.39%	7,058	27.5

Existing Uses Operational Trips – Fuel Efficiency						
Fuel	Vehicle Class	EMFAC2021 Outputs1				
		Fleet Mix (%)2	Fuel Consumption (1,000 gallons/day)	VMT (miles/day)	Fuel Efficiency3 (miles/gallon)	
Gas	LDA	52%	1408.4	42,285,386.1	30.0	15.5
	LDT1	4%	139.0	3,495,530.4	25.2	1.1
	LDT2	26%	872.9	21,321,177.5	24.4	6.4
	MDV	15%	635.4	12,620,485.4	19.9	3.1
	LHD1	2%	118.3	1,661,882.0	14.0	0.3
	MCY	0%	7.6	321,576.6	42.2	0.2
	MH	0%	12.0	58,495.6	4.9	0.0
	Fleet Mix	–	–	–	26.5	26.5
Diesel	LHD2	14%	22.4	391,527.7	17.5	2.5
	MHDT	42%	129.3	1,155,908.7	8.9	3.7
	HHDT	44%	202.3	1,220,548.3	6.0	2.7
	Fleet Mix	–	–	–	8.9	8.9

Notes:

[1] EMFAC2021 was run for Orange County for the year 2024. Data was aggregated over all vehicle model years and speed bins.

[2] Fleet mix is based on assumptions made in CalEEMod for the proposed project.

[3] The fuel efficiency was calculated by dividing the VMT (miles/day) by the fuel consumption (gallons/day).

Existing Uses Operational Trips – Fuel Usage						
Land Use	Total Annual VMT2 (miles/year)	Fuel Type	Portion of Fleet3 (%)	VMT by Fuel Type (miles/year)	Fleet Mix Efficiency4 (miles/gallon)	Fuel Usage (gallons/ year)
High Turnover Restaurant	5,340,281.00	Gas	97.2%	5,190,753.1	26.5	195,934.4
		Diesel	2.8%	146,857.7	8.9	16,570.6
Strip Mall	11,517,849.00	Gas	97.2%	11,195,349.2	26.5	422,588.7
		Diesel	2.8%	316,740.8	8.9	35,739.2
General Office Building	609,285.00	Gas	97.2%	592,225.0	26.5	22,354.6
		Diesel	2.8%	16,755.3	8.9	1,890.6
					Total Gasoline/year	**640,877.7**
					Total Diesel/year	**54,200.4**

Notes:

[1] Calculated for year 2024 only. Future years will likely use less fuel due to more efficient cars.

[2] Total VMT is based on project's trip generation and trip lengths.

[3] Fleet distribution is based on EMFAC2021 output and CalEEMod assumptions.

[4] Fuel efficiency is based on fuel consumption and VMT data from EMFAC2021 for Orange County and total VMT.

Existing Uses Electricity Usage	
Electricity by Land Use	**kWh/year**
High Turnover Restaurant	995,622
Strip Mall	392,462
General Office Building	328,357
Parking Lot	267,770
Total	**1,984,211**

Existing Uses Natural Gas Usage			
Natural Gas by Land Use	**kBTU/year**	**BTU/year**	**therms/year**
High Turnover Restaurant	3,310,034	3,310,034,000	33,107
Strip Mall	239,238	239,238,000	2,393
General Office Building	467,034	467,034,000	4,671
Total	**4,016,306**	**4,016,306,000**	**40,171**