Appendix B:
Air Quality and Greenhouse Gas Emissions Supporting Information

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Air Quality, Greenhouse Gas Emissions, and Energy Analysis Report
211-281 River Oaks Parkway Residential Project
City of San José, Santa Clara County, California

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius (Centigrade)
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AERMOD	American Meteorological Society/EPA Regulatory Model
AQP	Air Quality Plan
ARB	California Air Resources Board
ATCM	Airborne Toxics Control Measure
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BMP	Best Management Practice
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARE	Community Air Risk Evaluation
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	methane
CNG	compressed natural gas
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPF	cancer potency factor
DPM	diesel particulate matter
du/acre	dwelling units per acre
EDFZ	Electricity Demand Forecast Zone
EIA	United States Energy Information
EIR	Environmental Impact Report
EMFAC	Emission Factor Model

EPA	United States Environmental Protection Agency
EV	electric vehicle
FIP	Federal Implementation Plan
GHG	greenhouse gas
GHGRS	Greenhouse Gas Reduction Strategy
g/L	grams per liter
GWh	gigawatt-hours
HAP	Hazardous Air Pollutant
HARP2	Hot Spots Analysis and Reporting Program Version 2
HFC	hydrofluorocarbon
HHD	heavy heavy-duty
HI	hazard index
hp	horsepower
HRA	Health Risk Assessment
HVAC	heating, ventilation, and air conditioning
IOU	investor-owned utility
IPCC	United Nations Intergovernmental Panel on Climate Change
kW	kilowatts
kWh	kilowatt hour
lb/day	pounds per day
LCFS	Low Carbon Fuel Standard
LDA	light-duty automobile
LDT	light-duty truck
LDT1	light-duty one-axle truck
LDT2	light-duty two-axle truck
LEV	Low Emission Vehicle
LSE	load-serving entity
MEIR	Maximally Exposed Individual Resident
MEIW	Maximally Exposed Individual Worker
MM	Mitigation Measure
MMBTU	Million Metric British Thermal Units
MMT	million metric tons
mph	miles per hour
MT	metric tons
MTC	Metropolitan Transportation Commission
MW	megawatts
MWh	megawatt-hour
N_2O	nitrous oxide

NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NF_3	nitrogen trifluoride
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NOAA	National Oceanic and Atmospheric Administration
OEHHA	California Office of Environmental Health Hazard Assessment
OPR	California Governor's Office of Planning and Research
Pb	lead
PFC	perfluorocarbon
PG&E	Pacific Gas and Electric Company
PHEV	plug-in hybrid vehicle
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
PV	photovoltaics
REL	Reference Exposure Level
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
SB	Senate Bill
SCR	Selective Catalytic Reduction
SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SIP	State Implementation Plan
SO_X	sulfur oxides
SO_2	sulfur dioxide
TAC	toxic air contaminant
TERO	Transit Employment Residential Overlay
VMT	Vehicle Miles Traveled
VOC	volatile organic compound
WAF	worker adjustment factor
ZEV	Zero-Emission Vehicle

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SECTION 1: INTRODUCTION

1.1 - Purpose and Methods of Analysis

This Air Quality, Greenhouse Gas Emissions, and Energy Analysis Report was prepared to evaluate whether the estimated criteria air pollutant, ozone precursor, toxic air contaminant (TAC), and/or greenhouse gas (GHG) emissions generated from construction and/or operation of the proposed 211-281 River Oaks Parkway Residential Project (proposed project) would cause significant impacts to air resources, the climate and/or energy in the proposed project area. The respective analyses were conducted within the context of the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] § 21000, *et seq*.). The analysis methodology follows the Bay Area Air Quality District's (BAAQMD) recommendations for the quantification of emissions and evaluation of potential impacts on air resources and the global climate.

1.2 - Project Summary

1.2.1 - Site Location

The project site is relatively flat, with site grades ranging from approximately 20 feet above mean sea level (AMSL) in the southwest to approximately 29 feet AMSL in the central portion (Exhibit 1). The site drains into existing storm drain facilities located at Cisco Way, Iron Point Drive, and River Oaks Parkway (Exhibit 2).

The site (Exhibit 3) is currently occupied by three vacant 2-story commercial office buildings, associated surface parking, a central courtyard, and landscaping consisting of ornamental trees (deciduous and evergreen), ruderal vegetation, parking lot lighting fixtures, and pedestrian pathways. A total of 184 trees are located throughout the site, along with 64 trees in the public right-of-way.

Review of historical records indicates that the property was occupied by an orchard from at least 1939 to 1973, prior to construction of the existing office buildings in the late 1970s or early 1980s. Groundwater depth on-site ranges from 10 to 15.5 feet below current grade. The site is located in a State-designated Liquefaction Hazard Zone and Santa Clara County Liquefaction Zone. The site is not located within a tsunami hazard area.

1.2.2 - Development Summary

The proposed project would include demolition of three existing buildings totaling approximately 164,606 square feet, as well as removal of all surface parking and on-site trees. Valley Oak Partners, LLC (applicant), proposes a comprehensive development plan that includes 100 market-rate townhome units and two apartment buildings providing a combined 637 units, for a total of 737 units. The 100 percent affordable apartment building would include 130 affordable units and two market-rate manager units, while the market-rate apartment building would provide 505 units. The project density would be 76.2 dwelling units per acre (du/acre) across the entire project site.

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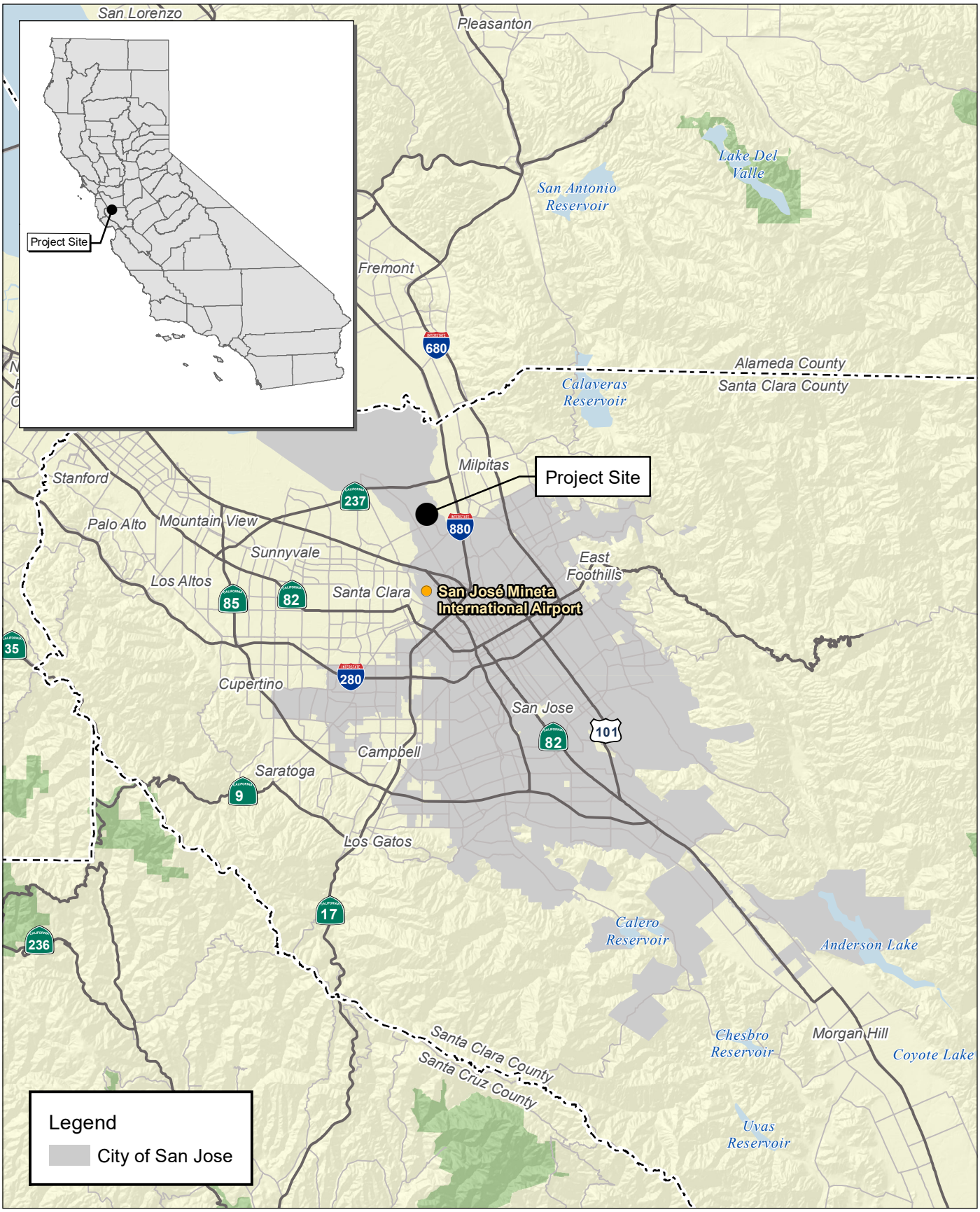

Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

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Miles

Exhibit 1
Regional Location Map

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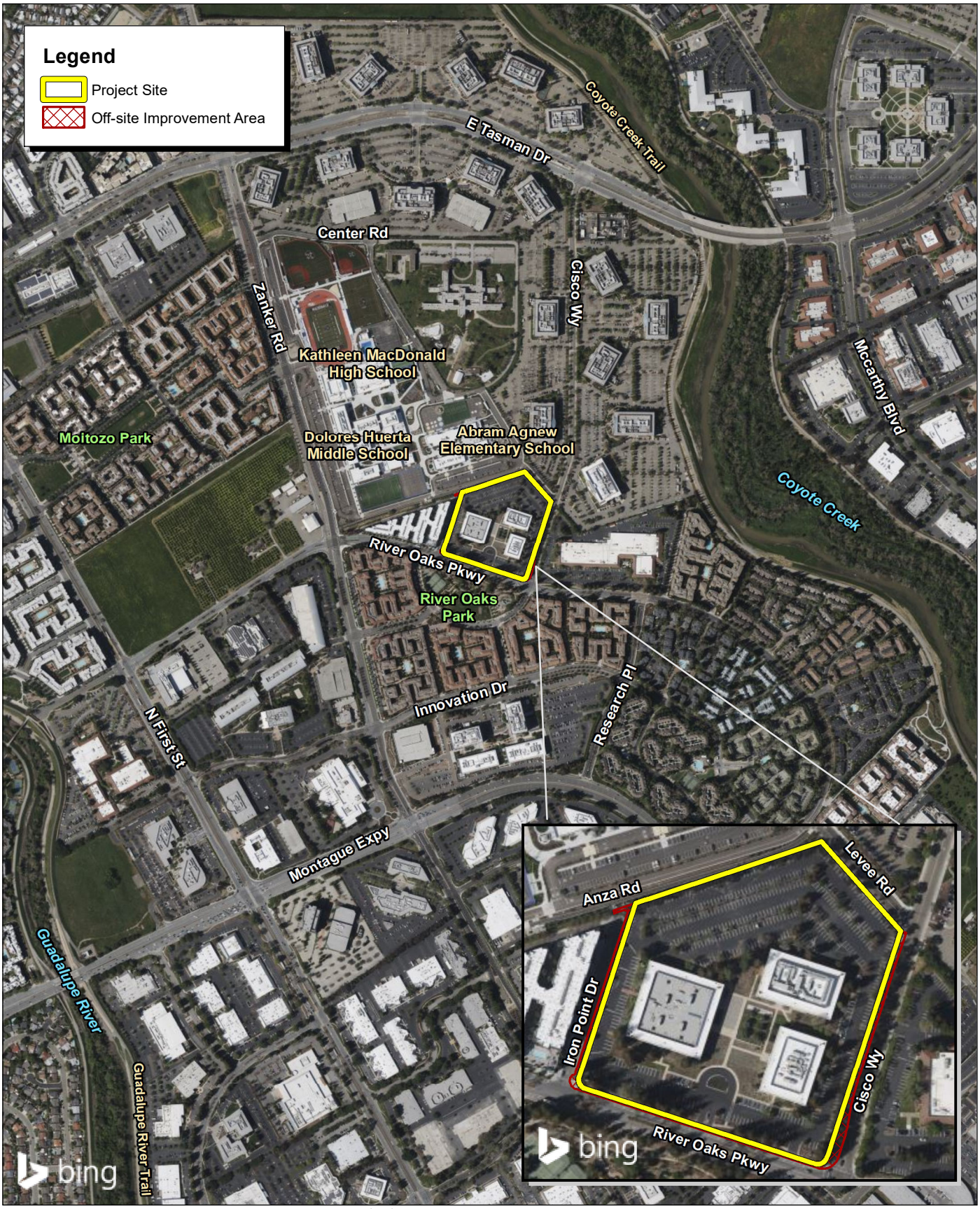

Source: Bing Aerial Imagery. Civil Engineering Associates, 05/17/2024.

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1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map

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BUILDING FRONTGATE CALCULATION:

RIVER OAKS PARKWAY

BUILDING FRONTAGE WITHIN 5' FROM EASEMENT:
124'-0" + 387'-5" = 511'-5"
STREET FRONTAGE LENGTH = 627'-11"
BUILDING FRONTAGE PERCENTAGE = 511'-5" / 627'-11" = 81%

CISCO WAY

BUILDING FRTONGATE WITHIN 5' FROM SETBACK:
19'-7" + 66'-9" + 19'-7" + 219'-10" = 325'-9"
STREET FRONTAGE LENGTH = 504'-5"
BUILDING FRONTAGE PERCENTAGE = 325'-9" / 504'-5" = 64%

Source: STUDIO T SQUARE, 05/20/2024.

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Exhibit 3
Site Plan

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Affordable housing units would range in size from 360 to 1,037 square feet; market-rate from 536 to 1,290 square feet; and townhomes from 1,230 to 1,790 square feet. Affordable and market-rate housing would include a mix of studio, 1-bedroom, 2-bedroom, and 3-bedroom units, while townhomes would be a composition of 2- and 3-bedroom units. Approval of a Vesting Tentative Map will be sought to allow the subdivision of two lots into 31 lots (16 residential lots, 10 open space lots, and five private streets).

Both apartment buildings would have a lobby and leasing office. The affordable apartment building would have a 615-square-foot main lobby, a 335-square-foot move-in lobby, and a 410-square-foot property management office. The market-rate building would have a 2,570-square-foot main lobby, a 1,540-square-foot secondary lobby, and two move-in lobbies. The leasing office would occupy 1,200 square feet.

The proposed project would include removal of 183 trees (115 ordinance-size, 68 non-ordinance-size) and 55 trees in the right-of-way. Nine redwood trees in the right-of-way (redwood Nos. 2–5, 13–15, 109, and 113) would be preserved. Prior to removing trees greater than 38-inch circumference, a Tree Removal Permit would be required. Any street tree removal would be permitted separately by the California Department of Transportation (Caltrans). Tree replacement would occur at a ratio of 1.1 to 5.1, depending on the size of the tree to be removed, and replacement trees would be a minimum of 15 gallons in size. The proposed project would require 637 15-gallon replacement trees or 319 24-inch box trees on-site. The proposed project would replace 148 24-inch box trees on-site, which is the equivalent of 296 15-gallon trees. The proposed project would pay an in lieu fee for 341 trees that would not be replaced.

Landscaping

One of the noteworthy features of the proposed project is a proposed green belt between the two apartment buildings, linking the townhomes to River Oaks Parkway. The green belt would feature a combination of enhanced paving, terraced planters, and direct access to each apartment building. The presence of the entrance plaza on the southern side of the green belt would establish a visual relationship to River Oaks Park, which is located directly across River Oaks Parkway. Because of the proposed project's proximity to River Oaks Park, project applicant is seeking an exemption from the common open space requirements. The proposed project would provide approximately 74,127 square feet of landscape area within the 103,671 square feet of common open space provided on-site.

Site lighting would be both functional and accent. Lighting would meet or exceed the minimum foot-candle levels required by the City and fixture style would complement the planned architectural character of the buildings. Interior roadway and walkway lighting would consist of cut-off-style pole lights located around the interior roads. Building entries would be lit by architecturally mounted area downlights. The proposed paseo lighting would utilize sconce lights for building entries and bollards for walkways. Accent lights such as tree uplighting and trellis downlights are also proposed. All lighting would conform to the requirements of Council Policy 4-3, Outdoor Lighting on Private Developments.

1.2.3 - Hardscape

Approximately 80 percent of the total site area would be composed of impervious surfaces such as sidewalks and roadways. Existing impervious area on-site is 7.15 acres, and the proposed project would result in an incremental increase in impervious area to 7.71 acres, representing an increase of 5.8 percent impervious area as a result of the proposed project.

1.2.4 - Circulation

Cisco Way serves as the primary vehicular access to the site. In addition, River Oaks Parkway and Iron Point Drive would provide primary vehicular access to the parking structures. Alongside Cisco Way and River Oaks Parkway, Class II bicycle lanes would be integrated to promote alternative transportation methods.

The City's standard minimum width for two-way drive aisles is 24 feet wide where 90-degree parking is provided to allow sufficient room for vehicles to back out of the parking stalls. According to the site plan, all two-way drive aisles would be at least 24 feet wide.

1.2.5 - Parking

Parking for the townhomes would be provided in two-car garages (either side-by-side or tandem design) for each unit, with a total of 200 assigned garage stalls. Additionally, there would be approximately 12 unassigned outdoor guest stalls. Bicycle parking facilities would also be provided, with a total of 120 Class 1 and Class 2 bike stalls along with four designated motorcycle parking spots.

1.2.6 - Sustainability Features

Sustainability measures for the proposed project would include, but are not limited to, all-electric buildings with on-site solar photovoltaics (PV) arrays that meet California Green Building Standards Code (CALGreen) and City of San José Reach Code minimums, ample EV charging stations, on-site bicycle storage and repair facilities, water-efficient plumbing fixtures, use of native/adapted species to reduce irrigation needs, and high-quality construction materials with longer lifespan and durability to reduce construction waste and increase performance.

1.3 - Summary of Analysis Results

Impact AIR-1 The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.

Less than significant impact with implementation of Standard Permit Condition for Air Quality (SPC for AQ) incorporated.

Impact AIR-2 The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Less than significant impact.

Impact AIR-3 The proposed project could expose sensitive receptors to substantial pollutant concentrations.

Less than significant impact with Mitigation Measure (MM) AIR-1.

Impact AIR-4 The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Less than significant impact.

Impact GHG-1 The proposed project would generate direct and indirect greenhouse gas emissions; these emissions would not result in a significant impact on the environment.

Less than significant.

Impact GHG-2 The proposed project would not conflict with an applicable plan, policy, or regulation of an agency adopted to reduce the emissions of GHG.

Less than significant.

Impact ENER-1 The proposed project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during construction or operation.

Less than significant impact.

Impact ENER-2 The proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Less than significant impact.

1.3.1 - Air Quality–Recommended Mitigation and Conditions of Approval

City of San José Standard Permit Conditions

The City of San José has the following Standard Permit Conditions which would apply to the proposed project. Unless otherwise discussed in this analysis, the proposed project is assumed to incorporate the following Standard Permit Condition:

SPC for AQ The following measures shall be implemented during all phases of construction to control dust and exhaust at the project site:

- Water active construction areas at least twice daily or as often as needed to control dust emissions.
- Cover trucks hauling soil, sand, and other loose materials and/or ensure that all trucks hauling such materials maintain at least two feet of freeboard.

- Remove visible mud or dirt trackout onto adjacent public roads using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Pave new or improved roadways, driveways, and sidewalks as soon as possible.
- Lay building pads as soon as possible after grading unless seeding or soil binders are used.
- Replant vegetation in disturbed areas as quickly as possible.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Minimize idling times either by shutting off equipment when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure [ATCM], Title 13, Section 2485 of the California Code of Regulations). Provide clear signage for construction workers at all access points.
- Maintain and property tune construction equipment in accordance with manufacturer's specifications. Check all equipment by a certified mechanic and record a determination of "running in proper condition" prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints.

Mitigation Measures

MM AIR-1 All off-road equipment equal to or greater than 50 horsepower shall meet either United States Environmental Protection Agency (EPA) or California Air Resources Board (ARB) Tier 4 Interim off-road emission standards during all construction activities. The project applicant shall submit a construction management plan to the Director of Planning, Building and Code Enforcement or the Director's designee for review and approval prior to issuance of any grading and building permits.

The construction management plan shall demonstrate that the off-road equipment used on-site to construct the project would comply with Tier 4 Interim off-road emission standards. Off-road equipment descriptions and information included in the construction management plan may include but are not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number.

1.3.2 - Greenhouse Gas Emissions

No mitigation required.

1.3.3 - Energy

No mitigation required.

SECTION 2: AIR QUALITY

This section describes existing air quality conditions regionally and locally as well as the relevant regulatory framework. This section also evaluates the possible impacts related to air quality that could result from implementation of the proposed project. Information included in this section is based on project-specific air quality modeling results utilizing California Emissions Estimator Model (CalEEMod) Version 2022.1.1.24, the American Meteorological Society/United States Environmental Protection Agency (EPA) AERMOD air dispersion model (Version 23132), and the California Air Resources Board (ARB) Hot Spots Analysis and Reporting Program Version 2 (HARP2, dated 22118). Complete modeling output is provided in Appendix A.

2.1 - Environmental Setting

The proposed project site is located within the San Francisco Bay Area Air Basin (SFBAAB), which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern portion of Sonoma, and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as meteorology, terrain, and temperature, in addition to the presence of existing air pollution sources and ambient conditions. These factors, along with applicable regulations aimed at reducing air pollution, are discussed below.

2.1.1 - Existing Air Quality Conditions and Air Pollution Formation

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distorts normal wind flow patterns and induces significant variations of air flow, mixing, and temperatures among subregions. These natural conditions strongly influence the formation of air pollution. Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature inversions interact with the physical features of the landscape to determine the movement and dispersal of air pollutant emissions and, consequently, their effect on air quality.

Air Pollutant Emissions

Although air pollution potential is strongly influenced by climate and topography, the air pollution that occurs in a location also depends on the amount of air pollutant emissions in the surrounding area or transported from more distance places. Air pollutant emissions generally are highest in areas that have high population densities, high motor vehicle use, and/or industrialization. These contaminants, created by photochemical processes in the atmosphere, such as ozone, may result in high concentrations many miles downwind from the sources of their precursor chemicals.

Pollution sources are plentiful and complex in the Santa Clara Valley, where the proposed project is located, and has a high concentration of industry at the northern end in the Silicon Valley. Some of these industries are sources of air toxics as well as criteria air pollutants. In addition, Santa Clara Valley's large population and many work-site destinations generate some of the highest mobile source emissions of any subregion in the SFBAAB.

Santa Clara Valley Climatological Subregion

All urbanized areas of the SFBAAB are included in one of 11 climatological subregions. These subregions experience varying climatological and topographic conditions, as well as major types of air pollutant sources, resulting in variations in air pollution.

The proposed project is located at the western edge of the Santa Clara Valley climatological subregion. Temperatures are warm on summer days and cool on summer nights, and winter temperatures are fairly mild. Further inland, where the moderating effect of the Bay is not as strong, temperatures extremes are greater.

Winds in the valley are greatly influenced by terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. Wind speeds are greatest in the spring and summer and weakest in the fall and winter. Nighttime and early morning hours frequently have calm winds in all seasons, while summer afternoons and evenings are quite breezy. Strong winds are rare, associated mostly with the occasional winter storm.

The air pollution potential of the Santa Clara Valley is high. High summer temperatures, stable air and mountains surrounding the valley combine to promote ozone formation. In addition to the many local sources of air pollution, ozone precursors from San Francisco, San Mateo, and Alameda counties are carried by prevailing winds to the Santa Clara Valley. The valley tends to channel pollutants to the southeast. In addition, on summer days with low level inversions, ozone can be recirculated by southerly drainage flows in the late evening and early morning and by the prevailing northwesterlies in the afternoon. A similar recirculation pattern occurs in the winter, affecting levels of carbon monoxide and particulate matter. This movement of the air up and down the valley increases the impact of the pollutants significantly.

2.1.2 - Existing Ambient Air Quality: Criteria Air Pollutants

The ARB and the EPA currently focus on the following air pollutants, known as "criteria air pollutants," as indicators of ambient air quality: ozone, particulate matter, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), and lead. The attainment status of the SFBAAB for criteria air pollutants, and sources and health effects, are summarized in Table 1.

Ozone

Ozone, or smog, is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_X) in the presence of sunlight. Ozone formation is greatest on warm, windless, sunny days. The main sources of NO_X and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines); the evaporation of solvents, paints, and fuels; and biogenic sources. Automobiles are the single largest source of ozone precursors in the SFBAAB. Ozone levels usually build up during the day and peak in the afternoon hours.

Particulate Matter

Particulate matter refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. $PM_{2.5}$ includes a subgroup of finer particles that have an aerodynamic diameter of 2.5 micrometers or less. Some particulate matter, such as pollen, is naturally occurring. In the SFBAAB most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Extended exposure to particulate matter can increase the risk of chronic respiratory disease.

Nitrogen Dioxide

NO_2 is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, nitrogen dioxide can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels.

Carbon Monoxide

CO is an odorless, colorless gas. It is formed by the incomplete combustion of fuels. The single largest source of CO in the SFBAAB is motor vehicles. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds. New findings indicate that CO emissions per mile are lowest at about 45 miles per hour (mph) for the average light-duty motor vehicle and begin to increase again at higher speeds

Sulfur Dioxide

SO_2 is a colorless acid gas with a pungent odor. It has potential to damage materials and it can have health effects at high concentrations. It is produced by the combustion of sulfur containing fuels, such as oil, coal, and diesel. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Table 1 shows a summary of ambient air quality standards, their sources and health effects.

Table 1: Ambient Air Quality Standards and Health Effects

Air Pollutant	Averaging Time	California Standard	Federal Standard	Most Relevant Effects from Pollutant Exposure
Ozone	1 Hour	0.09 ppm	—	

Air Pollutant	Averaging Time	California Standard	Federal Standard	Most Relevant Effects from Pollutant Exposure
	8 Hours	0.070 ppm	0.070 ppm	• Respiratory symptoms • Worsening of lung disease leading to premature death • Damage to lung tissue
CO (carbon monoxide)	1 Hour	20 ppm	35 ppm	• Ranges depend on exposure: slight headaches; nausea; chest pain and other aspects of coronary heart disease impairment of central nervous system functions; possible increased risk to fetuses; death.
	8 Hours	9.0 ppm	9 ppm	
NO_2 (nitrogen dioxide)	1 Hour	0.18 ppm	0.100 ppm	• Lung irritation. • Intensified allergic responses.
	Annual	0.030 ppm	0.053 ppm	
SO_2 (sulfur dioxide)	1 Hour	0.25 ppm	0.075 ppm	• Worsening of asthma: increased symptoms, increased medication. • Impaired mental functioning in children, and emergency room visits.
	3 Hours	—	0.5 ppm	
	24 Hours	0.04 ppm	0.14 (for certain areas)	
	Annual	—	0.030 ppm (for certain areas)	
Particulate matter (PM_{10})	24 hours	50 µg/m^3	150 µg /m^3	• Premature death • Hospitalization for worsening of cardiovascular disease • Hospitalization for respiratory disease • Asthma-related emergency room visits • Increased symptoms, increased inhaler usage • Premature death and hospitalization, primarily for worsening of respiratory disease • Reduced visibility and material soiling
	Mean	20 µg/m^3	—	
Particulate matter ($PM_{2.5}$)	24 Hours	—	35 µg/m^3	
	Annual	12 µg/m^3	9 µg/m^3	
Visibility-reducing particles	8 Hours	—		
Sulfates	24 Hours	25 µg/m^3	—	• Hospitalization for respiratory disease • Asthma-related emergency room visits • Increased symptoms, increased inhaler usage
Lead	30 days	1.5 µg/m^3	—	• Impaired mental functioning in children
	Quarter	—	1.5 µg/m^3	

Air Pollutant	Averaging Time	California Standard	Federal Standard	Most Relevant Effects from Pollutant Exposure
	Rolling 3-month average	—	0.15 µg/m^3	• Learning disabilities in children • Brain and kidney damage
Vinyl chloride	24 Hours	0.01 ppm	—	• Central nervous system effects, such as dizziness, drowsiness and headaches • Long-term exposure: liver damage and liver cancer
Hydrogen sulfide	1 Hour	0.03 ppm	—	• Nuisance odor (rotten egg smell) • At high concentrations: headaches and breathing difficulties

Notes:
µg/m^3 = micrograms per cubic meter
ppm = parts per million
The federal standards are promulgated by the United States Environmental Protection Agency. The California standards are promulgated by the California Air Resources Board.

Monitoring Data

The BAAQMD operates a regional air quality monitoring network that regularly measures the concentrations of the five major criteria air pollutants throughout the SFBAAB.[1] The air monitoring data define the nature and severity of pollution in the SFBAAB, determine attainment status with National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards CAAQS, identify pollution trends, and validate air quality models and emission inventories. Published air monitoring data can be reviewed in Appendix A.

Emissions Inventory

The BAAQMD estimates emissions of criteria air pollutants from approximately 900 source categories.[2] The estimates are based on BAAQMD permit information for stationary sources (e.g., manufacturing industries, refineries, dry-cleaning operations), plus more generalized estimates for area sources (e.g., space heating, landscaping activities, use of consumer products) and mobile sources (e.g., trains, ships and planes, as well as on-road and off-road motor vehicles). The emission inventories are used to account for emissions over time and provide direction for air quality planning and policy formulation to attain clean air goals.

SFBAAB Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded, based on the aforementioned monitoring data, as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive

[1] California Air Resources Board (ARB). 2024. iADAM: Air Quality Data Statistics. Website: https://www.arb.ca.gov/adam/. Accessed September 30, 2024.
[2] California Air Resources Board. (ARB) 2024. Criteria Pollutant Emission Inventory Data. EPA National Ambient Air Quality Standards and Criteria Pollutants. Website: https://ww2.arb.ca.gov/criteria-pollutant-emission-inventory-data. Accessed September 24, 2024.

attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

The current attainment designations for the Air Basin are shown in Table 2. Currently in the SFBAAB, 8-hour average ozone (both State and national), 1-hour average ozone (State), annual arithmetic mean PM_{10} (State), 24-hour average PM_{10} (State), annual arithmetic mean $PM_{2.5}$ (State), and 24-hour average $PM_{2.5}$ (national) are still in nonattainment status.

Table 2: San Francisco Bay Area Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Nonattainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Hydrogen Sulfates	Unclassified	N/A
Visibility-reducing Particles	Unclassified	N/A
Lead	N/A	Attainment

Notes:
CO = carbon monoxide
NO_2 = nitrogen dioxide
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
SO_2 = sulfur dioxide

Source: Bay Area Air Quality Management District (BAAQMD). 2017. Air Quality Standards and Attainment Status. January. Website: https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status#:~:text=%E2%80%9CAttainment%E2%80%9D%20status%20for%20a%20pollutant%20means%20that%20the,ensures%20that%20these%20standards%20are%20met%20and%20maintained. Accessed November 15, 2024.

2.1.3 - Existing Ambient Air Quality: Toxic Air Contaminants

In addition to criteria air pollutants list above, another group of pollutants, commonly referred to as TACs or Hazardous Air Pollutants (HAPs), result in an increase in mortality, serious illness, or a present or potential hazard to human health. Health effects of TACs may include cancer, birth defects, immune system damage, and neurological damage. In addition, many TACs can be toxic at very low concentrations. For some chemicals such as carcinogens, there are no thresholds below which exposure can be considered risk-free. ARB identifies over 200 compounds as TACs (termed as HAPs by the EPA).

Toxic Air Contaminants: Sources and Health Effects

Industrial facilities and mobile sources such as cars, trucks, trains, and ships are significant sources of TACs. Other sources of TACs include gasoline stations and backup generators (commonly required in many commercial and residential buildings). More recently, diesel particulate matter (DPM) was identified as a TAC by the ARB. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. According to BAAQMD, mobile source emissions of DPM, benzene, and 1,3-butadiene represent a substantial portion of the ambient background risk from TACs in the SFBAAB.

Several studies indicate that DPM poses the greatest health risk among the TACs. A 10-year research program demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

2.1.4 - Existing Ambient Air Quality: Odors and Dust

Other air quality issues of concern in the SFBAAB include nuisance impacts of odors and dust. Objectionable odors may be associated with a variety of pollutants. Common sources of odors include wastewater treatment plants, landfills, composting facilities, refineries, and chemical plants. Similarly, nuisance dust may be generated by a variety of sources, including quarries, agriculture, grading, construction, and roads. Odors rarely have direct health effects among the public. Each year the BAAQMD receives thousands of citizen complaints about objectionable odors. Dust emissions can contribute to increased ambient concentrations of PM_{10} and can also contribute to reduced visibility and soiling of exposed surfaces.

2.2 - Regulatory Framework

Air quality with respect to criteria air pollutants and TACs within the SFBAAB is regulated by such agencies as BAAQMD, ARB, and EPA, along with local government agencies. Each of these agencies develops rules, regulations, policies, and/or goals to attain the goals or directives imposed through legislation. Although the EPA regulations may not be superseded, both State and local regulations may be more stringent.

Federal Air Quality Regulations

The EPA is the governing body responsible for regulating air pollution in the United States and setting nationwide air quality and emissions standards. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (Clean Air Act), which was enacted in 1963 and amended in 1970, 1977, and 1990.

The Clean Air Act required the EPA to establish primary and secondary NAAQS, which are available at https://www.epa.gov/criteria-air-pollutants/naaqs-table. The Clean Air Act also requires each state

to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The Clean Air Act Amendments of 1990 requires states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA has responsibility to review all state SIPs to determine conformation to the mandates of the Clean Air Act and determine whether implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

In addition, the EPA issues federal emissions standards for new motor vehicles and nonroad engines, national emissions standards for categories of new industrial equipment (e.g., power plants, industrial boilers, cement manufacturing, secondary lead smelting), and technical and policy guidance for SIPs. In 2014, the EPA issued standards commonly known as Tier 3, which consider the vehicle and its fuel as an integrated system, setting new vehicle emissions standards and a new gasoline sulfur standard beginning in 2017. The vehicle emissions standards will reduce both tailpipe and evaporative emissions from passenger cars, light-duty trucks, medium-duty passenger vehicles, and some heavy-duty vehicles. The gasoline sulfur standard will enable more stringent vehicle emissions standards and will make emissions control systems more effective. The standards will reduce atmospheric levels of ozone, fine particles, nitrogen dioxide, and toxic pollution.[3]

It is important to understand that TACs are not considered criteria air pollutants and thus are not specifically addressed through the setting of ambient air quality standards. Instead, the EPA regulates TACs (known by the EPA as HAPs) through statutes and regulations that generally require the use of Maximum Available Control Technology (MACT) or Best Available Control Technology (BACT) to limit emissions from large industrial facilities. Every 8 years after setting the MACT standards, the Clean Air Act also requires EPA to review and revise the standards, if necessary, to account for improvements in air pollution controls and/or prevention.

State Air Quality Regulations

The ARB is the Statewide governing body which focuses on California's unique air quality challenges by setting the State's own, stricter, air pollutant emissions standards for a range of Statewide pollution sources, including vehicles, fuels, on- and off-road equipment, and consumer products. ARB implements the California Clean Air Act (CCAA), which was adopted in 1988 and developed to address air quality concerns not adequately addressed by the federal Clean Air Act. The CCAA requires that all air districts in the State endeavor to achieve and maintain the CAAQS by the earliest practicable date. The CCAA specifies that air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources and provides air districts with authority to regulate indirect sources. The CAAQS set standards for 10 air pollutants; the six federal

[3] United States Environmental Protection Agency (EPA). 2024. Regulatory and Guidance Information by Topic: Air. Website: https://www.epa.gov/regulatory-information-topic/regulatory-and-guidance-information-topic-air. Accessed November 15, 2024.

criteria pollutants listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

The ARB is responsible for Statewide pollution sources and produces a major part of the SIP, including addressing transport of pollutants. Local air districts are still relied upon to provide additional strategies for sources under their jurisdiction. The ARB combines this data and submits the completed SIP to EPA. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts) and updating area designations and maps.

ARB is responsible for rulemakings to adopt and amend specific regulations to reduce emissions from mobile sources such as cars, trucks, buses, on- and off-road equipment, fuels, harbor craft, locomotives, ocean-going vessels at berth, and motorcycles, as well as consumer products and select stationary sources, including gas stations. These wide-ranging air quality regulations address all major sources of smog-forming air pollution (and other forms of air pollution). As a result, cars today are 99 percent cleaner than in the 1970s, resulting in less pollution overall, shorter hospital stays, and fewer days missed from school and work due to respiratory and cardiopulmonary diseases.[4]

In addition to regulating pollutants defined in the CAAQs, California has a comprehensive and effective air toxics program to control TAC emissions and exposure. Several pieces of legislation form the basis for ARB to identify and control air toxics from a multitude of sources, inform the public of significant toxic exposures, and provide ways to reduce risks from these exposures. The key programs outlined by legislative mandates include the Toxic Air Contaminant Identification and Control Program (Assembly Bill [AB] 1807), the Air Toxics Hot Spots Information and Assessment Act (AB 2588), the Children's Environmental Health Protection Act, and the Community Air Protection Program. ARB has identified more than 200 toxic air pollutants and has adopted and implemented 25 ATCMs. Some of the air toxics that have been identified and controlled include benzene in gasoline, hexavalent chromium from chrome platers, perchloroethylene from dry cleaners, and diesel exhaust from cars and trucks. The Community Air Protection Program (AB 617) was signed into law to reduce exposure in communities experiencing high cumulative exposure to air pollution including air toxic chemicals, many of which occur in disadvantaged communities.[5]

ARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources including transit buses and off-road diesel equipment (e.g., tractors, generators). These standards are encompassed in the Airborne Toxic Control Measures (ATCMs) aimed at reducing TACs from mobile sources (including on-road and off-road vehicles) and stationary sources. ATCMs that are relevant and applicable to the proposed project are listed below:[6]

[4] California Air Resources Board (ARB). 2024. The California Air Resources Board: About. Website: https://ww2.arb.ca.gov/about. Accessed November 15, 2024.

[5] California Air Resources Board (ARB). 2024. Air Toxics Program. Website: https://ww2.arb.ca.gov/our-work/programs/air-toxics-program. Accessed June 12, 2024.

[6] California Air Resources Board (ARB). 2024. Airborne Toxic control Measures. Website: https://ww2.arb.ca.gov/resources/documents/airborne-toxic-control-measures. Accessed November 15, 2024.

- Diesel PM Control Measure for On-Road Heavy-Duty Diesel-Fueled Residential and Commercial Solid Waste Collection Vehicles (13 California Code of Regulations [CCR] §§ 2020, 2021)
- ATCM for Diesel PM from Portable Engines Rated at 50 Horsepower and Greater (17 CCR § 93116)
- ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling (13 CCR § 2485)
- Asbestos ATCM for Construction, Grading, Quarrying and Surfacing Mining Operations; (17 CCR § 93105)
- ATCM to Reduce Particulate Emissions from Diesel-Fueled Engines – Standards for Nonvehicular Diesel Fuel (17 CCR § 93114)

As a result of these actions, mobile source emissions of TACs (benzene, 1,3-butadiene, DPM) and stationary sources of TACs have been reduced significantly since 1990, leading to a reduction of ambient cancer risk in California of about 80–85 percent.

Regional Air Quality Regulations

The BAAQMD is one of 35 local air pollution control districts created by the California Legislature with authority to regulate air pollutant emissions from businesses and stationary facilities, ranging from oil refineries to auto body shops and dry cleaners. The BAAQMD is the primary agency responsible for ensuring that the Clean Air Act and CAAQS are attained and maintained in the SFBAAB. The air quality strategy employed by BAAQMD includes a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The BAAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements program and regulations required by the Clean Air Act and CCAA.

The BAAQMD Board of Directors adopted CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans (BAAQMD CEQA Thresholds) in 2022. The BAAQMD CEQA Thresholds (and associated guidance) are intended to assist lead agencies in evaluating air quality and climate impacts from proposed land use projects in the SFBAAB during the environmental review process.

The BAAQMD has regulated TACs since the 1980s. At the local level, air pollution control or management districts may adopt and enforce ARB's control measures. Under BAAQMD Regulation 2-1 (General Permit Requirements), Regulation 2-2 (New Source Review), and Regulation 2-5 (New Source Review), all nonexempt sources that possess the potential to emit TACs are required to obtain permits from BAAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and ATCMs. The BAAQMD limits emissions and public exposure to TACs through a number of programs. The BAAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. In addition, the BAAQMD has adopted Regulation 11 Rules 2 and 14, which address asbestos demolition, renovation, manufacturing, and standards for asbestos-containing serpentine.

The BAAQMD adopted Regulation 11, Rule 18 (Reduction of Risk from Air Toxic Emissions at Existing Facilities) in 2017, which requires any facility with health risks above risk action thresholds to make reasonable reductions in those health risks.

AB 617 required all air districts around the State to identify and select communities that suffer a high cumulative exposure burden from air pollution. In the Bay Area, these communities include all the Community Air Risk Evaluation (CARE) Areas, as well as areas with large sources of air pollution, areas that have been identified via Statewide screening tools as having pollution and/or health burden vulnerability, and areas that have low life expectancy. The proposed project is not located within a CARE or AB 617-identified community.

Local Air Quality Regulations

The City's General Plan includes policies to avoid or mitigate impacts resulting from development projects with the City. The following policies are specific to air quality and apply to the proposed project.

Envision San José 2040 General Plan

Policy MS-10.1 Assess projected air emissions from new development in conformance with the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines and relative to State and federal standards. Identify and implement air emissions reduction measures.

Policy MS-10.2 Consider the cumulative air quality impacts from proposed developments for proposed land use designation changes and new development, consistent with the region's Clean Air Plan and State law.

Policy MS-11.1 Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.

Policy MS-11.2 For projects that emit toxic air contaminants, require project proponents to prepare Health Risk Assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, require new projects (such as, but not limited to, industrial, manufacturing, and processing facilities) that are sources of TACs to be located an adequate distance from residential areas and other sensitive receptors.

Policy MS-11.3 Review projects generating significant heavy-duty truck traffic to designate truck routes that minimize exposure of sensitive receptors to TACs and particulate matter.

Policy MS-11.4 Encourage the installation of air filtration, to be installed at existing schools, residences, and other sensitive receptor uses adversely affected by pollution sources.

Policy MS-11.5 Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.

Policy MS-12.2 Require new residential development projects and projects categorized as sensitive receptors to be located an adequate distance from facilities that are existing and potential sources of odor. An adequate separate distance will be determined based upon the type, size and operations of the facility.

Policy MS-13.1 Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At a minimum, conditions shall conform to construction mitigation measures recommended in the current BAAQMD CEQA Guidelines for the relevant project size and type.

Policy MS-13.2 Construction and/or demolition projects that have the potential to disturb asbestos (from soil or building material) shall comply with all the requirements of the California Air Resources Board Airborne Toxic Control Measures (ATCMs) for Construction, Grading, Quarrying, and Surface Mining Operations.

City of San José Standard Permit Conditions

The City of San José has Standard Permit Conditions which would apply to the proposed project. Unless otherwise discussed in this analysis, the proposed project is assumed to incorporate the following Standard Permit Condition:

AQ No. 1 The following measures shall be implemented during all phases of construction to control dust and exhaust at the project site:

- Water active construction areas at least twice daily or as often as needed to control dust emissions.
- Cover trucks hauling soil, sand, and other loose materials and/or ensure that all trucks hauling such materials maintain at least two feet of freeboard.
- Remove visible mud or dirt trackout onto adjacent public roads using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Pave new or improved roadways, driveways, and sidewalks as soon as possible.
- Lay building pads as soon as possible after grading unless seeding or soil binders are used.
- Replant vegetation in disturbed areas as quickly as possible.

- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Minimize idling times either by shutting off equipment when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure [ATCM], Title 13, Section 2485 of the California Code of Regulations). Provide clear signage for construction workers at all access points.
- Maintain and property tune construction equipment in accordance with manufacturer's specifications. Check all equipment by a certified mechanic and record a determination of "running in proper condition" prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints.

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SECTION 3: GLOBAL CLIMATE CHANGE

This section describes existing climate conditions as well as the relevant regulatory framework. The "Environmental Setting" provides a description of greenhouse gases and the current state of the climate. The "Regulatory Framework" provides a description of relevant federal, State and local regulatory policies that serve to reduce GHG emissions and are applicable to the proposed project.

3.1 - Environmental Setting

Earth's temperature is rising,[7] and although the global climate has varied over the long-range time scale, there is strong scientific consensus that the rapid heating in recent decades is both unusual and caused by emissions of GHGs from human activities such as the burning of fossil fuels, including coal and oil.[8] Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Prominent GHGs contributing to the greenhouse effect are CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), chlorofluorocarbons, and sulfur hexafluoride (SF_6). Atmospheric concentrations of CO_2, the most prominent GHG, have been increasing rapidly in recent decades, from approximately 280 parts per million (ppm) before the start of the Industrial Revolution in the 1760s to more than 400 ppm as of 2013.[9] According to the United Nations Intergovernmental Panel on Climate Change (IPCC), it is *extremely unlikely* that global climate change of the past 50 years can be explained without the contribution from human activities.

As the concentration of these gases continues to increase in the atmosphere, Earth's temperature has increased by about 1.2 to 1.4°F (degrees Fahrenheit) since 1900.[10] Even if GHG emissions could be reduced to zero overnight, global temperatures will continue to rise in future years due to the build-up of GHGs that have already accumulated in the atmosphere and the oceans. As future emissions increase the atmospheric concentrations of CO_2 and other GHGs, the impacts of the warming greenhouse effect are projected to steadily worsen.

Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough GHG emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact. Therefore, this section discusses the proposed project's contribution to the cumulative GHG impact.

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7 National Centers for Environmental Information, National Oceanic and Atmospheric Administration (NOAA). 2024. Global Time Series. Website: https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/global/time-series. Accessed November 15, 2024.

8 K. Myers et al. "Consensus revisited: quantifying scientific agreement on climate change and climate expertise among Earth scientists 10 years later." Environmental Research Letters, Vol.16 No. 10, 104030 (20 October 2021). DOI: 10.1088/1748-9326/ac2774.

9 Global Monitoring Library, National Oceanic and Atmospheric Administration (NOAA). 2024. Trends in CO_2, CH_4, N_2O, SF_6. Website: https://gml.noaa.gov/ccgg/trends/. Accessed November 15, 2024.

10 National Aeronautics and Space Administration (NASA). 2024. World of Change: Global Temperatures. Website: https://earthobservatory.nasa.gov/world-of-change/global-temperatures. Accessed November 15, 2024.

3.1.1 - Greenhouse Gases

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of GHGs that contribute to global warming or global climate change have a broader, global impact. Global warming is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of Earth's atmosphere. The principal GHGs contributing to global warming are CO_2, CH_4, N_2O, and fluorinated gases. The primary GHGs of concern are summarized in Table 3. These gases allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back out into space.

Table 3: Description of Greenhouse Gases of Concern

Greenhouse Gas	Description and Sources and (Sinks)	Atmospheric Lifetime (years)	Percent of US Emissions
Carbon Dioxide (CO_2)	• Fossil fuel combustion • Forest clearing • Cement production • (Plants)	50–200	79.7
Methane (CH_4)	• livestock • landfills • leaks from oil and natural gas production	12	11.1
Nitrous Oxide (N_2O)	• Fertilizers • Manure • Fossil fuel combustion • Nylon production • Semiconductor Manufacturing • Wastewater treatment	114	6.1
Hydrofluorocarbons (HFCs)	• automobile air conditioners • refrigerants	1–50,000	3.1
Perfluorocarbons (PFCs)	• primary aluminum production • semiconductor manufacturing	10,000–50,000	
Sulfur hexafluoride (SF_6)	• electrical power transmission equipment • magnesium industry • semiconductor manufacturing	3,200	
Nitrogen trifluoride (NF_3)	• electronics manufacture for semiconductors and liquid crystal displays	740	
Source: United States Environmental Protection Agency (EPA). Overview of Greenhouse Gases. November 15, 2024. Website: https://www.epa.gov/ghgemissions/overview-greenhouse-gases. Accessed November 15, 2024.			

California Greenhouse Gas Emissions Inventory

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors. Emissions of CO_2 are byproducts of fossil fuel combustion. Methane, a highly potent GHG, results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution, respectively.

As the second largest emitter of GHG emissions in the United States, California contributes a large quantity (381.3 million metric tons [MMT] carbon dioxide equivalent [CO_2e] in 2021) of GHG emissions to the atmosphere.[11] Anthropogenic CO_2 are largely byproducts of fossil fuel combustion and are attributable to transportation, industry/ manufacturing, electricity generation, natural gas consumption, and agriculture processes.

Statewide Climate Impacts

The impacts of global climate change—including substantially higher temperatures, more extreme weather, increased wildfire events and sea level rise–are already being experienced in California today. As reported by the California Natural Resources Agency in 2009, despite annual variations in weather patterns, California has seen a trend of increased average temperatures, more extreme hot days, fewer cold nights, longer growing seasons, less winter snow, and earlier snowmelt and rainwater runoff. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and a larger proportion of total precipitation is falling as rain instead of snow. Sea level rose by as much as 7 inches along the California coast over the last century, leading to increased erosion and adding pressure to the State's infrastructure, water supplies, and natural resources. Within the past decade, California has experienced some of the most extreme climate events in its recorded history–a severe 4-year drought, a dramatic reduction in Sierra Nevada winter snowpack, five of the State's 20 largest forest fires since 1932, and 2 years back-to-back of the hottest recorded average temperatures.

Local and Regional Climate Impacts

The San Francisco Bay Area has experienced similar trends as California. Averaged across the region, mean annual temperature has increased nearly 1°F in the last 30 years over the previous 30-year period.

These observed trends in the San Francisco Bay Area are anticipated to continue in the future:

- **Temperatures are projected to rise substantially, and more extreme hot days will occur.** By 2050, Bay Area annual average temperatures are projected to increase by an additional 2.7°F in the absence of actions to reduce GHG emissions. The number of very hot days and severe heat waves are projected to more than double across the region by midcentury.

[11] California Air Resources Board (ARB). 2021. Current California GHG Emission Inventory Data. Website: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed November 15, 2024.

- **More precipitation extremes, more rain, and less snow.** The Sierra Nevada region has experienced some of the wettest and driest years in more than 100 years of record keeping. The Sierra Nevada is also the source of much of the Bay Area's water supply, which is typically stored as snow melt rather than water, posing challenges to water storage and distribution, particularly during the longer fire seasons.
- **Sea level rise.** Sea level at the Golden Gate Bridge has risen 8 inches over the last 100 years, creating implications on coastal flooding, erosion, and related damages.
- **Increased frequency of wildfires.** Higher temperatures, higher winds and drought are fueling wildfires across the Bay Area and California, while also lengthening the wildfire season. Wildfires can cause dramatic short-term spikes in air pollution levels and emit massive quantities of CO_2 and black carbon (a short-lived GHG), along with other pollutants.
- **Exacerbation of air quality problems and impacts on public health.** The number of days with high ozone levels correlates closely with the years when the Bay Area experiences more extreme-heat days. Higher ozone levels may increase negative health impacts, such as acute respiratory symptoms, lost school days, and even premature death. In addition, heat-related deaths and illnesses are anticipated to rise and urban heat island impacts will grow. Higher temperatures will increase vector-borne diseases and produce more plant pollen and lengthen allergy seasons.
- **Higher temperatures exacerbate pollution from cars and industry.** Higher temperatures increase the use of air conditioners in buildings and cars, which in turn requires more combustion of fossil fuels, resulting in increased levels of ozone precursors, particulates, TACs, and GHGs.

While the impacts are felt locally, climate change is a global issue because GHGs are global pollutants. Pollutants with localized air quality effects, including criteria air pollutants and TACs, have relatively short atmospheric lifetimes (approximately 1 day) and generally do not travel greatly beyond their point of emission. By contrast, GHGs have long atmospheric lifetimes, ranging from several years to several thousand years. GHGs persist in the atmosphere for a long enough time to be dispersed around the globe, cumulatively combining to cause a global climate effect.

3.2 - Regulatory Framework

The following section describes federal, State, regional, and local regulations and policies that are specific to reducing GHG emissions and are applicable to the proposed project.

3.2.1 - Federal Regulations for GHGs

The EPA is the governing body responsible for regulating air pollution in the United States and setting nationwide air quality and emissions standards. The EPA adopts and implements several regulations to reduce GHG emissions as well. These include GHG emission reduction standards for passenger cars and light-duty trucks, heavy-duty trucks (including buses), commercial aircraft and large business jets, heavy equipment (with spark-ignition engines and compression-ignition diesel engines), locomotives, marine vessels, recreational vehicles, and small equipment/tools.

California has implemented more stringent GHG emissions reduction regulations on the same sources listed above (excepting commercial aircraft and large business jets). Therefore, those regulations and their impact are discussed in greater detail below.

3.2.2 - State Regulations for GHGs

California has taken several legislative steps to reduce Statewide GHG emissions and is internationally known for its leadership on action to address climate change. In 2006, the California Legislature passed AB 32, which created a comprehensive, multi-year program to reduce GHG emissions in California and required the State (by law) to reduce GHG emissions to 1990 levels by 2020. The Legislature built upon this law by passing Senate Bill (SB) 32, which requires the State to reduce GHG emissions 40 percent below 1990 levels by 2030, and later passed AB 1279 which requires the State to achieve net-zero GHG emissions by 2045 and net-negative emissions thereafter. To achieve these State-mandated emissions reduction targets, a document known as the Scoping Plan was required to be created by the ARB beginning in 2007 and be updated at least once every 5 years to "ensure the GHG emissions reduction activities to be adopted and implemented by the state board are complementary, nonduplicative, and can be implemented in an efficient and cost-effective manner." The Scoping Plan outlines strategies across nearly all levels of California's government and economy and defines—at a granular level—the regulatory actions needed to reduce GHG emissions from all economic sectors to meet the targets.

ARB is the Statewide governing body which focuses on California's unique air quality challenges by setting the State's own, stricter, GHG and air pollutant emissions standards for a range of Statewide pollution sources including vehicles, fuels, on- and off-road equipment, and consumer products. ARB also manages the Cap-and-Trade Program to achieve GHG emission reductions from large industrial facilities. ARB has pioneered a range of approaches in California that have set the standard for effective air and climate programs for the nation and the world. ARB regulations, based on extensive research and established science, have driven innovation, leading to significant technological developments such as the production of low- and zero-emission cars and trucks and cleaner fuels. As stated, ARB is tasked by the Legislature with updating the Scoping Plan, which was most recently adopted in 2022 (2022 Scoping Plan), to ensure the State carries out actions to meet the 2030 and 2045 GHG emissions reduction targets.

Other State agencies responsible for regulating GHGs include:

- **California Energy Commission**: the State's energy policy and planning agency, responsible for climate change related programs including energy efficiency and leading the State to a 100 percent clean energy reality. The California Energy Commission (CEC) mandates building energy efficiency standards (in new and existing buildings) and manages the Renewables Portfolio Standard (RPS).
- **California Department of Resources Recycling and Recovery**: California's recycling and waste management agency, responsible for implementation of State climate policies including landfill methane emissions reduction, waste-to-energy production, and composting requirements. The California Department of Resources Recycling and Recover (CalRecycle)

implements food and yard waste recycling regulations, including mandates to cut organic waste disposal 75 percent by 2025.

- **California Governor's Office of Planning and Research:** the California Governor's Office of Planning and Research (OPR) is California's long-range planning agency responsible for implementing CEQA review and conducting Statewide research on all climate change policies and impacts.

As a result of these actions, California reached its 2020 GHG emissions reduction target of reducing GHG emissions back to 1990 levels 4 years early and is on track to meet the 2030 GHG reduction target. Below is a summary of State regulations that are applicable to the proposed project and will serve to reduce GHG emissions now and in the future to ensure California stays on the path to meeting the State-mandated 2030 and 2045 targets:

- **Advanced Clean Cars II (ACC II)**: Designed to reach 100 percent new vehicle Zero-Emission Vehicles (ZEVs) and clean plug-in hybrid-electric vehicles (PHEVs) in California by the 2035 model year.
- **Advanced Clean Fleets**: A manufacturer requirement for 100 percent of sales of medium- and heavy-duty vehicles to be ZEVs by 2036, and fleet requirements to purchase and deploy ZEVs in State and local government fleets, drayage truck operations, and high-priority federal fleets.
- **Advanced Clean Trucks Regulation**: Require fleets to transition to ZEV medium- and heavy-duty vehicles.
- **Small Off-road Engine Regulations**: Transition 100 percent of small off-road spark-ignition engines (at or below 25.5 horsepower and used in non-stationary equipment) to zero-emission by 2035 (where feasible).
- **Low Carbon Fuel Standard**: Increase the availability and use of low carbon fuels, including renewable diesel, biodiesel, renewable, and natural gas by mandating that the fuel carbon intensity in California must achieve a 20 percent reduction by 2030.
- **Renewable Portfolio Standard**: One of California's key programs for advancing renewable energy, it sets continuously escalating renewable energy procurement requirements for the State's load-serving entities. All entities must procure 60 percent of their electricity portfolio from renewable energy resources by 2030.
- **Building Energy Efficiency Standards–Title 24, Part 6 (Energy Code**): contain energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings; the requirements have gradually increased in efficiency and technology over the past decades. The current standard, known as the 2022 Energy Code, builds on California's technology innovations, and includes encouraging heat pumps, requiring electric-ready single-family homes and solar/battery storage standards for various building types. The 2022 Energy Code also strengthens ventilation standards to improve indoor air quality. The next update to the Energy Code will occur in 2024 (known as the 2025 Energy Code) and will apply to newly constructed buildings effective as of January 1, 2026.

- **California Green Building Standards Code–Title 24, Part 11)**: CALGreen is the mandatory green building standards code for the State with the goal of reducing GHG emissions from buildings, including reducing energy and water consumption.

3.2.3 - Regional Regulations for GHGs

The BAAQMD regulates air pollutant emissions from businesses and stationary facilities, ranging from oil refineries to auto body shops and dry cleaners. The BAAQMD is the primary agency responsible for ensuring that the Clean Air Act and CAAQS are attained and maintained in their jurisdiction. The BAAQMD CEQA Thresholds (and associated guidance) are intended to assist lead agencies in evaluating air quality and climate impacts from proposed land use projects in the SFBAAB during the environmental review process.

3.2.4 - Local Regulations for GHGs

City of San José Greenhouse Gas Reduction Strategy

The General Plan includes strategies, policies, and action items that are incorporated in the City's GHG Reduction Strategy (GHGRS) to help reduce GHG emissions. The General Plan's multiple policies and actions have GHG implications, including land use, housing, transportation, water usage, solid waste generation and recycling, and reuse of historic buildings. The City's GHGRS is intended to meet the mandates outlined in the BAAQMD CEQA Guidelines and standards for "qualified plans," as established by the BAAQMD. In addition, the City's Green Vision, as reflected in the City's GHGRS, includes a monitoring component that allows for adaptation and adjustment of City programs and initiatives related to sustainability and associated reductions in GHG emissions.

The GHGRS is intended to meet the mandates outlined in the CEQA Air Quality Guidelines, as well as the BAAQMD requirements for Qualified GHGRS. The City's 2030 GHGRS is a comprehensive update to the City's original GHGRS and reflects the plans, policies, and codes as approved by the City Council. The strategy builds on the General Plan and Climate Smart San José; these plans expanded the City's Green Vision to advance urban sustainability. Leveraging these existing plans and supporting policy and program frameworks, the 2030 GHGRS provides a set of strategies and additional actions for achieving the 2030 target.

The City's GHGRS identifies GHG emissions reduction measures to be implemented by development projects in four categories: built environment and energy, land use and transportation, recycling and waste reduction, and other GHG reduction measures. Some measures are mandatory for all proposed development projects and others are voluntary.

The primary test for consistency with the City's GHGRS is conformance with the General Plan Land Use/Transportation Diagram and supporting policies. Pursuant to CEQA Guidelines, all land use development proposals are required to evaluate consistency with the goals and policies outlined in the City's General Plan designed to reduce GHG emissions, generally through the use of a checklist. Projects consistent with the GHGRS would have a less than significant impact on GHG emissions through 2030 and would not conflict with targets in the currently adopted State of California Climate Change Scoping Plan through 2030.

City of San José Municipal Code

The City of San José Municipal Code (Municipal Code) includes the following regulations that would reduce GHG emissions from future development:

- Green Building Ordinance (Chapter 17.84)
- Water Efficient Landscape Standards for New and Rehabilitated Landscaping (Chapter 15.10)
- Transportation Demand Programs for employers with more than 100 employees (Chapter 11.105)
- Construction and Demolition Diversion Deposit Program (Chapter 9.10)
- Wood-Burning Ordinance (Chapter 9.10)
- All-Electric Ordinance (Chapter 17.845)

City of San José Reach Codes

Beginning in 2019, the City adopted and updates building codes that are more advanced than those required by the State. Known as "reach codes," the requirements apply to any newly constructed building/structure for which an application for a building permit is made on or after July 1, 2024. Currently, the requirements for multi-family housing state "the Source Energy budget must be less than the Source Energy budget calculated for the Standard Design Building by a compliance margin of 6 percent to comply; electrification-ready."[12] The City's Reach Code also requires the following EV requirements for new multi-family developments: 70 percent EV Capable; 20 percent EV Ready; and 10 percent EV supply equipment, and requires at least one Level 2 charging station in common-use parking areas.[13]

[12] Climate Smart San José. San José's Building Reach Code Summary. 2024. Website: https://www.sanjoseca.gov/home/showpublisheddocument/112542/638532753922770000. Accessed October 3, 2024.

[13] City of San José. 2024. San José Reach Code. Website: https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/climate-smart-san-jos/san-jos-reach-code#:~:text=On%20January%2030,%202024,%20Council%20approved%20an%20update%20to%20the. Accessed October 3, 2024.

SECTION 4: ENERGY

4.1 - Environmental Setting

This section describes the existing energy setting in the proposed project area as well as the relevant regulatory framework. This section also evaluates the possible impacts related to energy that could result from the implementation of the proposed project. Information in this section is based on project-specific energy outputs included in Appendix A.

4.1.1 - Existing Setting

The existing setting focuses on regional and local energy consumption, and factors related to the use and availability of energy including infrastructure, capacity, and supply.

Energy Basics

Energy is defined as the ability to do work. There are many forms of energy, including heat, light, motion, electrical, chemical and gravitational. Energy is grouped into two general *types* of energy, including potential (or stored) energy and kinetic (or working) energy. *Sources* of energy are divided into two categories: renewable (such as solar) and nonrenewable (such as coal), and they are used to produce energy such as heat, electricity, or fuels.[14]

Energy Usage

Energy use in an area is generally distributed across five main energy use sectors:

- Transportation sector: includes vehicles that transport people or goods, including cars, trucks, buses, aircraft, boats and ships.
- Industrial sector: includes facilities and equipment used for manufacturing, agriculture, mining and construction.
- Electric power sector: primary business is to generate and sell electricity, and in some cases heat, to the other sectors.
- Residential and commercial sectors: includes homes and apartments, and nonresidential uses (such as schools, retail uses, hotels, warehouses, restaurants, etc.).

Transportation Sector

The proposed project is located in Santa Clara County, which sold an estimated 563 million gallons of gasoline and 42 million gallons of diesel in 2022.[15]

[14] United States Energy Information Administration (EIA). 2024. What Is Energy? Website: https://www.eia.gov/energyexplained/what-is-energy/. Accessed October 14, 2024.
[15] California Energy Commission (CEC). 2023. Annual Retail Fuel Outlet Report Results CEC-A15 Results and Analysis. Website: https://www.energy.ca.gov/media/3874. Accessed October 11, 2024.

Electricity can also be used to power electric and PHEVs directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicles' batteries. Fuel cells are being explored to use electricity generated onboard the vehicle to power electric motors. As of August 2024, California had a reported 153,034 public and shared private electric vehicle chargers. Santa Clara County had a reported 23,665 chargers, the second highest number in the State, after Los Angeles County. This includes 971 Public DC fast chargers, 6088 Public Level 2, and 16145 Shared Private DC fast chargers.[16]

Industrial Sector

The proposed project is residential and therefore the industrial sector is not relevant. However, the proposed project does involve the construction of buildings and associated hardscape and landscaping, and while estimates of construction fuel are not available as a subcategory of the industrial sector, construction fuel is known to be a significant contributor to industrial fuel consumption. The construction industry is major user of diesel fuel as it is utilized almost exclusively in off-road construction equipment. Diesel is the fuel of choice because it has 12 percent more energy per gallon than gasoline and has fuel properties that prolong engine life making it ideal for heavy-duty vehicle applications. Biodiesel was introduced into California in 2000 and renewable diesel was introduced in 2012. Biodiesel is predominantly made from soybean and recycled oils into a unique diesel fuel (it can be blended into transportation fuels but is not a substitute for diesel fuel). Renewable Diesel is predominantly made from animal waste oils and the finished fuel is nearly identical to petroleum-based diesel.[17] However, renewable diesel is a transportation fuel produced from non-petroleum renewable sources—specifically, vegetable oils and animal fats. Its chemical and structural properties are similar to petroleum-derived (conventional) diesel and it can be used as a direct substitute for conventional diesel (up to 100 percent or R100). Blends of renewable diesel and conventional diesel are labeled with an R followed by the percentage (by volume) of the renewable diesel content.[18]

California accounts for nearly all of the biodiesel consumption in the United States,[19] consuming nearly 40,000 barrels of biodiesel in 2022. [20] This is compared to 1 million barrels in 2011 and 28 million barrels in 2021, with the shift largely a result of California's renewable diesel consumption, which grew substantially after the Low Carbon Fuel Standard (LCFS) went into effect in 2011.[21] This increase represented a shift away from traditional diesel, with clean fuels replacing over 50 percent of the diesel used in the State in the first quarter of 2023. [22]

[16] California Energy Commission (CEC). Electric Vehicle Chargers in California. Website: https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/electric. Accessed August 15, 2024.
[17] California Energy Commission (CEC). 2024. Diesel Fuel Data, Facts, and Statistics. Website: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics. Accessed October 21, 2024.
[18] California Air Resources Board (ARB). 2024. Fact Sheet: Renewable Diesel Fuel Requirements, Website: https://ww2.arb.ca.gov/resources/fact-sheets/fact-sheet-renewable-diesel-fuel-requirements. Accessed October 21, 2024.
[19] United States Energy Information Administration (EIA). 2023. Almost all U.S. renewable diesel is consumed in California; most isn't made there, Website: https://www.eia.gov/todayinenergy/detail.php?id=57180#. Accessed November 15, 2024.
[20] United States Energy Information Administration (EIA). 2024, State Profiles and Energy Estimates. Website: https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_use_rd.pdf. Accessed November 15, 2024.
[21] United States Energy Information Administration (EIA). 2023. Almost all U.S. renewable diesel is consumed in California; most isn't made there. Website: https://www.eia.gov/todayinenergy/detail.php?id=57180#. Accessed November 15, 2024.
[22] California Air Resources Board (ARB). 2023. Press Release 23-24, Low Carbon Fuel Standard drives shift away from petroleum. Website: https://ww2.arb.ca.gov/news/first-time-50-california-diesel-fuel-replaced-clean-fuels. Accessed August 23, 2024.

Residential Sector

Residences require energy to power home devices and equipment, including heating and air conditioning. Electricity and natural gas are the most-used energy sources to power homes. Electricity and natural gas are distributed through the various electric load-serving entities (LSEs) in California. These entities include investor-owned utilities (IOUs), publicly owned LSEs, rural electric cooperatives, community choice aggregators, and electric service providers. These providers are often subject to State-level regulations and standards, including RPSs.

Commercial Sector

The proposed project involves the construction of multi-family residences, and there are no commercial uses involved. Therefore, the commercial sector is not relevant to the proposed project.

Electric Power Sector

Electricity

In 2022, Santa Clara County's commercial and residential sectors utilized a total of 17102 million kilowatt hours (kWh) divided into nonresidential usage of 12,852 GWh and residential usage of 4,250 GWh.[23]

Pacific Gas and Electric Company (PG&E) is the electricity provider that offers renewable and carbon-free electricity to businesses and residents in Santa Clara County, California and will serve the proposed project. PG&E offers its customers several different choices with various renewable energy content.

Natural Gas

In 2022, the County's natural gas usage was 424 total millions of therms (190 million therms for nonresidential usage and 234 million therms for residential).[24]

PG&E supplies natural gas in Santa Clara County. The site is currently served by natural gas via pipeline. As previously stated, the proposed project would be all-electric in compliance with the City's Reach Code, and therefore natural gas will not be utilized.

4.2 - Regulatory Framework

Federal energy regulations were first introduced in 1975 with the Energy Policy and Conservation Act of 1975 in response to the 1973-1974 Arab Oil Embargo to improve the average fuel economy of cars and light trucks in the US and improve the US energy independence. Other subsequent federal rules included the Energy Policy Act of 2005 (which introduced numerous energy efficiency standards for appliances building off the existing Energy Star Program) and The Energy Independence and Security Act of 2007 (which strengthened the vehicular fuel economy standards). The purpose of the federal

[23] California Energy Commission (CEC). 2024. Energy Consumption Database, Electricity Consumption by County. Website: https://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed October 21, 2024.

[24] California Energy Commission (CEC). 2024. Energy Consumption Database, Gas Consumption by County. Website: https://ecdms.energy.ca.gov/gasbycounty.aspx. Accessed October 21, 2024.

regulations related to energy are to improve energy efficiency (thereby reducing energy use), reduce energy use, promote renewable energy production, and improve US energy independence.

These regulations set important groundwork and foundation for subsequently promulgated California regulations.

4.2.1 - State

Because federal regulations generally preempt state and local regulations, they set the foundation for subsequent state regulations to build upon. The following describes the regulatory framework as it pertains to the energy usage sectors relevant to the proposed project. These regulations are also intended to increase energy efficiency—thereby reducing overall energy use—and promote renewable energy production and use.

Transportation Sector

California adheres to the federal Corporate Average Fuel Economy standards, but also has several other state programs that influence emissions and fuel efficiency. These regulations include the following:

- Pavley Regulations and Fuel Efficiency Standards (AB 1493)
- Low Emission Standards (Low Emission Vehicle [LEV]) Pro
- ZEV Program
- ARB Phase 2 Greenhouse Standards for Medium and Heavy-Duty Vehicles
- Heavy-Duty I & M Rule

These GHG or air quality regulations aim to reduce emissions of criteria pollutants, air toxics and GHG emissions and at the same time result in decreases in energy and fuel consumption. However, they are not direct energy regulations or policies. Additionally, while these regulations increase energy efficiency and reduce fuel consumption from vehicles, they are typically not directly applicable to land use development projects but apply to either vehicle/engine manufacture or vehicle maintenance and operation.

The proposed project would be subject to these air quality regulations and measures that influence emissions from vehicles. This would include limits on the idling of commercial motor vehicles and construction equipment. The California Code of Regulations Title 13, Section 2485 Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling prohibits diesel-fueled commercial vehicles from idling for more than five minutes at any given location. The primary goal of this regulation is to reduce public health impacts from diesel emissions, but compliance with the measure also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

Finally, while not specifically an energy regulation, the Sustainable Communities and Climate Protection Act of 2008 (SB 375) requires land use projects to meet target reductions of Vehicle Miles Traveled (VMT) to reduce greenhouse emissions. Because VMT is directly related to fuel consumption and because consistency with the targets is determined on an individual

development/project basis, this regulation also serves to reduce energy consumption related to passenger vehicle travel.

Industrial Sector

As previously discussed, land use development projects consume fuel during construction operations (and construction is a subset of the industrial sector, along with manufacturing, mining, and agriculture). Because of energy efficiency requirements, off-road diesel equipment dominates the industry. Provisions in California's In-Use Off-Road Diesel Fleets regulation under CCR Title 13 not only provide protection from air pollution, but promote the use of newer, well-tuned and maintained equipment, and provide regulatory limits on unnecessary idling. These minimize toxic diesel exhaust but at the same time results in energy efficiency, decreased fuel use and avoids wasteful use of energy.

Electric Power Sector

The RPS is a regulation applicable to the energy /utility provider designed to increase the use of renewable energy sources for electricity generation. California's RPS was established by SB 350 and subsequently SB 100 and requires 60 percent of electricity to come from renewable sources by 2030 and 100 percent from zero carbon sources by 2045.

The renewable content of the produced electricity is based on the energy mix, or the combination of different energy sources used to meet energy needs in a particular region. It includes both renewable and nonrenewable sources. For example, a typical energy mix might include coal, natural gas, nuclear, hydroelectric, wind, and solar power.

Under the Power Source Disclosure Program, retail electricity providers are required to annually disclose to their retail consumers the mix of sources used to provide electricity service during the previous calendar year. In those instances where a retail supplier offers consumers more than one electricity portfolio, the retail supplier is to provide information specific to each electricity portfolio offered. This information is provided to consumers in the form of Power Content Labels[25].

Residential and Commercial Sectors

Energy Efficiency in Buildings

California Code of Regulations Title 24 Part 6 (California's Energy Efficiency Standards for Residential and Nonresidential Buildings) was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy-efficient technologies and methods. Energy-efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2022 Building Energy Efficiency Standards went into effect on January 1, 2023.

This update to the building code provides crucial steps in the State's progress toward 100 percent clean carbon neutrality by midcentury. The 2022 Energy Code builds on California's technology

[25] California Energy Commission (CEC). 2024. Power Content Label. Website: https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure-program/power-content-label. Accessed October 21, 2024.

innovations, encouraging energy-efficient approaches to encourage building decarbonization, emphasizing on heat pumps for space heating and water heating. This set of Energy Codes extends the benefits of photovoltaic and battery storage systems and other demand flexible technology to work in combinations with heat pumps to enable California buildings to be responsive to climate change. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code. The Energy Code includes measures that will reduce energy use in single-family, multi-family, and nonresidential buildings. These measures will:

- Affect newly constructed buildings by adding new prescriptive and performance standards for electric heat pumps for space conditioning and water heating, as appropriate for the various climate zones in California.
- Require PV and battery storage systems for newly constructed multi-family and selected nonresidential buildings.
- Electric-readiness is a new mandatory requirement for dwelling unit gas space heating, water heating, cooking, and laundry. Common use areas are exempt from the electric-ready requirement, with the exception of common use area clothes dryers.
- Update efficiency measures for lighting, building envelope, heading ventilation, and air conditioning (HVAC); and
- Make improvements to reduce the energy loads of certain equipment covered by (i.e., subject to the requirements of) the Energy Code that perform a commercial process that is not related to the occupant needs in the building (such as refrigeration equipment in refrigerated warehouses, or air conditioning for computer equipment in data processing centers).

California Code of Regulations Title 24, Part 11 (commonly referred to as CALGreen) provides for voluntary energy efficiency provisions designed to support local jurisdictions and other entities aiming to exceed the mandatory energy efficiency requirements set by the Energy Code. These provisions apply to newly constructed buildings as well as additions and alterations to existing buildings. These voluntary measures focus on enhancing resource efficiency, improving building energy system performance, and aligning with broader environmental and public health goals, such as decarbonizing California's economy. They complement the mandatory provisions by offering additional strategies for energy conservation and efficiency.

Energy Efficiency in Appliances

This part of the California Code of Regulations sets standards for the energy efficiency of appliances sold or offered for sale in California. It covers a wide range of appliances, including refrigerators, air conditioners, and other household and commercial devices. Title 20 ensures that individual appliances for the energy efficiency of appliances sold or offered for sale in California meet specific energy efficiency standards. While Title 24 focuses on the building's overall energy efficiency, Title 20 and federal appliance standards ensures that individual appliances meet specific energy efficiency standards. Title 20 ensures that lighting and appliances being used in new construction meet energy efficiency standards set by the CEC.

City of San Jose

Electricity services for the proposed project would be provided by PG&E, and the project is proposed to be 100 percent electric. In 2022, 38 percent of PG&E's electricity was powered by renewable resources, 49 percent by nuclear, 8 percent by large hydro and 5 percent by natural gas.[26]

4.2.2 - Local

The following local regulations are applicable to the proposed project and will increase energy efficiency, decrease fuel use, and promote renewable energy use or production (beyond regional, State, and federal requirements).

City of San José GHG Reduction Strategy

The General Plan includes strategies, policies, and action items that are incorporated in the City's GHG Reduction Strategy (GHGRS) to help reduce GHG emissions. The General Plan's multiple policies and actions have GHG implications, including land use, housing, transportation, water usage, solid waste generation and recycling, and reuse of historic buildings. The City's GHGRS is intended to meet the mandates outlined in the BAAQMD CEQA Guidelines and standards for "qualified plans," as established by the BAAQMD. In addition, the City's Green Vision, as reflected in the City's GHGRS, includes a monitoring component that allows for adaptation and adjustment of City programs and initiatives related to sustainability and associated reductions in GHG emissions.

The GHGRS is intended to meet the mandates outlined in the CEQA Air Quality Guidelines, as well as the BAAQMD requirements for Qualified GHGRS. The City's 2030 GHGRS is a comprehensive update to the City's original GHGRS and reflects the plans, policies, and codes as approved by the City Council. The strategy builds on the General Plan and Climate Smart San José; these plans expanded the City's Green Vision to advance urban sustainability. Leveraging these existing plans and supporting policy and program frameworks, the 2030 GHGRS provides a set of strategies and additional actions for achieving the 2030 target.

The City's GHGRS identifies GHG emissions reduction measures to be implemented by development projects in four categories: built environment and energy, land use and transportation, recycling and waste reduction, and other GHG reduction measures. Some measures are mandatory for all proposed development projects and others are voluntary.

The primary test for consistency with the City's GHGRS is conformance with the General Plan Land Use/Transportation Diagram and supporting policies. Pursuant to CEQA Guidelines, all land use development proposals are required to evaluate consistency with the goals and policies outlined in the City's General Plan designed to reduce GHG emissions, generally through the use of a checklist. Projects consistent with the GHGRS would have a less than significant impact on GHG emissions through 2030 and would not conflict with targets in the currently adopted State of California Climate Change Scoping Plan through 2030.

[26] Pacific Gas and Electric Company (PG&E). 2022. Understanding Our Energy Sources. Website: https://www.pge.com/en/about/corporate-responsibility-and-sustainability/taking-responsibility/clean-energy-solutions.html#:~:text=The%20power%20mix%20delivered%20to%20PG&E%E2%80%99s%20bundled-service%20customers%20in%202022. Accessed October 2, 2024.

City of San José Municipal Code

The City of San José Municipal Code (Municipal Code) includes the following regulations that would reduce GHG emissions from future development:

- Green Building Ordinance (Chapter 17.84)
- Water Efficient Landscape Standards for New and Rehabilitated Landscaping (Chapter 15.10)
- Transportation Demand Programs for employers with more than 100 employees (Chapter 11.105)
- Construction and Demolition Diversion Deposit Program (Chapter 9.10)
- Wood-Burning Ordinance (Chapter 9.10)
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City of San José Reach Codes

Beginning in 2019, the City adopted and updates building codes that are more advanced than those required by the State. Known as "reach codes," the requirements apply to any newly constructed building/structure for which an application for a building permit is made on or after July 1, 2024. Currently, the requirements for multi-family housing state "the Source Energy budget must be less than the Source Energy budget calculated for the Standard Design Building by a compliance margin of 6 percent to comply; electrification-ready."[27] The City's Reach Code also requires the following EV requirements for new multi-family developments: 70 percent EV Capable; 20 percent EV Ready; and 10 percent EV supply equipment, and requires at least one Level 2 charging station in common-use parking areas.[28]

[27] Climate Smart San José. 2024. Website: https://www.sanjoseca.gov/home/showpublisheddocument/112542/638532753922770000. Accessed October 3, 2024.

[28] City of San José. 2024. Website: https://www.sanjoseca.gov/your-government/departments-offices/environmental-services/climate-smart-san-jos/san-jos-reach-code#:~:text=On%20January%2030,%202024,%20Council%20approved%20an%20update%20to%20the. Accessed October 3, 2024.

SECTION 5: METHODOLOGY

5.1 - Model Selection, Modeling Parameters and Assumptions

CalEEMod is used to calculate and assess criteria air pollutant (including ozone precursors), TAC, and GHG emissions, which are comprised of those on-site and off-site construction and operational emissions generated from all facets of the proposed project. CalEEMod provides a uniform platform for government agencies, land use planners, and environmental professionals to estimate emissions from land use development and linear projects in California. It utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available. Sources of these methodologies and default data include the EPA's AP-42 emission factors, ARB's vehicle emission models (such as EMFAC), and studies commissioned by California agencies such as the CEC. In addition, some local air districts provided customized information to support defaults and calculations for projects located in their jurisdictions.

Construction and operational emissions reported in this analysis were modeled using CalEEMod Version 2022.1.

5.2 - Air Pollutants and GHGs Assessed

Criteria Pollutants Assessed

Based on the attainment status of the SFBAAB and the BAAQMD CEQA Guidelines, the following air pollutants are assessed in this analysis:

- ROG
- NO_X
- CO
- PM_{10}
- $PM_{2.5}$

Note that the proposed project would emit ozone precursors ROG and NO_X. However, the proposed project would not directly emit ozone since it is formed in the atmosphere during the photochemical reaction of ozone precursors.

Toxic Air Contaminants Assessed

The following TACs are assessed in this analysis:

- DPM
- $PM_{2.5}$

Greenhouse Gases Assessed

This analysis is restricted to GHGs identified by AB 32, which include CO, CH_4, N_2O, HFCs, perfluorocarbons (PFCs), and SF_6. Total GHG emissions in this report are quantified and expressed as CO_2e.

Certain GHGs defined by AB 32 would not be emitted by the proposed project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the proposed project.

5.2.1 - Default Data and Assumptions

The recommendations contained within the BAAQMD 2022 CEQA were used as a reference in preparation of the air quality analysis.

CalEEMod provides default values for estimating construction and operational emissions from Bay Area-specific projects. Although users may apply the default values, BAAQMD strongly recommends that default values be modified whenever project-specific information is available to obtain more accurate emissions quantification. When site-specific information is unavailable, BAAQMD recommends that the most conservative estimates be used for the type of construction equipment and number of pieces of equipment to be used, the hours of operation, and the distance to the nearest sensitive receptors.

When changing any default parameters, users must include notes and references in the Justification for Changes box, which will facilitate reviews by lead agencies and other stakeholders. These Justification for Changes were documented when site-specific information was used instead of defaults. The CalEEMod report in Appendix A includes a listing of these changes and the notes include references to additional calculations and documentation which are also included in Appendix A following the CalEEMod Report.

5.2.2 - Model Inputs

Quantifying air pollutant emissions associated with land development projects involves identifying all sources of relevant air pollutant emissions that could occur as a result of implementation of the proposed project and calculating criteria air pollutants by activity level and emission factor. Emission factors represent the emission rate of a pollutant over a given time or activity, for example, grams of NO_X per vehicle mile traveled or grams of NO_X per horsepower (hp) hour of equipment operation. The activity factor is a measure of how active a piece of equipment or device is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, hp of a piece of equipment used, the fuel consumption rate, or VMT per day. The ARB has published emission factors for on-road mobile vehicles/trucks in the Emission Factor (EMFAC) mobile source emissions model and emission factors for off-road equipment and vehicles in the OFF-ROAD emissions model. An air emissions model (or calculator) combines the emission factors and the levels of activity and outputs the emissions for the various pieces of equipment.

5.2.3 - Criteria Air Pollutant and GHG Analysis and Methodology

Construction

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity of light and heavy-duty construction equipment, motor vehicle operation, and fugitive dust (PM_{10} and $PM_{2.5}$) from disturbed soil. Additionally, paving operations and application of architectural coatings would release volatile organic compound (VOC) emissions. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$).

Schedule

Based on applicant-provided information, the construction was estimated to begin in mid-2025 and would last for approximately 3 years. The construction emissions modeling reflects that duration and is assumed for the purposes of this environmental analysis. The construction schedule used in the analysis represents a "worst-case" analysis scenario because emission factors for construction equipment decrease as the analysis year increases due to improvements in technology and compliance with more stringent regulatory requirements. Therefore, construction emissions would decrease if the construction schedule moved to later years. The duration of construction activity and associated equipment represent a reasonable approximation of the expected construction fleet as required by the CEQA Guidelines. Construction activities would consist of demolition, site preparation, grading, building construction, paving, and architectural coating of the inside and outside of the buildings. The modeled construction schedule, worker commute trips, vendor and haul truck trips, and construction equipment, along with hours of operation per day, hp, and load factor are available in Appendix A.

Construction Equipment Tiers and Emission Factors

A summary of the on-site, off-road construction equipment usage assumptions used to estimate emissions presented in Appendix A. This analysis uses the CalEEMod default hp and load factors for off-road equipment. Off-road equipment is modeled using the "Average" option which uses Statewide average fleetwide emission factors from ARB's ORION model for the project construction year (for the unmitigated scenario). Tier 4 emissions were modeled using the Carl Moyer Controlled Off-road Diesel Emission Factors for the mitigated scenario.

Demolition

Fugitive dust is generated during demolition from the demolition of buildings based on the tons of debris material. Quantities of demolition materials may be entered directly in tons or calculated using methods internal to CalEEMod based on the square footage of the building. Because the demolition quantities assume a building structure and demolition would involve both a building and substantial quantities of pavement removal the amount of material quantity for each was determined outside of CalEEMod (off-model), accounting for the nature of each type of demolition and material density. It was then converted to tons and entered into CalEEMod this way. Details of these additional calculations are included along with the CalEEMod report in Appendix A.

Site Preparation and Grading

During site preparation and grading/excavation activities, fugitive dust can be generated from the movement of soil on the project site. CalEEMod estimates dust from earth movement, from graders or other construction equipment leveling the land and from loading or unloading soil into haul trucks. Each activity is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment.

All projects are required to comply with the requirements of BAAQMD Best Management Practices (BMPs) to reduce emissions of fugitive dust (also required as a Standard Permit Condition for Air Quality by the City). The model accounts for the implementation of these dust control measures during these phases as part of the unmitigated scenario assuming watering of exposed area at a minimum frequency of 2 times per day, resulting a 61 percent control efficiency for both PM_{10} and $PM_{2.5}$ dust.

Hauling would be required to export material to/from the project site; 9,389 cubic yards of soil is assumed to be exported (based on applicant-provided information), which will result in an addition 12 daily haul trips during the site preparation phase.

Building Construction

During building construction activities, on-site emissions are primarily generated from the off-road construction equipment and are calculated using the equipment specified along with the ARB Off-Road Emission and Load Factors, the number of construction days and hours of operation per day.

Architectural Coating and Paving

ROG emissions are calculated using CalEEMod defaults based on BAAQMD Regulation 8 Rule 3 paint VOC regulations assuming 100 grams per liter (g/L) VOC for Interior Coating (residential and nonresidential), 150 g/L VOC for exterior coatings (residential and nonresidential) and 100 g/L for parking lot paint used for striping and other markings. The surface area to be coated is based on CalEEMod correlations for interior and exterior walls, with the interior walls representing 75 percent of the Coating Emissions and the exterior walls representing 25 percent.

ROG emissions for paving are calculated only for areas specified as asphalt paving. The proposed project was assumed to have 2.91 acres of paved area, subtracting out building footprints. VOC emissions are based on the AP-42 emission factor of 2.62 lb VOC/acre.

Off-site Construction Vehicles

A summary of the construction-related vehicle trips is shown in Table 4. A. Note that the total number of construction vehicle trips would not necessarily occur on the same day because construction activities would vary each day during the construction period.

Off-road emissions for demolition, site preparation, and grading phases are based on construction worker and haul trips both calculated internally in CalEEMod based on the number of pieces of off-road construction equipment for workers and the amount of demolition materials for hauling, assuming a 16 cubic yard capacity truck. Vendor trips may be optionally added for each phase as appropriate to the project and were added to the site preparation phase to account for the off-haul

of soil export and in the paving phase to account for delivery of asphalt and any aggregate base material needed for paving. Default hauling trips are 20 miles; vendor trips are 8.4 miles, and worker commute trip lengths are 11.7 miles based on the site location.

Trips for building construction and architectural coating activities are based on the square footage of the buildings the number of dwelling units for residential land uses. Architectural coating workers are assumed to be 20 percent of the number of construction workers.

Mitigation Measures

Emissions modeling was performed for both an unmitigated and mitigated scenario for this project to mitigate emissions of diesel PM exhaust. CalEEMod Measure C-5 (Use Advanced Engine Tiers) was used to model MM AIR-1 which specifies Tier 4 equipment for engines greater than 50 hp.

No other mitigation measures were implemented for the mitigated CalEEMod run.

Operation

The major sources of operational emissions that would occur over the long-term operation of the proposed project are summarized below. CalEEMod contains calculations to estimate both direct emissions of criteria air pollutants and GHG emissions at the project site and indirect GHG emissions. Indirect emissions that result when the location of consumption or activity is different from where actual emissions are generated. For example, electricity would be consumed at the proposed project site; however, emissions associated with producing that electricity are generated off-site at a power plant.

Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the motor vehicles that would travel to and from and within the project site. The regional emissions from the proposed project's mobile sources were assessed according to the trip generation rates from the Transportation Impact Study by Hexagon dated May 2024. The Santa Clara County average fleet mix for the first operational year (2026) was used to model the vehicle mix of trips generated. This includes a mixture of passenger vehicles, motorcycles, and motor homes, as well as small percentages of medium- and heavy-duty vehicles and buses, in the relative proportions present on the roadways.

Energy (Electricity and Natural Gas Use)

Within CalEEMod, building electricity and natural gas use is divided into two categories: (1) end uses subject to Title 24 standards, and (2) end uses not subject to Title 24 standards. The distinction is required to enable accurate calculation of several energy sector reduction measures.

- Electricity–Subject to Title 24 : space heating, cooling, ventilation, water heating, outdoor lighting, and the majority of indoor lighting.
- Electricity–***Not*** Subject to Title 24: all other end uses, including cooking appliances, clothes washers, electric dryers, refrigeration, office electronics, electric pool/spa heating, well pumping, fans, miscellaneous plug-in uses, and the remainder of indoor lighting.

- Natural Gas–Subject to Title 24.: space heating and water heating.
- Natural Gas–***Not*** subject to Title 24.: all other end uses, including range/oven, dryer, pool/spa heating, and other miscellaneous uses.

CalEEMod generates default natural gas and electricity use consumption based on the land use and Electricity Demand Forecast Zone (EDFZ) climate zone as classified by the CEC. The EDFZ influences default calculations for building energy consumption and the effectiveness of emission reduction measures in the energy sector.

Default electricity and natural gas consumption is based on 2019 consumption estimates using the CEC's 2018–2030 Uncalibrated Commercial Sector Forecast and 2019 Residential Appliance Saturation Survey.

Electricity (GHG Only)

GHG emissions modeling includes those indirect emissions from electricity consumption based on CalEEMod defaults for energy usage based on land use type and the 2019 Title 24 Building Standards.

The energy consumption in megawatt-hour (MWh) per year is used in conjunction with the Energy Intensity of the purchased electricity to calculate the GHG emissions in CO_2e. The model has a default rate of 2.3 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E 2019 emissions rates. PG&E is the official electricity provider for the proposed project.

Energy–Natural Gas

Emissions from this sector are principally from use of space and water heating. Pursuant to the City's Reach Code, the proposed project would be all-electric; accordingly, energy emissions for natural gas are zero.

The electricity consumption to electrify the zeroed out natural gas end uses are calculated using methods outlined in Measure E-15 using the primary natural gas end uses that are commonly electrified, including space heating, water heating, and range/oven for the EDFZ zone and land use for the project. [29] For regions where the data is missing for the EDFZ or end use, Statewide averages are used to calculate the electricity which replaces natural gas energy. Values for the electricity consumption by land use and EDFZ were taken from Appendix Table E-15.1 for residential land uses and Table E-15.2 for commercial land uses.[30]

[29] California Air Pollution Control Officers Association (CAPCOA). 2021. Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Website: https://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf. Accessed October 3, 2024.

[30] California Air Pollution Control Officers Association (CAPCOA). 2021. Appendix C: Emission Factors and Data Tables from Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Available at: https://www.caleemod.com/documents/handbook/appendices/appendix_c.pdf. Accessed October 3, 2024.

Area Sources

In addition to typical mobile source emissions, long-term operational emissions also include area source emissions. Area source emissions include occasional architectural coating activities for repainting of buildings associated with the proposed project. CalEEMod assumes that repainting occurs at a rate of 10 percent of the buildings per year. Therefore, on average, it is assumed that the buildings would be fully repainted every 10 years.

Other area source emissions include consumer products that involve solvents that emit VOCs during use. CalEEMod includes default consumer product use rates based on building square footage. Lastly, CalEEMod default emission factors for landscape maintenance equipment were used in this analysis.

Stationary Sources

Emergency diesel generators, boilers, and emergency fire pumps represent common sources of operational stationary sources. Default emission factors for emergency generators correspond to regulatory Tier 3 standards (as emergency generators are not amenable to stable long-term operating ideal for the operation of Selective Catalytic Reduction (SCR) used to achieve emission reductions in Tier 4 off-road engines). The proposed project is a high-rise residential development, and it was assumed that diesel generators may be needed as backup power for elevator use. Therefore, diesel generator emissions were included in the analysis.

Water and Waste (GHG Only)

CalEEMod includes calculations for indirect GHG emissions for electricity consumption, water consumption, and solid waste disposal. For water consumption, the model calculates embedded energy (e.g., treatment, conveyance, distribution) associated with providing each gallon of potable water to the project site. For solid waste disposal, GHG emissions are generated as solid waste generated by the proposed project decomposes in a landfill.

Refrigerants (GHG Only)

During operation, there may be leakages of refrigerants (hydrofluorocarbons) from air conditioners and any refrigeration systems. Hydrofluorocarbons are typically used for refrigerants, which are long-lived GHGs.

Vegetation (GHG Only)

CalEEMod has a module that addresses impacts of Land Use Change and Sequestration. The project applicant proposes planting trees and integrating landscaping into the proposed design, which would provide carbon sequestration. However, the number of trees to be planted is unknown and data are insufficient to accurately determine the impact that the existing landscaping has on carbon sequestration. For this analysis, emissions due to carbon sequestration were not included to present a conservative analysis.

CalEEMod was designed with default assumptions supported by substantial evidence to the extent available, and the functionality and content of CalEEMod is based on fully adopted methods and data. However, CalEEMod was also designed to allow for a change in defaults to reflect site- or

project-specific information, when available, provided that information is supported by substantial evidence. Any changes to default assumptions, inclusion of project-specific information, or additions to the methodology as described in this section are detailed in the impact analysis below (with technical data contained in Appendix A).

CalEEMod emission factors reflect the potential emission reductions from regulatory actions outlined in the Regulatory Framework section which are updated through the EMFAC and OFF-ROAD emissions models developed by ARB. Calendar year average emission factors for construction and light commercial equipment are based on a model run in exhaust and evaporative modes on a Statewide basis for 41 scenario years 2010–2050) to reflect the ongoing emission reductions assumed per year based on regulatory actions.

Construction and operational emissions reported in this analysis were modeled using CalEEMod Version 2022.1.1.

5.2.4 - Risk and Hazards Analysis and Methodology

BAAQMD has identified a distance of 1,000 feet from the project source to the closest sensitive receptor locations within which community health risk thresholds would be applicable to gauge the significance of health risk-related impacts. Impacts are quantified for the maximally impacted sensitive receptors. The analysis is referred to as “Risks and Hazards” because it evaluates the cancer risk, as well as the acute and chronic health hazards associated with exposure to TACs and/or $PM_{2.5}$.

The methods for assessing the potential health impacts from directly emitted TAC and $PM_{2.5}$ emissions associated with the proposed project follows BAAQMD and California Office of Environmental Health Hazard Assessment (OEHHA) guidance. The methods focus on directly emitted TAC and $PM_{2.5}$ and not those formed through secondary reactions in the atmosphere. TAC and $PM_{2.5}$ emissions can occur during construction and/or operation of a project. To assess the potential health impacts from construction, a Health Risk Assessment (HRA) was prepared. The HRA follows the recommendations contained within the BAAQMD CEQA Guidelines which are based on OEHHA guidance. The HRA was conducted utilizing the ARB’s Hot Spots Analysis and Reporting Program Version 2 (HARP2) to automatically calculate risks for the proposed project using OEHHA promulgated cancer potency and Reference Exposure Levels (RELs). HARP2 is the recommended model for calculating and presenting HRA results because it follows the BAAQMD risk assessment guidance methodology and is consistent with BAAQMD Regulation 2-5: New Source Review of Toxic Air Contaminants and Regulation 11-18: Reduction of Risk from Air Toxic Emissions at Existing Facilities. Emissions utilized in the HRA were modeled using CalEEMod Version 2022.1.1. Air dispersion modeling was conducted using AERMOD.

The evaluation of risks and hazards requires two different analyses. First, an individual project-level analysis, evaluates the impact of the construction and operation of the proposed project by itself, and second, a cumulative analysis combines the project impact with existing health impacts from other sources, such as industrial stationary sources, nearby gas stations and generators, and mobile sources including roadways, rail and marine vessels.

Project Level Analysis

This analysis focuses on the impact of the proposed project on identified receptors within 1,000 feet. Receptors include sensitive receptors, off-site workers, and schools within a radius of 1,000 feet of the project boundary.

The analysis consists of three steps:

- Identify and quantify TAC and PM2.5 emission sources,
- use a dispersion model to translate these emissions to concentrations of the TACs and PM2.5 at specific off-site locations (called receptors), and
- perform an HRA based on these exposure concentrations.

The results of the HRA are compared to health specific thresholds of significance as defined by BAAQMD. These are defined by cancer risk and non-cancer hazard indices for each TAC. The risks and hazards are modeled for a baseline or unmitigated scenario, including all project design features and commitments. If risks from these baseline conditions are above health-based criterion, then mitigation measures are proposed, emissions are recalculated, and the procedure is repeated to evaluate a mitigated risk scenario.

Construction

Construction sources of TAC emissions include DPM exhaust from on-site construction equipment exhaust and from off-site roadway emissions of diesel-fueled vendor and haul trucks. The off-site emissions from trucks are only include for the emissions on roadways within 1,000 feet of the site. As per BAAQMD, the risks and hazards evaluation also include the evaluation of $PM_{2.5}$, which is emitted from fugitive dust sources during site disturbance activities (demolition, site preparation and grading), as well as roadway dust sources. Emissions of the DPM and $PM_{2.5}$ are obtained from the CalEEMod construction modeling.

Not all sources of TAC emissions represent significant sources of risks and hazards and quantitative approaches can be used to address these risks in certain situations. Indicators such as a limited duration of construction, the use of Clean Construction Equipment (that minimizes DPM emissions), or a considerable distance between the construction site and the nearest sensitive receptor may be used to establish that risk levels are acceptable, without a quantitative HRA.

Operation

Operational emission sources include significant sources of TAC emissions during project operations. This could include DPM from the operation of a large number of diesel trucks or associated transport refrigeration generator units. These sources would be most typical at warehouses or large grocery stores. On-site emergency generators also represent an ongoing source of TAC emissions; however, the emissions from these stationary sources are limited by district and State requirements that limit their operation to ensure acceptable risk levels.

Not all sources of TAC emissions represent significant source; qualitative indicators such as separation distances from separate receptor or permitting requirements ensure that the resulting risk will be less than significant without performing a quantitative risks assessment.

While construction and operational HRAs are conducted separately, the project is defined as the sum of its parts: construction, followed by operations.

Cumulative Analysis

This analysis focuses on the impact of the proposed project on identified receptors within 1,000 feet, as identified in the project-level analysis. The analysis involves combining the Risk and Hazard values determined for the project with risks and hazards from existing sources in this 1,000-foot radius.

Cancer risks and chronic hazards, as well as $PM_{2.5}$ contributions from BAAQMD permitted stationary sources, roadways and rail were determined using the BAAQMD-provided GIS-based Stationary Source Screening Map. Cancer risks, chronic hazards and $PM_{2.5}$ concentrations from nearby road and rail sources were obtained from the raster data sets of Roadway Screening Data Layers, and Rail and Railyard Screening Data Layers.

5.3 - Energy

5.3.1 - Construction

Fuel consumption for on-site construction equipment and off-site construction vehicles are calculated using inputs and results from the air quality and GHG analysis in CalEEMod.

Off-road equipment fuel consumption is based on the mix of construction equipment and duration utilizing the CalEEMod inputs for the following:

- Number of pieces of equipment
- Duration of Use (days and hours per day)
- Operating Load Factor
- Fuel Type (gasoline, diesel, or electric)

Fuel consumption factors in terms of gallons per hour of diesel for off-road equipment were calculated using a factor of 0.054 gallons per horsepower hour-hr.[31]

Fuel consumption for worker, vendor and haul construction vehicles are also calculated based on CalEEMod inputs. The fuel consumption rates (miles per gallons) were obtained using the ARB EMFAC2021 Web Tool.[32] The rates were based on the County-specific inventory for the initial construction year and calculated for the vehicle categories for each vehicle type in CalEEMod. For workers, the assumed fleet is based on field observations and is 25 percent light-duty auto (LDA), 50 percent light-duty truck type 1 (LDT1), and 25 percent light-duty truck type 2 (LDT2). Haul trucks

[31] California Air Resources Board (ARB). 2021. Low Emission Diesel (LED) Study: Biodiesel and Renewable Diesel Emissions in Legacy and New Technology Diesel Engines, November 2021.
[32] California Air Resources Board (ARB). 2024. EMFAX Web Tool. Website: https://arb.ca.gov/emfac/emissions-inventory. Accessed November 15, 2024.

were assumed to be 100 percent diesel heavy heavy-duty truck (HHDT). Vendor trucks during building construction were assumed to be entirely diesel-fueled and 50 percent medium heavy-duty truck (MHDT) and HHDT, while asphalt vendor trucks were assumed to all be diesel-fueled HHDT.

5.3.2 - Operation

Transportation Sector (Mobile Sources)

Fuel consumption factors for operational mobile sources were calculated based on the VMT and operational fleet for each land use modeled in CalEEMod. The EMFAC WebTool was used to develop fuel consumption rates corresponding to the County fleet for the operational year modeled in CalEEMod. These up-to-date inventories include electric and conventional vehicle inventory data as well as compressed natural gas (CNG) bus and truck data. Electric usage was characterized as kWh/vehicle mile and fossil fuel usage by miles per gallon. CNG usage is reported in gallons equivalent.

Residential Sector–Building Energy

Natural gas (if applicable) and electricity estimates are based on CalEEMod energy calculations and include Title 24 and Non-Title 24 energy based on size, land use and EDFZ climate zone. CalEEMod energy calculations are based on 2019 Title 24, providing somewhat conservative estimates of building energy use. Single-family homes built with the 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards.

For this proposed project, which is all-electric, the natural gas usages was zeroed in CalEEMod. Electrifying the proposed development substitutes electric end uses in place of natural gas end uses. Thus, it is expected that user's building would electrify the most common natural gas end uses—space heating, water heating, and range (i.e., cooktop plus oven). Additional natural gas end uses include dryer, auxiliary heat, pool heat, spa heat, solar water heater with natural gas backup, and miscellaneous. These increased electricity demands are revised to account for the increases by replaced end-use electricity, following calculational methods outlined in the California Air Pollution Control Officers Association (CAPCOA) Handbook–Measure E-15 (Require All Electric Development). The detailed energy calculation sheets are included in Appendix A.

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SECTION 6: AIR QUALITY IMPACT ANALYSIS

This section estimates anticipated emissions from project construction and operation as a necessary requisite for assessing the significance of project emissions on a regional and local level. The methodology follows the BAAQMD CEQA Guidelines, which set forth recommended thresholds of significance and analysis methodologies and provide guidance on mitigating significant impacts.

6.1 - CEQA Guidelines

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine whether a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the proposed project must be evaluated.

While the BAAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions, the final determination of whether a project is significant is within the purview of the lead agency pursuant to Section 15064(b) of the CEQA Guidelines. If the lead agency finds that the proposed project has the potential to exceed identified air pollution thresholds, the proposed project would be considered to have significant air quality impacts.

6.1.1 - Thresholds of Significance

Appendix G to the CEQA Guidelines is a sample Initial Study Checklist that includes questions for determining whether impacts to air quality are significant. These questions reflect the input of planning and environmental professionals at the OPR and the California Natural Resources Agency, based on input from stakeholder groups and experts in various other governmental agencies, nonprofits, and leading environmental consulting firms.

Additional guidance on the significance of air quality impacts is found in CEQA Guidelines Section 15065 (a)(4), which provides that a lead agency shall find that a project may have a significant effect on the environment if "the environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly." According to the California Supreme Court, this "mandatory finding of significance" applies to potential effects on public health from environmental impacts such as those associated with air pollutant emissions from projects. (*California Business Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 386-392.)

Additionally, where available, significance criteria established by the applicable air quality management or air pollution control district may be relied upon to assist in making significance determinations. As explained earlier, BAAQMD's 2022 CEQA Air Quality Guidelines were prepared to assist in evaluating air quality impacts of projects and plans proposed within the Bay Area. The BAAQMD CEQA Guidelines provide recommended procedures for evaluating potential air quality impacts during the environmental review process, consistent with State CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHGs. While the final determination of whether a project is significant is within the purview of the

lead agency pursuant to Section 15064(b) of the CEQA Guidelines, the BAAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If a lead agency finds that a project has the potential to exceed these air pollution thresholds, the proposed project should be considered to have significant air quality impacts.

Many lead agencies derive their significance criteria from the questions posed in Appendix G and recommendations from the air district. To evaluate each of the questions posed in Appendix G related to air quality, the applicable BAAQMD thresholds and methodologies are contained under each impact statement below.

6.2 - Impact Analysis

6.2.1 - Consistency with Air Quality Management Plan

Impact AIR-1:	**The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.**

Impact Analysis

The BAAQMD has adopted several air quality policies and plans to address regional air quality standards, the most recent of which is the 2017 Clean Air Plan. The 2017 Clean Air Plan was adopted in April of 2017 and serves as the regional Air Quality Plan (AQP) for the Air Basin for attaining the NAAQS. The primary goals of the 2017 Clean Air Plan are to protect public health and protect the climate. The 2017 Clean Air Plan acknowledges that the BAAQMD's two stated goals of protection are closely related. As such, the 2017 Clean Air Plan identifies a wide range of control measures intended to decrease both criteria pollutants and GHG. The 2017 Clean Air Plan also accounts for projections of population growth provided by ABAG and VMT provided by the Metropolitan Transportation Commission (MTC) and identifies strategies to bring regional emissions into compliance with federal and State air quality standards. A project would be judged to conflict with or obstruct implementation of the 2017 Clean Air Plan if it would result in substantial new regional emissions not foreseen in the air quality planning process.

The BAAQMD does not provide a numerical threshold of significance for project-level consistency analysis with AQPs. Therefore, the following criteria will be used for determining the proposed project's consistency with the AQP.

- **Criterion 1:** Does the project support the primary goals of the AQP?
- **Criterion 2:** Does the project include applicable control measures from the AQP?
- **Criterion 3:** Does the project disrupt or hinder the implementation of any AQP control measures?

Criterion 1

The primary goals of the 2017 Clean Air Plan, the current AQP to date, are to:

- Attain air quality standards;
- Reduce population exposure to unhealthy air and protect public health in the Bay Area; and

- Reduce GHG emissions and protect the climate.

A measure for determining whether the proposed project supports the primary goals of the AQP is if the proposed project would not 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 air quality standards or the interim emission reductions specified in the AQPs. This measure is determined by comparing project emissions to the significance thresholds identified by the BAAQMD for construction- and operation-related pollutants. These significance thresholds are applied in the evaluation of Impact AIR-2, below. As discussed under Impact AIR-2 and Impact AIR-3, the proposed project would not significantly contribute to cumulative nonattainment pollutant violations or expose sensitive receptors to substantial pollutant concentrations after incorporating identified mitigation. Fugitive dust control measures would be required to be implemented during the construction of the proposed project to reduce localized dust impacts. Impacts related to fugitive dust from the proposed project's construction would be potentially significant without the inclusion of sufficient dust control measures. The City's Standard Permit Conditions for Air Quality require the inclusion of construction-related air quality measures to reduce potential impacts related to fugitive dust emissions from use of construction equipment. In addition, construction exhaust emissions would result in potentially significant health risk impacts and would require the implementation of Mitigation Measure (MM) AIR-1, which would require the use of Tier 4 Interim engines for construction equipment equal to or greater than 50 hp. With the implementation of Standard Permit Condition for Air Quality and MM AIR-1, the proposed project would be consistent with Criterion 1.

The 2017 Clean Air Plan sets forth control measures to reduce emissions for a wide range of stationary and mobile sources. The control measures that are relevant to the proposed project are summarized below; the proposed project would not conflict with the applicable control measures of the 2017 Clean Air Plan.

Criterion 2

Another measure for determining whether a project is consistent with the AQP is to determine whether the project is inconsistent with the growth assumptions incorporated into the AQP and, thus, whether it would interfere with the region's ability to comply with federal and California air quality standards. The BAAQMD completes the regional emissions inventory for the SFBAAB. In part, the regional population, housing, and employment projections developed by the Association of Bay Area Governments (ABAG) are based on cities and counties general plan land use designations. These projections form the foundation for the emissions inventory of the 2017 Clean Air Plan. These demographic trends are incorporated into Plan Bay Area, compiled by ABAG and the MTC, to determine priority transportation projects and VMT in the Bay Area. Projects consistent with the local general plan are considered consistent with the regional AQP. Large projects that exceed regional employment, population, and housing planning projections have the potential to be inconsistent with the regional inventory compiled as part of the 2017 Clean Air Plan.

The proposed project would build 100 market-rate townhome units and two apartment buildings providing a combined 637 units, for a total of 737 units. As described in the Project Description, the proposed project site is designated within the Transit Employment Residential Overlay (TERO), which

identifies sites within the North San José Employment Center that may be appropriate for residential development and supports residential development as an alternate use at a minimum net density of 75 du/acre. The proposed project anticipates 76.2 du/acre and would comply with the TERO height and development standards.

The proposed project is therefore consistent with the underlying general plan land use designation and would not have the potential to substantially affect housing, employment, and population projections in the region that are the basis of the 2017 Clean Air Plan projections.

The AQPs also assume that all mandatory regulations to reduce air pollution would be adhered to. Therefore, to conform to the assumptions in the AQP, a project must be consistent with all applicable measures contained in the applicable AQP. The Clean Air Plan contains 85 control measures to reduce air pollutants and GHGs at the local, regional, and global levels. Along with the traditional stationary, area, mobile source, and transportation control measures, the Clean Air Plan contains several control measures designed to protect the climate and to promote mixed-use and compact development to reduce vehicle emissions and exposure to pollutants from stationary and mobile sources. The Clean Air Plan also includes an account of the implementation status of control measures identified in the 2010 Clean Air Plan.

To establish compliance with the Clean Air Plan, the proposed project would be required to comply with applicable Clean Air Plan control measures, listed below:

- **BL1:** Green Buildings;
- **BL4:** Urban Heat Island Migration;
- **EN1:** Decarbonize Electricity Generation;
- **EN2:** Decrease Electricity Demand;
- **NW2:** Urban Tree Planting;
- **WA3:** Green Waste Diversion;
- **WA4:** Recycling and Waste Reduction;
- **SS36:** Particulate Matter from Trackout;
- **SS37:** Particulate Matter from Asphalt Operations; and
- **TR9:** Bicycle and Pedestrian Access and Facilities.

The proposed project would comply with the above control measures, as specified below:

- For consistency with Clean Air Plan Measures BL1, EN1, and EN2, the proposed project would comply with the latest energy efficiency standards, such as the 2022 California Title 24 Energy Code, including Title 24, Part 6, Subchapter 8, which would require the proposed project to incorporate rooftop solar. In addition, the proposed project would incorporate applicable energy efficiency features designed to reduce project energy consumption.
- For consistency with Clean Air Plan Measures BL4 and NW2, the proposed project would incorporate 1.7 acres of landscaping, including the provision of groundcover and new trees consistent.

- For consistency with Clean Air Plan Measures WA3 and WA4, the proposed project would utilize a waste service provider compliant with AB 341, SB 939, and SB 1374 requirements.
- For consistency with Clean Air Plan Measure SS36, the proposed project would comply with fugitive dust emissions minimization requirements established in Municipal Code Section 20-30.090, Performance Standards for All Development and Land Uses. In addition, the proposed project would incorporate BAAQMD's Basic Construction Mitigation Measures.
- For consistency with Clean Air Plan Measure SS37, the proposed project would utilize asphalts subject to BAAQMD Regulation 8, Rule 15-Emulsified and Liquid Asphalts. The use of asphalts under this regulation would limit the ROG content in the asphalt.
- For consistency with Clean Air Plan Measure TR9, the proposed project would include 177 bicycle parking spots along with bicycle circulation along Cisco Way and River Oaks Parkway, which will provide bicycle and/or pedestrian access through these circulations. The site design also includes pedestrian thoroughfares and is connected to existing public transit.

In summary, the proposed project would not conflict with any applicable measures under the 2017 Clean Air Plan after implementing Standard Permit Condition for Air Quality; therefore, the proposed project would be consistent with Criterion 2.

Criterion 3

The proposed project would not preclude extension of a transit line or bike path, propose excessive parking beyond parking requirements, or otherwise create an impediment or disruption to implementation of any AQP control measures. As discussed above, the proposed project would incorporate several AQP control measures, such as complying with energy efficiency standards contained in the 2022 California Building Code, creating pedestrian and bicycle connections and thoroughfares, connecting with an existing public transit line, delivering a mix of affordable and market-rate high-quality housing in an existing residential neighborhood, and installing landscaping across the proposed project site. Considering this information, the proposed project would not disrupt or hinder the implementation of any AQP control measures. The proposed project is therefore consistent with Criterion 3.

Summary

As addressed above, the proposed project would comply with all applicable federal, State, and local regulations. Thus, the proposed project would not conflict with the 2017 Clean Air Plan and meets all three criterion set out by BAAQMD for demonstrating consistency. Therefore, impacts associated with conflicting with or obstructing the 2017 Clean Air Plan's implementation would be less than significant.

Level of Significance

Less than significant impact.

Standard Permit Conditions for Air Quality

Construction-related Air Quality

The following measures shall be implemented during all phases of construction to control dust and exhaust at the project site:

- Water active construction areas at least twice daily or as often as needed to control dust emissions.
- Cover trucks hauling soil, sand, and other loose materials and/or ensure that all trucks hauling such materials maintain at least two feet of freeboard.
- Remove visible mud or dirt trackout onto adjacent public roads using wet-power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Pave new or improved roadways, driveways, and sidewalks as soon as possible.
- Lay building pads as soon as possible after grading unless seeding or soil binders are used.
- Limit all vehicle speeds on unpaved roads to 15 mph.
- Replant vegetation in disturbed areas as quickly as possible.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Minimize idling times either by shutting off equipment when not in use, or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California Code of Regulations). Provide clear signage for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints.

6.2.2 - Cumulative Impacts

Impact AIR-2:	**The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality (including releasing emissions which exceed quantitative thresholds for ozone precursors).**

Impact Analysis

This impact is related to the cumulative effect of a project's regional criteria pollutant emissions. By its nature, air pollution is largely a cumulative impact resulting from emissions generated over a large geographic region. The nonattainment status of regional pollutants results from past and present development within the SFBAAB, and this regional impact is a cumulative impact. Therefore,

new development projects (such as the proposed project) within the SFBAAB would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of regional air quality standards. Instead, a project's emissions may be individually limited but cumulatively considerable when evaluated in combination with past, present, and future development projects.

Potential localized and regional impacts would result in exceedances of State or federal standards for NO_X, ROG, particulate matter (PM_{10} and $PM_{2.5}$), or CO. NO_X emissions are of concern because of potential health impacts from exposure to NO_X and ROG emissions during both construction and operation and as a precursor in the formation of airborne ozone. PM_{10} and $PM_{2.5}$ are of concern during construction because of the potential to emit exhaust emissions from the operation of off-road construction equipment and fugitive dust during earth-disturbing activities (construction fugitive dust). CO emissions are of concern during project operation because operational CO hotspots are related to increases in on-road vehicle congestion and potential health effects.

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. According to Section 15064(h)(4) of the CEQA Guidelines, the existence of significant cumulative impacts caused by other projects alone does not constitute substantial evidence that the proposed project's incremental effects would be cumulatively considerable. Rather, the determination of cumulative air quality impacts for construction and operational emissions is based on whether the proposed project would result in regional emissions that exceed the BAAQMD regional thresholds of significance for construction and operations on a project level. The significance thresholds represent the allowable quantity of emissions each project can generate without generating a cumulatively considerable contribution to regional air quality impacts. Therefore, a project that would not exceed the BAAQMD thresholds of significance on the project level also would not be considered to result in a cumulatively considerable contribution to these regional air quality impacts. Construction and operational emissions are discussed separately below.

Construction

During construction, fugitive dust would be generated from demolition, site grading, and other earthmoving activities. The majority of fugitive dust would remain localized and deposited near the project site; however, fugitive dust's potential impacts exist unless control measures are implemented to reduce this source's emissions. Exhaust emissions would also be generated from the operation of the off-road construction equipment and on-road construction vehicles.

Construction Fugitive Dust

For a project to have a less than significant criteria air pollutant impact related to construction-related fugitive dust emissions, it must implement all of the Air District's basic BMPs listed in the Guidelines.[33] The proposed project would be required to include all construction BMPs as part of compliance with standard construction permits and would implement dust control measures as

[33] Bay Area Air Quality Management District (BAAQMD). 2022. Project-Level Air Quality Impacts, Table 5-2, California Environmental Quality Act Air Quality Guidelines.

Standard Permit Conditions for Air Quality. Therefore, impacts related to fugitive dust would be less than significant.

Construction Emissions: ROG, NO_X, PM_{10}, and $PM_{2.5}$

Construction emissions were quantified and estimated using CalEEMod Version 2022.1.1 for a typical construction scenario for a land use project of this size. Estimated construction emissions are compared with the applicable thresholds of significance established by the BAAQMD to assess ROG, NOX, exhaust PM_{10}, and exhaust $PM_{2.5}$ construction emissions to determine significance for this impact. The following project characteristics and assumptions were utilized in the analysis:

- Construction would begin in August 2025 and occur over approximately 3 years (based on applicant-provided information). If the construction moves to later years, construction emissions would likely decrease due to improvements in technology and more stringent regulatory requirement.
- Demolition of the existing building (164,606 square feet) and asphalt (311,500 square feet) equaling 19,302 tons of construction debris.
- Site grading and preparation, including the removal of 220 trees (adding an additional 12 one-way vendor truck trips) and 9,389 cubic yards of soil export.
- Construction of 737 dwelling units in a townhouse and apartment building configuration, along with associated landscaping and site-wide hardscape circulation.
- Construction of off-site improvements including sidewalk installation.
- 14 daily vendor trips during the paving phase of construction.
- 241 one-way daily haul trips during the demolition phase of construction.

Additional details on the assumptions and inputs are included in the CalEEMod output reports (Appendix A).

Table 4 presents the proposed project total emissions and the average daily emissions from construction. The average daily emissions for criteria pollutants were estimated as: 23.03 pounds per day (lb/day) ROG, 14.17 lb/day NOX and 0.011 and 0.012 lb/day $PM_{2.5}$ and PM_{10} exhaust. All estimated emissions are all well below the established thresholds of significance for construction of 54 lb/day for ROG, NO_X, and $PM_{2.5}$ exhaust and 82 lb/day for PM_{10} exhaust. In addition, the proposed project would implement BMPs as Standard Permit Conditions to ensure a less than significant impact for PM_{10}/$PM_{2.5}$ dust emissions.

Table 4: Construction Emissions by Construction Year–Unmitigated

Construction Activity	Criteria Pollutant Emissions (tons)			
	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Demolition (2025)	0.028	0.445	0.012	0.011
Site Preparation (2025)	0.018	0.216	0.008	0.007

Construction Activity	Criteria Pollutant Emissions (tons)			
	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Grading (2025)	0.029	0.268	0.011	0.010
Building Construction (2025)	0.086	0.442	0.014	0.013
Building Construction (2026)	0.338	1.803	0.053	0.049
Building Construction (2027)	0.325	1.724	0.048	0.044
Building Construction (2028)	0.083	0.428	0.011	0.010
Paving (2028)	0.017	0.138	0.005	0.005
Architectural Coating (2028)	7.988	0.020	0.000	0.000
Total Emissions (tons)	8.91	5.48	0.16	0.15
Total Emissions (lbs)	17824.9	10966.4	324.7	297.2
Average Daily Emissions (lbs/day)	**23.03**	**14.17**	**0.42**	**0.38**
BAAQMD Significance Thresholds	54	54	82	54
Significant Impact?	No	No	No	No

Notes:
BAAQMD = Bay Area Air Quality Management District
lbs = pounds
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
ROG = reactive organic gases

This analysis relies on a 774-day construction schedule, consistent with the construction schedule and modeling results contained in Appendix A. Some construction activities may overlap. The analysis includes dust-reduction measures. Tree demolition is included in the site preparation phase.

The average daily emissions are calculated using 774 construction working days for the proposed project.
Source: Appendix A.

As shown above in Table 4 the proposed project's construction emissions would not exceed any of the applicable significance thresholds without any mitigation. However, the proposed project is in proximity to sensitive receptors (including residences, workers, and schools), and the potential health risks from unmitigated construction emissions, analyzed in AIR-3 below, were found to be significant without the implementation of MM AIR-1. MM AIR-1 will require the use of Tier 4 interim engines on all equipment greater than 50 hp. Implementation of MM AIR-1 will further reduce construction-related criteria air pollutant emissions, as shown in Table 5.

Table 5: Construction Emissions by Construction Year–Mitigated

Construction Activity	Criteria Pollutant Emissions (tons)			
	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Demolition (2025)	0.008	0.343	0.005	0.004

Construction Activity	Criteria Pollutant Emissions (tons)			
	ROG	NO_X	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Site Preparation (2025)	0.004	0.131	0.001	0.001
Grading (2025)	0.008	0.175	0.002	0.002
Building Construction (2025)	0.065	0.414	0.004	0.004
Building Construction (2026)	0.252	1.760	0.019	0.018
Building Construction (2027)	0.245	1.742	0.019	0.018
Building Construction (2028)	0.063	0.449	0.005	0.004
Paving (2028)	0.009	0.149	0.002	0.002
Architectural Coating (2028)	7.987	0.025	0.001	0.001
Total Emissions (tons)	8.640	5.188	0.058	0.054
Total Emissions (lbs)	17280.8	10375.9	116.9	108.7
Average Daily Emissions (lbs/day)	**22.33**	**13.41**	**0.15**	**0.14**
BAAQMD Significance Thresholds	54	54	82	54
Significant Impact?	No	No	No	No

Notes:
BAAQMD = Bay Area Air Quality Management District
lbs = pounds
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
ROG = reactive organic gases

This analysis relies on a 774-day construction schedule, consistent with the construction schedule and modeling results contained in Appendix A. The total working days are 774 days, and some construction activities may overlap. The analysis includes dust-reduction measures. Tree demolition is included in the site preparation phase.

The average daily emissions are calculated using 774 construction working days for the proposed project.
Source: Appendix A.

As discussed above, the proposed project's construction emissions would not exceed any of the applicable significance thresholds (with and without implementation of MM AIR-1). Therefore, the proposed project would have a less than significant impact related to air quality during project construction.

Cumulative Operational Emissions

Operational Air Pollutant Emissions: ROG, NO_X, PM_{10}, and $PM_{2.5}$

Following project construction, long-term operational emissions would be generated resulting from daily operations. Operational emissions would include area, stationary and mobile sources. Area sources would include emissions from architectural coatings, consumer products, and landscape equipment. The proposed project would be all-electric and therefore would not include emissions from the combustion of natural gas for water heaters and other heat sources. Mobile sources

include exhaust and road dust emissions from the automobiles that would travel to and from the proposed project site. Stationary sources include emissions from stationary source equipment, such as backup generators, which would require a permit issued by the BAAQMD. It was conservatively assumed, because of the building height and presence of elevators, that backup generators would be necessary, and these are, therefore, included in the modeling. Pollutants of concern include ROG, NO_X, PM_{10}, and $PM_{2.5}$.

Proposed project operations were analyzed at full buildout assuming completion of construction as early as 2026 and are compared against the BAAQMD quantitative threshold in Table 7. The proposed project would be all-electric in design, and therefore natural gas emissions (energy) are not applicable.

Table 6: Operational Regional Pollutants (Mitigated)

Emissions Source	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
Mobile	1.63	1.28	2.81	0.72
Area	5.55	0.04	0.00	0.00
Energy	–	–	–	–
Stationary	0.02	0.07	0.00	0.00
Off-Road	–	–	–	–
Total (tons/year)	7.211	1.382	2.812	0.730
Total (lbs/year)	14,421	2,674	5,624	1,459
Average Daily (lbs/day)[1]	39.51	7.57	15.41	4.00
Significance Threshold (tons/year)	54	54	82	54
Exceeds Significance Threshold?	**No**	**No**	**No**	**No**

Notes:
BAAQMD = Bay Area Air Quality Management District
lbs = pounds
NO_X = nitrogen oxides
PM_{10} = particulate matterless than 10 microns in diameter
$PM_{2.5}$ = particulate matterless than 10 microns in diameter
ROG = reactive organic gases
[1] The average daily emissions are calculated using 365 operational days in 2026.
Source: Appendix A.

As shown in Table 7, the proposed project's regional daily operational emissions would not exceed any of the BAAQMD thresholds of significance. Therefore, the proposed project would not result in a considerable net increase of any criteria pollutant for which the project region is nonattainment during operation or construction.

Operational Carbon Monoxide Hotspot

The CO emissions from traffic generated by the proposed project are a concern at the local level because congested intersections can result in high, localized concentrations of CO (referred to as a CO hotspot).

The BAAQMD screening criteria were used to determine whether implementing the proposed project could result in local CO emissions that exceed the thresholds of significance. If all the following screening criteria are met, operation of the proposed project would result in a less than significant impact related to CO:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- Project-generated traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

In accordance with SB 743, transportation analysis in accordance with CEQA no longer uses delay-based metrics such as congestion to analyze project impacts. The proposed project is consistent with the land use designation defined in the City's General Plan, which is therefore consistent with the applicable congestion management program, and the proposed project is consistent with the first criterion.

The nearest intersection with recorded daily traffic volumes is Montague Expressway and Interstate 880 (I-880) according to the Caltrans Traffic Census Program[34] which provides traffic volume data for the State highway system. According to the Traffic Census Program, the sections of I-880 near the project site (at Montague Expressway) receive a peak-hour traffic volume of 13,900 vehicles, respectively. According to the traffic study prepared by Hexagon, the proposed project is anticipated to generate 2,889 daily trips. Therefore, even with the addition of daily trips generated by the proposed project, no nearby intersections impacted by the proposed project would experience traffic volumes of 44,000 vehicles per hour. Thus, the proposed project would not result in any nearby intersection having peak-hour traffic volumes exceeding 44,000 vehicles per hour.

Based on the above criteria, the proposed project would not exceed the CO screening criteria and would have a less than significant impact related to CO.

Level of Significance

Less than significant impact with mitigation.

[34] California Department of Transportation (Caltrans). Traffic Census Program. Website: https://dot.ca.gov/programs/traffic-operations/census. Accessed June 2, 2024.

Mitigation Measures

Implement MM AIR-1.

6.2.3 - Sensitive Receptors

Impact AIR-3:	**The proposed project could expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis

The proposed project could expose sensitive receptors to substantial pollutant concentrations and adverse health effects if it causes or contributes significantly to elevated pollutant concentration levels. The proposed project is within 1,000 feet of existing receptors, including multi-family residences, three schools, and off-site workers. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects. As the proposed project would constitute the development of approximately 737 multi-family dwelling units—which are not associated with ongoing emissions of elevated pollutant concentrations—an HRA for construction only was prepared for the proposed project. The results of the HRA are summarized below and additional details including assumptions and model inputs and results are contained within Appendix A.

The BAAQMD has defined health risk significance thresholds for use in evaluating a project and its potential impact to nearby sensitive receptors. These thresholds are represented as a cancer risk to the public and a non-cancer hazard from exposures to TACs. Cancer risk represents the probability (in terms of risk per million individuals) that an individual would contract cancer resulting from exposure to potential carcinogens over a specified exposure duration. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF). A risk level of 10 in a million implies a likelihood (or risk) that up to 10 persons out of 1 million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of TACs over a specified duration of time. This risk would be an excess cancer risk that is in addition to any environmental cancer risk borne by a person not exposed to these air toxins.

Construction

Diesel Particulate Matter and Cancer Risks

As previously discussed in the Methodology section, the HRA follows BAAQMD and OEHHA guidance and recommended methodologies for conducting health risk assessments. The methods focus on directly emitted TACs and $PM_{2.5}$ and not those formed through secondary reactions in the atmosphere. The proposed project would accommodate the construction of 737 multi-family dwelling units. During construction, the proposed project would result in emissions of several TACs, as well as $PM_{2.5}$ emissions that could potentially impact nearby sensitive receptors.

The principal TAC emission analyzed in this assessment was DPM from operation of off-road equipment and diesel fuel delivery and worker vehicles during construction and operation. DPM has been identified by the ARB as a carcinogenic substance. For purposes of this analysis, DPM is

represented as exhaust emissions of PM_{10}. $PM_{2.5}$ emissions from re-entrained road dust and brake and tire wear are also included in the assessment.

The following project characteristics and assumptions utilized in the HRA include:

- Construction emissions were modeled to include on-site emissions from construction equipment as well as vendor and truck haul trips traversing routes within 1,000 feet of the project site;
- Construction was assumed to begin in August 2025 and was modeled for 774 workdays (6,192 total working hours);
- The construction emissions were modeled in both unmitigated and mitigated scenarios (assuming the use of Tier 4 interim construction equipment);
- The HRA identified a Maximally Exposed Individual Resident (MEIR), a Maximally Exposed Individual Worker (MEIW), and student receptors at three nearby schools (within 1,000 feet of the proposed project); estimated health risks and $PM_{2.5}$ concentrations at the MEIR, MEIW, and schools were compared to BAAQMD thresholds; and
- The schools within 1,000 feet of the proposed project site include the Abram Agnes Elementary School, the Delores Huerto Middle School, and the Kathleen MacDonald High School.

Residential Cancer Risk–Cancer risk for individual resident receptors exposed to "Diesel Particulate Exhaust" (or DPM) were calculated utilizing the "Risk Management Policy" option for inhalation, specifying that residents spend 100 percent time at home for ages less than 16 years old. Consistent with OEHHA guidance, the start of residential exposure was assumed to occur in the third trimester (-0.25 years) to accommodate the increased susceptibility of exposures in early life. Because the construction is anticipated to occur for approximately 3 years, the residential exposure starts with the unborn child at the third trimester (when construction begins) and continues until the child is 2.75 years of age. Because there are no significant sources of TAC emissions during operations, the exposure assessment is limited to the duration of the proposed project construction or three years.

Non-cancer Chronic Health Risks–Chronic RELs are used to assess not only residential health impacts.

Worker Cancer Risk–Cancer risk and the chronic hazard index was calculated for the maximum impacted off-site worker based on the maximum DPM concentration at identified off-site receptors. Eight-hour breathing rates for moderate intensity activities of 230 liters to kilograms8 hours (applicable to 16- to 70-year-old adults) were used to calculate the daily dose via the inhalation route to the worker. The analysis assumes a start age of 16 years and an exposure duration equivalent to the construction duration of 3 years.

Because the construction emissions were modeled as non-continuous source, the worker adjustment factor was used to adjust for the proper exposure concentration. When modeling a non-continuously emitting source (e.g., operating for 8 hours per day and 5 days per week), the modeled long-term average concentrations are based on 24 hours per day and 7 days per week for the period

of the meteorological data set. Even though the emitting source is modeled using a non-continuous emissions schedule, the long-term concentration is still based on 24 hours a day and 7 days per week. Thus, this concentration includes the zero hours when the source was not operating.

The worker adjustment factor (WAF) is used to determine the long-term concentration the worker is breathing during their work shift. Therefore, the long-term concentration is adjusted so it is based on only the hours when the worker is present. For this project, assuming the emitting source and worker's schedules are the same, the adjustment factor is 4.2 = (24 hours per day/8 hours per shift) x (7 days in a week/5 days in a work week).

HARP2 provides for the specification of the WAF for worker cancer risk assessments, and this was entered as 4.2 to make this adjustment.

Student Cancer Risk–Student cancer risk and chronic hazards were determined for Abram Agne Elementary School, Dolores Huerto Middle School, and Kathleen MacDonald High School (all located on adjacent campuses within 1,000 feet of the project site). Cancer risks utilized the 95th percentile 8-hour breathing rates for moderate activity specific to the age ranges specified for students. These breathing rates are documented in the OEHHA 2015 guidance document.

The elementary student risk calculations utilized a starting exposure age appropriate to elementary students (assumed 5 years of age) and a project-specific exposure duration of 3 years. For students ages 2 to 9 years, HARP2 uses a breathing rate of 640 (L/kg per 8 hours).

The middle school and high school student risk calculations utilized a starting exposure age appropriate to these grade spans (11 and 14 years, respectively) and a project-specific exposure duration of 3 years. For students ages 9 years and older, HARP2 uses the breathing rate of 520 (L/kg-hour) applicable to ages 2 to 16, consistent with BAAQMD-recommended exposure values.

Similar to the worker scenario, student exposures occur only when the non-continuous construction sources are emitting and thus students similarly inhale air with concentrations that are higher than AERMOD-predicted long-term average concentrations. Therefore, the Worker (or Student) Adjustment Factor of 4.2 is also applied to the AERMOD-predicted annual concentrations for the evaluation of student cancer risk.

Non-cancer Chronic Health Risks–Chronic RELs are used to assess not only residential health impacts, but also worker and student health impacts.

Potential chronic non-cancer health impacts use the long-term annual average concentration regardless of the emitting facility's schedule. As per OEHHA guidance, no adjustment factors were used to adjust this concentration for workers or students.

HARP2 Inputs and Result–HARP2 model runs are included in Appendix A to document the HRA exposure parameters and risk results for cancer and non-cancer chronic health effects included for the MEIR, MEIW, Abram Agnes Elementary School, Dolores Huerto Middle School, Kathleen MacDonald High School, all residential receptors, and all nonresidential receptors.

The estimated health and hazard impacts at the residential MEIR, MEIW, and Students are provided in Table 7.

Table 7: Summary of Health Risks (Unmitigated Construction)

Impact Scenario	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index	$PM_{2.5}$ Concentration (µg/m)
Residential Maximally Exposed Individual Resident (MEIR)			
Unmitigated Project Construction	11.63	0.01	0.084
Thresholds of Significance	10	1	0.3
Exceeds Individual Source Threshold	**Yes**	**No**	**No**
Worker Maximally Exposed Individual Worker (MEIW)			
Unmitigated Project Construction	1.63	0.01	0.118
Thresholds of Significance	10	1	0.3
Exceeds Individual Source Threshold	**No**	**No**	**No**
Abram Agnes Elementary School			
Unmitigated Project Construction	3.26	<0.005	0.03
Thresholds of Significance	10	1	0.3
Exceeds Individual Source Threshold	**No**	**No**	**No**
Dolores Huerta Middle School			
Unmitigated Project Construction	1.42	<0.005	0.02
Thresholds of Significance	10	1	0.3
Exceeds Individual Source Threshold	**No**	**No**	**No**
Kathleen MacDonald High School			
Unmitigated Project Construction	0.34	<0.005	0.005
Thresholds of Significance	10	1	0.3
Exceeds Individual Source Threshold	**No**	**No**	**No**
Thresholds of Significance	10	1	0.3
Exceeds Individual Source Threshold?	**No**	**No**	**No**

Notes:
Notes:
$PM_{2.5}$ = particulate matter 2.5 micrometers or less in diameter
µg/m^3 = micrograms per cubic meter
Cancer risk is identified by multiplying the risk sum from HARP2 by 1,000,000.
Source of Thresholds: Bay Area Air Quality Management District (BAAQMD). 2022. California Environmental Quality Act Air Quality Guidelines.
Sources of Project-specific Data: Appendix A.

As identified in the HRA and shown in Table 7, the proposed project's construction DPM emissions would result in exceedance of the cancer risk thresholds at the residential MEIR and would require

the implementation of MM AIR-1 to ensure impacts are less than significant. MM AIR-1 would ensure that emissions of DPM are reduced by requiring the use of Tier 4 interim engines for all construction equipment equal to or greater than 25 horsepower. As shown in Table 8 below, implementation of MM AIR-1 would ensure that construction DPM emissions generated by the proposed project would not result in exceedance of BAAQMD cancer risk and chronic non-cancer HI thresholds. Neither the MEIW nor the Student receptors exceed the significance thresholds in the unmitigated scenario; therefore, only the residential MEIR is shown in the table below.

Table 8: Summary of Health Risks at the MEIR (Mitigated Construction)

Impact Scenario	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index	$PM_{2.5}$ Concentration (μg/m)
Maximally Exposed Individual Resident (MEIR)			
Mitigated Project Construction	3.60	0.006	0.05
Thresholds of Significance	10	1	0.3
Exceeds Individual Source Threshold	**No**	**No**	**No**

Notes:
$PM_{2.5}$ = particulate matter 2.5 micrometers or less in diameter
$\mu g/m^3$ = micrograms per cubic meter
Cancer risk is identified by multiplying the risk sum from HARP2 by 1,000,000.
Source of Thresholds: Bay Area Air Quality Management District (BAAQMD). 2022. California Environmental Quality Act Air Quality Guidelines.
Sources of Project-specific Data: Appendix A.

Cumulative Health Risk Assessment

The BAAQMD recommends assessing the potential cumulative impacts from sources of TACs within 1,000 feet of a project. As a result, a cumulative HRA was performed that examined the cumulative impacts of the proposed project's construction emissions and existing sources of TAC emissions within 1,000 feet of the proposed project.

For a project-level analysis, BAAQMD provides several tools for use in screening potential sources of TACs. This includes the Stationary Source Screening Map[35] which provides all the stationary sources permitted by the Air District with risk and hazard estimates; Roadway Screening Data Layers providing estimated cancer risks, hazards, and $PM_{2.5}$ concentrations for all Bay Area highways and surface streets;and Rail and Railyard Screening Data Layers,The providing estimated cancer risks, hazards, and $PM_{2.5}$ concentrations from diesel locomotives and select railyards.

The cumulative health risk results during project construction, including health risks from the existing stationary sources, roadway, and rail data from the BAAQMD sources above, are summarized in Table 8. Outputs from the BAAQMD screening tools are documented in Appendix A.

[35] Bay Area Air Quality Management District (BAAQMD). 2023. Stationary Source Screening Map. Website: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3. Accessed June 1, 2024.

Table 9: Cumulative Health Impacts at the MEIR during Construction

Source	Cancer Risk (per million)	Chronic Hazard index	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Risks at the Maximally Exposed Individual Residence (MEIR)			
Mitigated Construction	3.60	0.006	0.05
BAAQMD Permitted Stationary Source: Generator (Facility ID: 200384)	3.93	0.00	0.01
Air Basin Roadways at the Proposed Project	9.57	0.04	0.29
Air Basin Railways at the Proposed Project	0.00	0.00	0.00
Cumulative Health Risks	17.10	0.04	0.35
BAAQMD's Cumulative Thresholds of Significance	100	10	0.8
Threshold Exceeded?	**No**	**No**	**No**

Notes:
BAAQMD = Bay Area Air Quality Management District.
$PM_{2.5}$ = particulate matter, including dust, 2.5 micrometers or less in diameter
$\mu g/m^3$ = micrograms per cubic meter
As shown in Table 7, the MEIR represents the maximally exposed receptor and health risks at the MEIW and School receptors are lower than the MEIR. Therefore, only values for the MEIR are shown in Table 8.

As noted in Table 8, the cumulative health impacts from mitigated project construction and existing sources of TACs would be less than the BAAQMD cumulative thresholds of significance for cancer risk, non-cancer chronic hazards, and annual $PM_{2.5}$ concentrations. The proposed project, along with cumulative sources of nearby TAC emissions, would be below the BAAQMD's cumulative thresholds of significance. Accordingly, the proposed project would not have a cumulatively considerable impact.

Project as a Receptor

Pursuant to the City's General Plan Policy MS-11.1, new residential projects categorized as sensitive receptors should incorporate effective mitigation into project designs or be located an adequate distance from sources of TACs to avoid significant risks to health and safety.

To determine the necessity of measures beyond those already required for the proposed project through compliance with regulations, the BAAQMD screening analysis was applied at the project site to evaluate whether existing TACs could adversely affect individuals living within the proposed project. The BAAQMD-provided tools for screening potential sources of TACs were used for this purpose.

Table 9 summarizes the cumulative health impacts at the proposed project site at project buildout.

Table 10: Summary of the Cumulative Health Impacts at the Project Site

Source Name/Type	Cancer Risk (per million)	Chronic Hazard Index	Maximum Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
BAAQMD Permitted Stationary Source: Generator (Facility ID: 200384)	3.93	0.00	0.01
Existing Roadways[1]	19.57	0.09	.715
Existing Railways	0.00	0.00	0.00
Cumulative Health Risks			
Cumulative Total	23.50	0.09	0.725
BAAQMD Cumulative Thresholds of Significance	**100**	**10**	**0.8**
Threshold Exceedance?	**No**	**No**	**No**

Notes:
$\mu g/m^3$ = micrograms per cubic meter
BAAQMD = Bay Area Air Quality Management District
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
[1] Greatest value for cancer risk, chronic hazard index and annual $PM_{2.5}$ concentrations on-site was found at coordinates UTM 594592.2 E 4140300 N
Source: Appendix A.

As shown in Table 9, the cumulative health impacts to the future on-site residents from existing TAC emission sources located within 1,000 feet of the project site are far below BAAQMD's cumulative significance thresholds for cancer risk, chronic hazards, and annual $PM_{2.5}$ concentrations. As such, the proposed project would result in less than significant cumulative health impacts related to exposing sensitive receptors to substantial concentrations of pollutants. Thus, the cumulative health risk impacts from project construction and operation would be less than significant after incorporated of MM AIR-1.

Level of Significance

Potentially significant impact with mitigation.

Mitigation Measures

Implement MM AIR-1.

6.2.4 - Objectionable Odors

Impact AIR-4:	**The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.**

Impact Analysis

According to BAAQMD 2022 CEQA Guidelines, odor impacts could occur if the proposed project introduces a new odor source near existing receptors. The BAAQMD provides a list of recommended

odor screening distances for specific odor-generating facilities. Multi-family residences are not odor-generating facilities (according to BAAQMD).

Potential sources that may emit odors during construction activities include exhaust from diesel construction equipment. However, because of the temporary nature of these emissions, the intermittent nature of construction activities, and the highly diffusive properties of diesel PM exhaust, nearby receptors would not be affected by diesel exhaust odors associated with project construction. Odors from these sources would be localized and generally confined to the immediate area surrounding the proposed project site. The proposed project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Thus, the proposed project would not introduce a new odor source near existing receptors during construction.

The proposed project would involve the development of residences whose operations could lead to odors from associated laundry cleaning, vehicle exhaust, outdoor cooking, and waste disposal. However, such odors generated by project operation would be small in quantity and duration and likely not generate objectionable odors that may affect a substantial number of nearby receptors. Thus, the proposed project would not introduce a new odor source near existing receptors during operation.

Accordingly, odor impacts would be less than significant.

Level of Significance

Less than significant impact.

Mitigation Measures

None required.

SECTION 7: GREENHOUSE GAS IMPACT ANALYSIS

7.1 - CEQA Guidelines

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine whether a project would have a significant impact on GHGs, the type, level, and impact of emissions generated by the proposed project must be evaluated.

7.1.1 - Thresholds of Significance for the Proposed Project

The BAAQMD's 2022 CEQA Air Quality Guidelines provide recommended significance thresholds for GHGs for land use development projects and plans. The new thresholds state that, if a project would contribute its "fair share" of what will be required to achieve California's long-term climate goal of carbon neutrality by 2045, then a reviewing agency can find that the impact will not be significant because the project will help to solve the problem of global climate change. The thresholds for new land use projects require projects to meet either one of two enumerated Criteria "A" or "B" as shown below. If a land use development project cannot demonstrate consistency with Criterion A or Criterion B, then that project would result in a potentially significant impact related to the generation of direct and indirect GHG emissions.

BAAQMD Thresholds for Land Use Projects (Must Include A or B)

A. Projects must include, at a minimum, the following project design elements:

1. Buildings
   a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
   b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
2. Transportation
   a. Achieve a reduction in project-generated Vehicle Miles Traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the California Governor's Office of Planning and Research's (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA:
      i. Residential projects: 15 percent below the existing VMT per capita
      ii. Office projects: 15 percent below the existing VMT per employee
      iii. Retail projects: no net increase in existing VMT
   b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Source: Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Guidelines. April 20.

Project consistency with Criteria A is based on incorporating project design criteria founded on key attributes consistent with the 2022 Scoping Plan and the State's long-term carbon neutrality goals.

Projects incorporating these elements would be contributing their "fair share" of what will be required to achieve California's long-term climate goal of carbon neutrality by 2045. These include criteria for building energy design (elimination of natural gas) as well as criteria related to reduction in transportation emissions via VMT reductions and installation of EV charging infrastructure.

Project consistency with Criterion B involves demonstrating compliance with a local "qualified" GHG plan. CEQA Guidelines Section 15183.5(b) allows projects and plans to be analyzed through a streamlined or tiered approach utilizing an adopted Greenhouse Gas Reduction Plan. A "qualified" reduction strategy capable of being utilized for a streamlined or tiered analysis under CEQA must meet the following requirements:

- Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
- Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
- Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendments if the plan is not achieving specified levels; and
- Be adopted in a public process following environmental review.

In 2020, the City adopted a Greenhouse Gas Reduction Strategy (GHGRS) that outlines the actions the City will undertake to achieve its proportional share of State GHG emission reductions for the interim target year 2030. The purpose of the Greenhouse Gas Reduction Strategy Compliance Checklist (Checklist) is to:

- Implement GHG reduction strategies from the 2030 GHGRS to new development projects.
- Provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to CEQA.

The 2030 GHGRS presents the City's comprehensive path to reduce GHG emissions to achieve the 2030 reduction target, based on SB 32, BAAQMD, and OPR. Additionally, the 2030 GHGRS leverages other important City plans and policies, including the General Plan, Climate Smart San José, and the City Municipal Code, in identifying reductions strategies that achieve the City's target. CEQA Guidelines Section 15183.5 allows public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of GHGs. Accordingly, the City's 2030 GHGRS represents San José's qualified Climate Action Plan (CAP) in compliance with CEQA.

As described in the 2030 GHGRS, these GHG reductions will occur through a combination of City initiatives in various plans and policies and will provide reductions from both existing and new

developments. This Compliance Checklist specifically applies to proposed discretionary projects that require environmental review pursuant to CEQA. Therefore, the Checklist is a critical implementation tool in the City's overall strategy to reduce GHG emissions. Implementation of applicable reduction actions in new development projects will help the City achieve incremental reductions toward its target. Per the 2030 GHGRS, the City will monitor strategy implementation and make updates, as necessary, to maintain an appropriate trajectory to the 2030 GHG target.

Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the GHGRS.

7.2 - Impact Analysis

7.2.1 - Greenhouse Gas Inventory

Impact GHG-1: **The proposed project would not generate direct and indirect greenhouse gas emissions that would result in a significant impact on the environment.**

Impact Analysis

Both construction and operational activities have the potential to generate GHG emissions. The proposed project would generate GHG emissions during temporary (short-term) construction activities such as removal of trees, site grading, operation of construction equipment, operation of on-site heavy-duty construction vehicles, hauling of materials to and from the project site, asphalt paving, and construction worker vehicle trips. On-site construction activities would vary depending on the level of construction activity.

Long-term, operational GHG emissions would result from project-generated vehicular traffic, operation of any landscaping equipment, off-site generation of electrical power over the life of the proposed project, the energy required to convey water to and wastewater from the project site, the emissions associated with the hauling and disposal of solid waste from the project site, any fugitive refrigerants from air conditioning or refrigerators, and the operation of any proposed stationary sources such as backup generators or fire pumps (not applicable for the proposed project).

Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough GHG emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact. Therefore, this section measures the proposed project's incremental contribution to the cumulative environmental impact. The following is a discussion of the proposed project's contribution to GHG emissions during both the construction and operation phases. The proposed project's GHG emissions are quantified for informational purposes only.

Project Emissions (for Informational Purposes)

Construction

The proposed project's construction emissions are presented in Table 10. It should be noted that the analysis conservatively assumes that construction would begin mid-2025. As vehicle and equipment fuel efficiencies and emission control standards continue to incrementally improve with each year, project construction emissions are likely to decrease nominally from what is shown in Table 11 should the construction schedule move to later years. Therefore, the construction GHG emissions contained in Table 10 represent a conservative assessment of project construction emissions.

Table 11: Proposed Project Construction GHG Emissions

Construction Activity	Total GHG Emissions (MT CO_2e per year)
Demolition (2025)	196.936
Site Preparation (2025)	66.577
Grading (2025)	55.392
Building Construction (2025)	243.535
Building Construction (2026)	1044.239
Building Construction (2027)	1030.050
Building Construction (2028)	266.966
Paving (2028)	35.483
Architectural Coating (2028)	16.410
Total Construction Emissions	2955.588
Emissions Amortized Over 30 Years[1]	98.520

Notes:
GHG = greenhouse gas
MT CO_2e = metric tons carbon dioxide equivalent
Totals may not appear to sum exactly due to rounding.
[1] Construction GHG emissions are amortized over the 30-year lifetime of the proposed project.
Source: Appendix A.

As shown above, the proposed project would generate approximately 2,955.588 MT CO_2e during construction. There is no proposed construction-related climate impact threshold at this time. GHG emissions from construction represent a very small portion of a project's lifetime GHG emissions. The proposed thresholds for land use projects are designed to address operational GHG emissions which represent the vast majority of project GHG emissions. Furthermore, construction GHG emissions are amortized over 30 years and accounted for as part of operational GHG emissions. Operational GHG impact is discussed below. As demonstrated below, the proposed project (during construction and operation) would have less than significant GHG impacts.

Operation

Operational or long-term emissions occur over the life of the project. Project operations were modeled for the 2026 operational year, which could be considered the earliest time of operation for Phase 1 of the proposed project. Sources for operational emissions are summarized below and are described in more detail in the Modeling Parameters and Assumptions section. Sources for operational GHG emissions include:

- **Motor Vehicles:** These emissions refer to GHG emissions contained in the exhaust from the cars and trucks that would travel to and from the project site.
- **Natural Gas:** These emissions refer to the GHG emissions that occur when natural gas is burned on the project site. Pursuant to the City's Reach Code, the proposed project would be required to be all-electric in design, and therefore natural gas emissions are not applicable.
- **Indirect Electricity:** These emissions refer to those generated by off-site power plants to supply electricity required for the project.
- **Area Sources:** These emissions refer to those produced during activities such as landscape maintenance.
- **Water Transport:** These emissions refer to those generated by the electricity required to transport and treat the water to be used on the project site.
- **Waste:** These emissions refer to the GHG emissions produced by decomposing waste generated by the project.
- **Stationary Sources:** Due to the height of the buildings, it was conservatively assumed that there would be 295-hp backup generators in the market-rate and affordable apartment buildings.

Table 12 presents the estimated annual GHG emissions from the proposed project's operational activities. As shown in Table 12, the proposed project would generate approximately 3,467 MT CO_2e per year after the inclusion of 98.5 MT CO_2e per year from project construction.

Table 12: Operational Greenhouse Gas Emissions

GHG Emissions Source	GHG Emissions (MT CO_2e per year)
Mobile	2,701
Area	9
Energy	422
Water	53
Waste	170
Refrigerants	1
Stationary	11
Amortized Construction Emissions	98.5

GHG Emissions Source	GHG Emissions (MT CO_2e per year)
Total Annual Project Emissions	3,467
Notes: MT CO_2e = metric tons carbon dioxide equivalent Totals were summed using unrounded numbers and may not appear to sum exactly due to rounding. Source: Appendix A.	

The proposed project's consistency with applicable plans, policy, or regulations of an agency adopted to reduce GHG emissions is discussed below.

7.2.2 - Project Impact

Construction

BAAQMD does not have thresholds of significance for construction-related GHG emissions. GHG emissions from construction activities are one-time, short-term emissions and therefore would not significantly contribute to long-term cumulative GHG emissions impacts of the proposed project. Therefore, construction emissions would be less than significant.

Operation

Long-term operational GHG emissions would result from project-generated vehicular traffic, operation of any landscaping equipment, off-site generation of electrical power over the life of the project, the energy required to convey water to and wastewater from the project site, and the emissions associated with the hauling and disposal of solid waste from the project site.

As previously described, in 2020, the City adopted a GHGRS that outlines the actions the City will undertake to achieve its proportional share of State GHG emissions reductions for the interim target year 2030. As with all residential projects within the City, the proposed project is subject to the GHG reduction strategies identified in the City's 2030 GHGRS Compliance Checklist (Appendix A). The proposed project would implement and comply with all relevant GHG reduction measures as determined by the City. A complete project comparison is included as Appendix A. In summary, GHG reduction strategies to be incorporated into the proposed project include the following:

- **General Plan Policy Compliance**: The proposed project would demonstrate consistency with the General Plan Land Use and Circulation Diagram and is consistent with the General Plan policies related to green building; pedestrian, bicycle and transit site design; and water conservation and urban forestry, as applicable.
- **Implementation of Green Building Measures:** The proposed project would include solar PV arrays that meet CALGreen standards and the City's Reach Code; will feature numerous sustainability features, including the use of high-quality construction materials with longer lifespan to reduce construction waste; and will be all-electric in design to reduce fossil fuel use.

- **Pedestrian, Bicycle and Transit Site Design Measures:** The proposed project would feature ample pedestrian and bicycle connections throughout the site, and in connection with the nearby existing public bicycle, pedestrian and public transit network. The interior of the site features bicycle paths and bicycle parking, ample common outdoor space, interior sidewalks, pedestrian-oriented landscaping and seating areas, and a pedestrian-only thoroughfare (between the affordable apartments and market-rate apartments). The proposed project includes on-site landscaping and new tree plantings and bicycle connections. Impervious surfaces in the form of vehicular access are limited. Surface parking lots are not included in the proposed project, thereby adding density and housing to a previously underutilized site (all parking is covered, which could be used to facilitate car-sharing spaces). The proposed project is also along an existing public transit route with ample bicycle circulation and includes bicycle, connections, pedestrian thoroughfares and connections to the existing streets and public transit network. The proposed project exceeds the bicycle parking requirements in both the market-rate and affordable buildings.
- **Water Conservation and Urban Forestry Measures:** The proposed project would implement native tree planting and species to reduce the need for irrigation. In addition, the proposed project would comply with all State and local water efficiency requirements and regulations; may implement the use of recycled water in landscape irrigation if deemed cost-effective or feasible; and would encourage stormwater reuse on-site where feasible.

The proposed project complies with the requirements of the GHGRS adopted by the City in 2020. Furthermore, it was conservatively assumed that the proposed project may include backup generators (due to their building height); according to BAAQMD CEQA guidance, the GHG emissions from permitted sources would not be subject to the land use threshold of significance (as detailed in Section 7.1.1) but instead would be subject to the stationary source threshold recommended by BAAQMD. According to BAAQMD, many projects will require the use of both land use and stationary source thresholds. For a project to have a less than significant impact related to stationary sources of GHG emissions, it must fall below the bright-line threshold of producing less than 10,000 MT CO_2e per year.[36] As shown in Table 11, the annual CO_2e emissions associated with the operation of backup generators at the proposed project is anticipated to be 11.27 MT CO_2e. Therefore, the proposed project's incremental contribution to a cumulative GHG emissions effect is not considered to be cumulatively considerable when compared to the appropriate land use and stationary source thresholds. GHG impacts would be less than significant.

Level of Significance

Less than significant impact.

Mitigation Measures

None required.

[36] Bay Area Air Quality Management District (BAAQMD). 2022 CEQA Guidelines. 2022. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-6-project-climate-impacts_final-pdf.pdf?rev=ce3ba3fe9d39448f9c15bbabd8c36c7f&sc_lang=en. Accessed October 11, 2024.

Impact GHG-2: The proposed project would not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Consistency of the proposed project with respect to ARB's 2022 Scoping Plan, Plan Bay Area 2050, CALGreen and City reach codes, and the City's GHGRS is discussed below.

2022 Scoping Plan Update

The principal State plan and policy for GHG emission reduction targets are set forth in Executive Order S-03-05, AB 32, and the subsequent SB 32. The quantitative goal of AB 32 was to reduce GHG emissions to 1990 levels by 2020. AB 32 required the ARB to develop a Scoping Plan that described California's approach to reducing GHGs to achieve the 2020 emission target. This target was ultimately achieved 4 years earlier than mandated. SB 32 then accelerated the GHG emission reduction goals of AB 32. The 2022 Scoping Plan, the most recent update to the ARB Scoping Plan, reflects the 2030 target of a 40 percent reduction below 1990 levels as set by Executive Order B-30-15 and codified by SB 32. It is applicable to State agencies but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require the City to adopt policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the State agencies outlined in the Scoping Plan result in GHG emissions reductions at the local level, for example, through Statewide building codes. As a result, local jurisdictions benefit from reductions in transportation emissions, increases in water efficiency in the building and landscape codes, and other Statewide actions that affect a local jurisdiction's emissions inventory from the top down.

Table 13 demonstrates the consistency of the proposed project with the applicable reduction measures and recommendations contained in ARB's 2022 Scoping Plan.

Table 13: 2022 Scoping Plan Consistency

2022 Scoping Action Plan	Consistency Determination
Increase in Renewable Energy and Decrease in Oil and Gas Use Actions	**Consistent.** Consistent with the City's Reach Code, the proposed project would be constructed as all-electric buildings. Electricity supplied to the proposed project is supplied by an increasing percentage of renewable sources to meet SB 100 requirements.
Low Carbon Fuels Actions	**Vehicular traffic associated with the proposed project would use fuels subject to the requirements of the LCFS.**
Expansion of Electrical Infrastructure Actions	**Consistent.** The proposed project would comply with mandatory CALGreen requirements. Furthermore, the City's Reach Code meets CALGreen Tier 2 EV Charging criteria.
Climate Ready and Climate-Friendly Buildings	**Consistent.** All development proposed as part of the project would comply with current Title 24 and CALGreen standards, which promote energy efficiency, increased use of renewable energy ,and incorporation of sustainable design features in construction and operation.

2022 Scoping Action Plan	Consistency Determination
Expanded Use of Zero-Emission Mobile Source Technology Actions	**Consistent.** The proposed project would comply with mandatory CALGreen requirements. Furthermore, the City's Reach Code meets CALGreen Tier 2 EV Charging criteria.
Organic Waste Diversion and Composing Actions	**Consistent.** Consistent with SB 1383, the City would provide mandatory organic waste diversion and composting services to all residents of the proposed project. The City has adopted ordinances and policies in compliance with SB 1383. Solid waste and recycling collection, disposal, and processing in the City would be conducted in accordance with State law.
Source: California Air Resources Board (ARB). 2022. 2022 Scoping Plan for Achieving Carbon Neutrality.	

Plan Bay Area 2050

Plan Bay Area 2050 is the Bay Area's regional plan that aims to improve housing, the economy, transportation, and the environment by making the Bay Area more equitable and resilient for all residents. Plan Bay Area 2050 identifies opportunities to reduce regional GHG emissions in housing, economic, and transportation sectors. The proposed project would be developed in an area with existing infrastructure on a developed project site. It would replace the older, less energy-efficient buildings with state-of-the-art structures, produce renewable energy, and improve solid waste removal and recycling services for the community, consistent with the Plan Bay Area's aim of reducing regional GHG emissions. Plan Bay Area 2050 was prepared in coordination with Bay Area cities, and the goals, policies, and programs within Plan Bay Area incorporate the existing land uses of those cities. The proposed project is consistent with the site's land use designation and therefore does not conflict with the land use concept plan in Plan Bay Area 2050.

San José GHGRS

The proposed project's consistency with the City's GHGRS is discussed above in Impact GHG-1. As previously discussed, the proposed project would implement and comply with all GHG reduction measures and is considered consistent with the GHGRS. A complete project comparison is included in Appendix A.

CALGreen and City Reach Codes

The proposed project would be required to comply with the most recent update to the CALGreen, as well as the City's Reach Code, which aim to achieve energy savings and GHG reductions beyond the State's minimum requirements.

Summary

The proposed project would be consistent with the reduction measures identified in the ARB's 2022 Scoping Plans and with Plan Bay Area 2050. In addition, the proposed project would be consistent with CALGreen, the City's Reach Code and the City's GHGRS. Therefore, impacts would be less than significant.

Level of Significance

Less than significant impact.

Mitigation Measures

None required.

SECTION 8: ENERGY IMPACT ANALYSIS

8.1 - CEQA Guidelines

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine whether a project would have a significant impact on energy, the type, level, and impact of emissions generated by the proposed project must be evaluated.

The following energy significance thresholds are contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the proposed 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.

8.2 - Impact Analysis

8.2.1 - Project Energy Consumption

Impact ENER-1:	**The proposed project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during construction or operation.**

Impact Analysis

A discussion of the proposed project's anticipated energy usage is presented below. PG&E provides electricity service to the proposed project site. Energy use consumed by the proposed project was estimated and includes electricity and fuel consumption for project construction and operation. Energy calculations are included as part of Appendix A.

Construction Impacts

The proposed project's construction was assumed to begin in August 2025 and last approximately 35 months, based on applicant-provided information. If the construction schedule moves to later years, construction emissions would likely decrease because of improvements in technology and more stringent regulatory requirements as older, less efficient equipment is replaced by newer and cleaner equipment. The proposed project would require demolition, site preparation, grading, building construction, architectural coating, and paving. The construction phase would require energy for demolition of the site, the manufacture and transportation of building materials, preparation of the site (e.g., site clearing and grading), and the actual construction of the buildings. Petroleum-based fuels such as diesel fuel and gasoline would be the primary sources of energy for these tasks.

The types of on-site equipment used during construction of the proposed project could include gasoline- and diesel-powered construction and transportation equipment, including trucks,

excavators, forklifts, and pavers. Construction equipment is estimated to consume a total of 307,351 gallons of diesel fuel over the entire construction duration (Appendix A).

Fuel use associated with construction vehicle trips generated by the proposed project was also estimated; trips include construction worker trips, haul truck trips for material transport, and vendor trips for construction material deliveries. Fuel use from these vehicles traveling to the proposed project site was based on (1) the projected number of trips the proposed project would generate during construction, (2) average trip distances by trip type, and (3) fuel efficiencies estimated in the ARB EMFAC mobile source emission model. The specific parameters used to estimate fuel usage are included in Appendix A. In total, the proposed project is estimated to generate 4,654,785 VMT and 221,912 gallons of combined gasoline and diesel for vehicle travel during construction.

The overall construction schedule and process is already designed to be efficient in order to avoid excess monetary costs. For example, equipment and fuel are not typically used wastefully due to the added expense associated with renting the equipment, maintaining it, and fueling it. Therefore, the opportunities for future efficiency gains during construction are limited. Thus, it is anticipated that the construction phase of the proposed project would not result in wasteful, inefficient, and unnecessary consumption of energy. Construction-related energy impacts would be less than significant.

Operational Impacts

The proposed project would consume energy as part of building operations and transportation activities. As previously discussed, the proposed project would be all-electric and therefore will not be associated with natural gas use. Project energy consumption is summarized in Table 14.

Table 14: Estimated Annual Project Energy Consumption (Operation)

Energy Consumption Activity	Annual Consumption
Operation Vehicle Fuel Consumption	274,441 gallons of gasoline 26,330 gallons of diesel 1,231 gallons of compressed natural gas (CNG) 172,559 kWh of electricity
Building Energy Consumption	4,519,315 kWh of electricity
Notes: kWh = kilowatt hour MMBTU = Million Metric British Thermal Units Source: Appendix A	

As previously discussed, the proposed project would be considered to result in a potentially significant impact if it would result in wasteful, inefficient, or unnecessary consumption of energy resources. Considering the guidance provided by Appendix F of the CEQA Guidelines and the Appellate Court decision in *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) 75

Cal.App.5th 63, 164-168, the proposed project would be considered to result in wasteful, inefficient, or unnecessary consumption of energy resources if it would conflict with the following energy conservation goals:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas, or oil; and
- Increasing reliance on renewable energy sources.

Decreasing Overall Per Capita Energy Consumption

The proposed project's buildings would be designed and constructed in accordance with CALGreen energy efficiency standards of Title 24. Title 24 standards include a broad set of energy conservation requirements that apply to the structural, mechanical, electrical, and plumbing systems in a building. For example, the Title 24 Lighting Power Density requirements define the maximum wattage of lighting that can be used in a building based on its square footage. Title 24 standards, widely regarded as the most advanced energy efficiency standards, would help to reduce the amount of energy required for lighting, water heating, and heating and air conditioning in buildings and would promote energy conservation. Moreover, the proposed project would use energy-efficient models and systems whenever possible and would incorporate new technologies as they become available. Sustainability measures for the proposed project would include, but are not limited to, all-electric buildings with on-site solar PV arrays that meet CALGreen and City of San José Reach Code minimums, ample EV charging stations, on-site bicycle storage and repair facilities, water-efficient plumbing fixtures, use of native/adapted species to reduce irrigation needs, and high-quality construction materials with longer lifespan and durability to reduce construction waste and increase performance.

Therefore, the proposed project would be consistent with this criterion. The decreasing reliance on fossil fuels and increasing use of renewable energy discussed below would also reduce per capita energy consumption for the proposed project.

Decreasing Reliance on Fossil Fuels

The proposed project would incorporate elements from CALGreen, which would include, but are not limited to, all-electric buildings with on-site solar PV arrays and City of San José Reach Code minimums, ample EV charging stations, on-site bicycle storage and repair facilities, water-efficient plumbing fixtures, and use of native/adapted species to reduce irrigation needs. Increasing the number of electric appliances and mechanisms associated with the proposed project would decrease natural gas use, thereby reducing reliance on fossil fuels as well and therefore would have decreasing reliance on gasoline fuel.

Increasing Reliance on Renewable Energy Sources

As previously discussed, the proposed project would comply with the City of San José Reach Code minimums for EV charging infrastructure, which would accelerate both the regions and the proposed project's adoption of EVs and allow the future transportation energy supply necessary for residents and visitors to utilize renewable energy sources. As such, the proposed project would facilitate a

greater dependence on renewable energy sources for building and transportation energy demands. Therefore, the proposed project would be consistent with this criterion.

Overall

As discussed above, the proposed project's energy consumption would not result in the wasteful, inefficient, or unnecessary consumption of energy resources, consistent with the guidance derived from Appendix F of the CEQA Guidelines and the Appellate Court decision in *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) 75 Cal.App.5th 63, 164-168. The construction-related and operation-related impacts related to electricity, natural gas, and fuel consumption would be less than significant. Therefore, the proposed project would not introduce new significant environmental impacts or substantially increase the severity of previously analyzed significant effects under any scenario. No additional analysis is required, and impacts would remain less than significant.

Level of Significance

Less than significant impact.

Mitigation Measures

None required.

8.2.2 - Energy Plan Consistency

Impact ENER-2:	**The proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.**

Impact Analysis

The proposed project would utilize electricity PG&E. The proposed project would be all-electric and would not use natural gas. According to PG&E, approximately 38 percent of its electricity is currently obtained from renewable energy sources.[37] Therefore, the proposed project's electricity provider meets the State's current objective of 33 percent renewable energy. The proposed project's electricity provider would also be required to meet the State's future objective of 60 percent of in-State electricity sales being generated from renewable energy sources by 2030.

The proposed buildings would also be compliant with Title 24 Standards and would adhere to the energy efficiency, water efficiency, and material conservation requirements, as well as the City's Reach Code for all-electric and electric-ready requirements, as previously discussed. Therefore, the proposed project would be consistent with all applicable energy policies and plans, and this impact would be less than significant.

Level of Significance

Less than significant impact.

[37] Pacific Gas and Electric Company (PG&E). 2024. Understanding Our Energy Sources. Website: https://www.pge.com/en/about/corporate-responsibility-and-sustainability/taking-responsibility/clean-energy-solutions.html#:~:text=The%20power%20mix%20delivered%20to%20PG&E%E2%80%99s%20bundled-service%20customers%20in%202022. Accessed October 7, 2024.

Mitigation Measures

None required.

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Appendix A: Air Quality and Greenhouse Gas Emissions and Energy Supporting Information

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Air Quality, Greenhouse Gas Emissions, and Energy Supporting Information

Table of Contents

Project Number:	4645.0007				**Phases of Construction**		
Official Project Name	211-281 River Oaks Parkway Residential Project	**Construction Start Date:**	8/4/2025	Per RR	Aug 2025 - Jan 2026		
Address	211, 251, and 281 River Oaks Parkway		Monday		November 2026 - July 2028		
City	San Jose	**Working Days per Week:**	5		May 2026 - July 2028		
County	Santa Clara						
		Demolition?	Yes				
CEC Electricity Demand Forecast Zone (EDFZ)	1	**Soil Import/Export?**	Yes				
Electric Utility Provider:	Pacific Gas and Electric Company						
		Operational Start Date/Year	2026	Townhomes will be operational as of 2026			
Air District	Bay Area AQMD	**Emergency Generator?**	Unknown	Are we sure has at least 6 elevators - 7 levels			
Air Basin	San Francisco Bay Area	**All-Electric Project?**	Yes	(Assume one generator in each of the Market rate and Affordable apartments)			
				220 kw			
				295 hp			

< > August 2026

Su	Mo	Tu	We	Th	Fr	Sa
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3			

211-281 River Oaks Parkway Residential Project

Land use	Subtype	Unit	Number or Size	Lot Acreage	Building SF	Landscaping (sq ft)	Special Landscaping (sq ft)	Description
Residential	Condo/Townhouse	Dwelling Unit	100	1.64	218,874			Townhomes
Residential	Apartments Mid Rise	Dwelling Unit	505	3.35	730,356			Market Rate Apartments
Residential	Apartments Mid Rise	Dwelling Unit	132	1.03	164,052			Affordable
Recreational	User Defined Recreational	Acre	1.70	1.70	-	74127		Portion irrigated landscape area, as defined by client.
Parking	Other Non-Asphalt Surfaces	Acre	0.32	0.32				Sidewalk from off-site improvement, 4" thick / 8 cy trucks
Parking	Other Asphalt Surfaces	Acre	2.19	2.19				Remainder of the total site to balance (to account for hardscape + 1,692 of site asphalt from roadway
		Total		10.03	1,113,282	74127.00	-	

Changes to Default

Construction Construction Phases

Phase Name	Phase Type	Start Date	End Date	Acres < = Days Per Week	1S CalEEMod Default Work Days	Modeled Work Days	Override Default / Notes
Demolition	Demolition	8/4/2025	8/29/2025	5.00	20	20	
Site Preparation	Site Preparation	9/1/2025	9/12/2025	5.00	10	10	Adjusted for 3 construction phases per phase lengths based on size (rounded up).
Grading	Grading	9/15/2025	10/9/2025	5.00	18	18	
Building Construction	Building Construction	10/9/2025	4/5/2028	5.00	650	650	
Paving	Paving	4/6/2028	5/26/2028	5.00	35	35	
Architectural Coating	Architectural Coating	5/30/2028	7/20/2028	5.00	35	35	

Default

Construction Off-Road Equipment Emission Factors

Construction Off-Road Equipment	Changes to Defaults
Demolition	
Site Preparation	
Grading	
Building Construction	
Paving	
Architectural Coating	

Changes to Default

Construction Material Movement

Water Disturbed Area Activate		Imp/day	
Phase Type	Size Metric	Import	Export
Site Preparation	CY		9,389
Grading	CY		

Changes to Default

Construction Demolition

Water Demolished Area x Times Per Day	2
Construction Demolition	Amount
tons of debris	19,282

Changes to Default

Construction Trips and VMT (Edits only)

Construction Activity	Addt'l One-Way Trips/Day	Trip Type	Trip Length	Vehicle Class
Site Preparation	12	Vendor	default	HHDT
Paving	14	Vendor	default	HHDT

Note: VOC Content (g/L) (left side of column on calemod page) is based on district rules and regulations and is not edited. the interior/exterior area sqft. as shown below is for the right side of the column in CalEEMOD.

Default

Construction Architectural Coatings

	Interior Area (sq ft)		Exterior Area (sq ft)		
Construction Activity	Residential	Non-Residential	Residential	Non-Residential	Notes
Architectural Coating	default	default	default	default	Not Applicable

Default

Construction Paved Area

Construction Activity	Paved Area Acres	% Asphalt	VOC Off-gassing Emission Factor
Condo/Townhouse	default	default	default
Apartments Mid Rise	default	default	default
Apartments Mid Rise	default	default	default
User Defined Recreational	default	default	default
Other Non-Asphalt Surfaces	default	default	default
Other Asphalt Surfaces	default	default	default
Other Asphalt Surfaces	default	default	default

Default

Construction Electricity

Construction Year	GHG Intensity Factor (lb/MWhr)			Construction Electricity kWh/yr
	CO2	CH4	N2O	
2025	default	default	default	0
2026	default	default	default	0
2027	default	default	default	
2028	default	default	default	

Default

Operations GHG Emission Factors

Pacific Gas and Electric Company	GHG Intensity Factor		
	CO2	CH4	N2O
2026 Forecasted	CalEEMod	CalEEMod	CalEEMod
2019 Reported	default	default	default

Revised as per traffic study - do we want to look at saturday and sunday

Changes to Default

Operations Vehicle Data

Rates and Lengths

Land Use Subtype	Size	Units	Weekday Trip Rate (size/day)	Saturday Trip Rate (size/day)	Sunday Trip Rate (size/day)	Res H-W Trip Length (miles)	Res H-S Trip Length (miles)	Res H-O Trip Length (miles)	Non Res H-W Trip Length (miles)	Non Res W-O Trip Length (miles)	Non Res O-O Trip Length (miles)
Condo/Townhouse	100	Dwelling Units	5.700	6.84	5.68	default	default	default	default	default	default
Apartments Mid Rise	505	Dwelling Units	3.996	3.62	2.99	default	default	default	default	default	default
Apartments Mid Rise	132	Dwelling Units	3.810	3.90	7.48	default	default	default	default	default	default
User Defined Recreational	1.7	Acre	default	default	default	default	default	default	default	default	default
Other Non-Asphalt Surfaces	0.3	Acre	default	default	default	default	default	default	default	default	default
Other Asphalt Surfaces	2.2	Acre	default	default	default	default	default	default	default	default	default
	Total		default	default	default	default	default	default	default	default	default

Vehicle Data

Purposes and Percentages

Land Use Subtype	Size	Units	Weekday Primary Trip %	Weekday Divert Trip %	Weekday Pass-by Trip %	Saturday Primary Trip %	Saturday Divert Trip %	Saturday Pass-by Trip %	Sunday Primary Trip %	Sunday Divert Trip %	Sunday Pass-by Trip%
Condo/Townhouse	100	Dwelling Units	default	default	default	default	default	default	default	default	default
Apartments Mid Rise	505	Dwelling Units	default	default	default	default	default	default	default	default	default
Apartments Mid Rise	132	Dwelling Units	default	default	default	default	default	default	default	default	default
User Defined Recreational	1.70	Acre	default	default	default	default	default	default	default	default	default
Other Non-Asphalt Surfaces	0.32	Acre	default	default	default	default	default	default	default	default	default
Other Asphalt Surfaces	2.19	Acre	default	default	default	default	default	default	default	default	default
	Total		default	default	default	default	default	default	default	default	default

Default

Operations Fleet Mix

Land Use Subtype	Season	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Condo/Townhouse	ASJW	0.01	52.54%	3.92%	0.23	2.34%	0.98%	2.21%	13.01%	0.25%	0.95%	0.11%	0.07%	0.04%
Apartments Mid Rise	ASJW	0.01	52.54%	3.92%	0.23	2.34%	0.98%	2.21%	13.01%	0.25%	0.95%	0.11%	0.07%	0.04%
Apartments Mid Rise	ASJW	0.01	52.54%	3.92%	0.23	2.34%	0.98%	2.21%	13.01%	0.25%	0.95%	0.11%	0.07%	0.04%
User Defined Recreational	ASJW	0.01	52.54%	3.92%	0.23	2.34%	0.98%	2.21%	13.01%	0.25%	0.95%	0.11%	0.07%	0.04%
Other Non-Asphalt Surfaces	ASJW	0.01	52.54%	3.92%	0.23	2.34%	0.98%	2.21%	13.01%	0.25%	0.95%	0.11%	0.07%	0.04%
Other Asphalt Surfaces	ASJW	0.01	52.54%	3.92%	0.23	2.34%	0.98%	2.21%	13.01%	0.25%	0.95%	0.11%	0.07%	0.04%

Changes to Default

Operations Hearths

Fireplaces

Land Use Subtype	#Wood	# Gas	# Propane	# Electric	# Without	Hours / Day	Days / Yr	Wood mass/ yr
Zero Wood Mass	0.00	0	0	0.00	ALL	0	0	0

Woodstoves

Land Use Subtype	#Wood	# Gas	# Propane	# Electric	# Without	Hours / Day	Days / Yr	Wood mass/ yr
Zero This	0.00	0	0	0.00	ALL	0	0	0

Default

Operations Consumer Products

Emission Factors (lb VOC/sq ft/day)	
General Category	default
City Park/Golf Course, Pesticide/Fertilizers	default
Parking Degreaser	default

Changes to Default

Operations Energy Use

Land Use Subtype	Electricity (kWh/yr)	NG (kBTU/yr)
Condo/Townhouse	764,549	0.00
Apartments Mid Rise	2,875,698	0.00
Apartments Mid Rise	776,988	0.00
User Defined Recreational	0	0.00
Other Non-Asphalt Surfaces	0	0.00
Other Asphalt Surfaces	0	0.00

Default

Operations Water and Wastewater

Land Use Subtype	Indoor Use (gal/yr)	Outdoor Use (gal/yr)	% of Total WS by Process			% of WW Solids by Process	
			Septic	Aerobic	Lagoons	Compost	Cogen
Condo/Townhouse	default	default	default	default	default	default	default
Apartments Mid Rise	default	default	default	default	default	default	default
Apartments Mid Rise	default	default	default	default	default	default	default
User Defined Recreational	default	default	default	default	default	default	default
Other Non-Asphalt Surfaces	default	default	default	default	default	default	default
Other Asphalt Surfaces	default	default	default	default	default	default	default

Default

Operations Solid Waste

Land Use Subtype	Unit	Size	Generation Rate		Landfill Gas Treatment		
			ton/yr/1k ft	ton/yr	No Cov%	Cap %	Recovery%
Condo/Townhouse	Dwelling Units	100.00	default	default	default	default	default
Apartments Mid Rise	Dwelling Units	505.00	default	default	default	default	default
Apartments Mid Rise	Dwelling Units	132.00	default	default	default	default	default
User Defined Recreational	Acre	1.70	default	default	default	default	default
Other Non-Asphalt Surfaces	Acre	0.32	default	default	default	default	default
Other Asphalt Surfaces	Acre	2.19	default	default	default	default	default

Changes to Default

Operations Emergency Generators and Fire Pumps

Equipment Type	Fuel	#	Hrs/day	Hrs/Yr	HP	Load	Description
Emergency Generator	Diesel	2	2.00	50.00	295	DEFAULT	one in each mid-rise apartment complex

Default

Generators and Fire Pumps Emission Factors

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10e	PM2.5e	CO2	CH4	N2O
Emergency Generator	default	default	default	default	default	default	default	default	default	default

211-281 River Oaks Parkway Residential Project Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	211-281 River Oaks Parkway Residential Project
Construction Start Date	8/4/2025
Operational Year	2026
Lead Agency	River Oaks Housing Partners LLC
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	31.0
Location	281 River Oaks Pkwy, San Jose, CA 95134, USA
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1881
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.26

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
Condo/Townhouse	100	Dwelling Unit	1.64	216,874	0.00	0.00	299	—

Apartments Mid Rise	505	Dwelling Unit	3.15	750,356	0.00	0.00	1,510	Market Rate Apartments
Apartments Mid Rise	132	Dwelling Unit	1.03	164,052	0.00	0.00	395	Affordable Apartments
User Defined Recreational	1.70	User Defined Unit	1.70	0.00	74,127	0.00	—	1.7 acres park area
Other Asphalt Surfaces	0.32	Acre	0.32	0.00	0.00	0.00	—	sidewalk
Other Asphalt Surfaces	2.19	Acre	2.19	0.00	0.00	0.00	—	Remainder of the total site balanced to account for hardscape + 1650 off-site asphalt from roadway

2. Emissions Summary

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.94	3.56	43.8	36.3	0.14	1.53	18.2	19.4	1.36	4.60	5.96	—	20,836	20,836	1.59	2.76	38.1	21,736
2026	3.19	2.81	13.6	34.5	0.04	0.41	4.94	5.35	0.38	1.18	1.56	—	8,948	8,948	0.30	0.50	21.4	9,125
2027	3.06	2.56	13.0	33.1	0.04	0.37	4.94	5.31	0.34	1.18	1.52	—	8,823	8,823	0.28	0.50	19.2	8,997
2028	421	420	12.2	31.9	0.04	0.33	4.94	5.27	0.29	1.18	1.47	—	8,697	8,697	0.27	0.34	17.2	8,824
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.87	3.26	29.7	33.0	0.06	1.23	4.94	5.40	1.14	1.46	2.60	—	8,737	8,737	0.32	0.51	0.61	8,897
2026	3.14	2.61	14.1	31.5	0.04	0.41	4.94	5.35	0.38	1.18	1.56	—	8,621	8,621	0.32	0.51	0.55	8,781
2027	3.01	2.51	13.3	30.3	0.04	0.37	4.94	5.31	0.34	1.18	1.52	—	8,503	8,503	0.31	0.50	0.50	8,659

2028	2.88	2.42	12.7	29.3	0.04	0.33	4.94	5.27	0.29	1.18	1.47	—	8,383	8,383	0.29	0.48	0.45	8,534
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.12	0.89	7.51	9.50	0.02	0.25	2.25	2.49	0.22	0.57	0.79	—	3,308	3,308	0.18	0.27	2.83	3,397
2026	2.22	1.85	9.88	22.4	0.03	0.29	3.46	3.75	0.27	0.83	1.10	—	6,189	6,189	0.22	0.36	6.58	6,307
2027	2.13	1.78	9.45	21.5	0.03	0.26	3.46	3.72	0.24	0.83	1.07	—	6,105	6,105	0.21	0.36	5.92	6,222
2028	44.4	44.3	3.21	7.02	0.01	0.09	1.02	1.11	0.08	0.24	0.33	—	1,892	1,892	0.07	0.10	1.56	1,926
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.20	0.16	1.37	1.73	< 0.005	0.04	0.41	0.46	0.04	0.10	0.14	—	548	548	0.03	0.05	0.47	562
2026	0.40	0.34	1.80	4.08	< 0.005	0.05	0.63	0.68	0.05	0.15	0.20	—	1,025	1,025	0.04	0.06	1.09	1,044
2027	0.39	0.32	1.72	3.93	< 0.005	0.05	0.63	0.68	0.04	0.15	0.20	—	1,011	1,011	0.04	0.06	0.98	1,030
2028	8.11	8.09	0.59	1.28	< 0.005	0.02	0.19	0.20	0.01	0.04	0.06	—	313	313	0.01	0.02	0.26	319

2.3. Construction Emissions by Year, Mitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.30	0.89	33.5	36.2	0.14	0.52	18.2	18.7	0.40	4.60	4.81	—	20,836	20,836	1.59	2.76	38.1	21,736
2026	2.35	2.16	13.2	36.3	0.04	0.15	4.94	5.09	0.14	1.18	1.32	—	8,948	8,948	0.30	0.50	21.4	9,125
2027	2.26	1.95	13.1	35.0	0.04	0.15	4.94	5.09	0.14	1.18	1.32	—	8,823	8,823	0.28	0.50	19.2	8,997
2028	420	420	12.8	33.8	0.04	0.15	4.94	5.09	0.13	1.18	1.31	—	8,697	8,697	0.27	0.34	17.2	8,824
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.38	2.19	19.5	36.0	0.06	0.18	4.94	5.09	0.18	1.46	1.64	—	8,737	8,737	0.32	0.51	0.61	8,897
2026	2.29	1.96	13.7	33.4	0.04	0.15	4.94	5.09	0.14	1.18	1.32	—	8,621	8,621	0.32	0.51	0.55	8,781
2027	2.21	1.90	13.4	32.2	0.04	0.15	4.94	5.09	0.14	1.18	1.32	—	8,503	8,503	0.31	0.50	0.50	8,659
2028	2.13	1.84	13.3	31.2	0.04	0.15	4.94	5.09	0.13	1.18	1.31	—	8,383	8,383	0.29	0.48	0.45	8,534

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.60	0.47	5.83	9.99	0.02	0.07	2.25	2.32	0.06	0.57	0.63	—	3,308	3,308	0.18	0.27	2.83	3,397
2026	1.62	1.38	9.65	23.7	0.03	0.11	3.46	3.57	0.10	0.83	0.93	—	6,189	6,189	0.22	0.36	6.58	6,307
2027	1.56	1.34	9.54	22.9	0.03	0.11	3.46	3.57	0.10	0.83	0.93	—	6,105	6,105	0.21	0.36	5.92	6,222
2028	44.2	44.2	3.41	7.43	0.01	0.04	1.02	1.06	0.04	0.24	0.28	—	1,892	1,892	0.07	0.10	1.56	1,926
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.11	0.09	1.06	1.82	< 0.005	0.01	0.41	0.42	0.01	0.10	0.11	—	548	548	0.03	0.05	0.47	562
2026	0.29	0.25	1.76	4.33	< 0.005	0.02	0.63	0.65	0.02	0.15	0.17	—	1,025	1,025	0.04	0.06	1.09	1,044
2027	0.29	0.24	1.74	4.18	< 0.005	0.02	0.63	0.65	0.02	0.15	0.17	—	1,011	1,011	0.04	0.06	0.98	1,030
2028	8.07	8.06	0.62	1.36	< 0.005	0.01	0.19	0.19	0.01	0.04	0.05	—	313	313	0.01	0.02	0.26	319

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	12.7	11.8	7.89	88.1	0.21	0.13	19.3	19.5	0.12	4.90	5.03	—	21,009	21,009	0.91	0.84	74.7	21,358
Area	32.5	32.3	0.40	41.8	< 0.005	0.02	—	0.02	0.02	—	0.02	0.00	112	112	< 0.005	< 0.005	—	112
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,526	2,526	0.41	0.05	—	2,551
Water	—	—	—	—	—	—	—	—	—	—	—	51.2	98.9	150	5.27	0.13	—	320
Waste	—	—	—	—	—	—	—	—	—	—	—	294	0.00	294	29.4	0.00	—	1,028
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.10	8.10
Stationary	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Total	47.3	46.0	13.7	135	0.22	0.44	19.3	19.8	0.42	4.90	5.33	345	24,736	25,081	36.0	1.03	82.8	26,370
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	12.2	11.3	9.24	83.9	0.19	0.13	19.3	19.5	0.12	4.90	5.03	—	19,759	19,759	1.05	0.93	1.94	20,064
Area	28.6	28.6	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
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,526	2,526	0.41	0.05	—	2,551
Water	—	—	—	—	—	—	—	—	—	—	—	51.2	98.9	150	5.27	0.13	—	320
Waste	—	—	—	—	—	—	—	—	—	—	—	294	0.00	294	29.4	0.00	—	1,028
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.10	8.10
Stationary	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Total	42.9	41.8	14.7	88.9	0.20	0.42	19.3	19.8	0.41	4.90	5.31	345	23,374	23,719	36.1	1.11	10.0	24,964
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.67	8.96	7.00	65.3	0.16	0.11	15.3	15.4	0.10	3.87	3.97	—	16,056	16,056	0.80	0.72	26.0	16,317
Area	30.5	30.4	0.20	20.6	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	55.1	55.1	< 0.005	< 0.005	—	55.3
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,526	2,526	0.41	0.05	—	2,551
Water	—	—	—	—	—	—	—	—	—	—	—	51.2	98.9	150	5.27	0.13	—	320
Waste	—	—	—	—	—	—	—	—	—	—	—	294	0.00	294	29.4	0.00	—	1,028
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.10	8.10
Stationary	0.15	0.13	0.37	0.34	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	67.9	67.9	< 0.005	< 0.005	0.00	68.1
Total	40.3	39.5	7.57	86.2	0.16	0.14	15.3	15.4	0.13	3.87	4.00	345	18,804	19,149	35.8	0.90	34.1	20,346
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.76	1.63	1.28	11.9	0.03	0.02	2.79	2.81	0.02	0.71	0.72	—	2,658	2,658	0.13	0.12	4.30	2,701
Area	5.57	5.55	0.04	3.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	9.13	9.13	< 0.005	< 0.005	—	9.16
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	418	418	0.07	0.01	—	422
Water	—	—	—	—	—	—	—	—	—	—	—	8.48	16.4	24.9	0.87	0.02	—	52.9
Waste	—	—	—	—	—	—	—	—	—	—	—	48.6	0.00	48.6	4.86	0.00	—	170
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.34	1.34
Stationary	0.03	0.02	0.07	0.06	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.2	11.2	< 0.005	< 0.005	0.00	11.3
Total	7.36	7.21	1.38	15.7	0.03	0.02	2.79	2.81	0.02	0.71	0.73	57.1	3,113	3,170	5.93	0.15	5.64	3,369

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	12.7	11.8	7.89	88.1	0.21	0.13	19.3	19.5	0.12	4.90	5.03	—	21,009	21,009	0.91	0.84	74.7	21,358
Area	32.5	32.3	0.40	41.8	< 0.005	0.02	—	0.02	0.02	—	0.02	0.00	112	112	< 0.005	< 0.005	—	112
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,526	2,526	0.41	0.05	—	2,551
Water	—	—	—	—	—	—	—	—	—	—	—	51.2	98.9	150	5.27	0.13	—	320
Waste	—	—	—	—	—	—	—	—	—	—	—	294	0.00	294	29.4	0.00	—	1,028
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.10	8.10
Stationary	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Total	47.3	46.0	13.7	135	0.22	0.44	19.3	19.8	0.42	4.90	5.33	345	24,736	25,081	36.0	1.03	82.8	26,370
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	12.2	11.3	9.24	83.9	0.19	0.13	19.3	19.5	0.12	4.90	5.03	—	19,759	19,759	1.05	0.93	1.94	20,064
Area	28.6	28.6	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
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,526	2,526	0.41	0.05	—	2,551
Water	—	—	—	—	—	—	—	—	—	—	—	51.2	98.9	150	5.27	0.13	—	320
Waste	—	—	—	—	—	—	—	—	—	—	—	294	0.00	294	29.4	0.00	—	1,028
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.10	8.10
Stationary	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Total	42.9	41.8	14.7	88.9	0.20	0.42	19.3	19.8	0.41	4.90	5.31	345	23,374	23,719	36.1	1.11	10.0	24,964
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.67	8.96	7.00	65.3	0.16	0.11	15.3	15.4	0.10	3.87	3.97	—	16,056	16,056	0.80	0.72	26.0	16,317

Area	30.5	30.4	0.20	20.6	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	55.1	55.1	< 0.005	< 0.005	—	55.3
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,526	2,526	0.41	0.05	—	2,551
Water	—	—	—	—	—	—	—	—	—	—	—	51.2	98.9	150	5.27	0.13	—	320
Waste	—	—	—	—	—	—	—	—	—	—	—	294	0.00	294	29.4	0.00	—	1,028
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.10	8.10
Stationary	0.15	0.13	0.37	0.34	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	67.9	67.9	< 0.005	< 0.005	0.00	68.1
Total	40.3	39.5	7.57	86.2	0.16	0.14	15.3	15.4	0.13	3.87	4.00	345	18,804	19,149	35.8	0.90	34.1	20,346
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.76	1.63	1.28	11.9	0.03	0.02	2.79	2.81	0.02	0.71	0.72	—	2,658	2,658	0.13	0.12	4.30	2,701
Area	5.57	5.55	0.04	3.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	9.13	9.13	< 0.005	< 0.005	—	9.16
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	418	418	0.07	0.01	—	422
Water	—	—	—	—	—	—	—	—	—	—	—	8.48	16.4	24.9	0.87	0.02	—	52.9
Waste	—	—	—	—	—	—	—	—	—	—	—	48.6	0.00	48.6	4.86	0.00	—	170
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.34	1.34
Stationary	0.03	0.02	0.07	0.06	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.2	11.2	< 0.005	< 0.005	0.00	11.3
Total	7.36	7.21	1.38	15.7	0.03	0.02	2.79	2.81	0.02	0.71	0.73	57.1	3,113	3,170	5.93	0.15	5.64	3,369

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

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

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

Off-Road Equipm	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	13.6	13.6	—	2.05	2.05	—	—	—	—	—	—	—
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.09	< 0.005	0.05	—	0.05	0.05	—	0.05	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.74	0.74	—	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.14	0.14	—	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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.61	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	129	129	< 0.005	< 0.005	0.51	131
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	0.00	0.00

Hauling	1.84	0.37	21.6	10.6	0.11	0.32	4.47	4.79	0.21	1.22	1.44	—	17,283	17,283	1.45	2.72	37.6	18,168
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.60	6.60	< 0.005	< 0.005	0.01	6.69
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	0.00	0.00
Hauling	0.10	0.02	1.22	0.58	0.01	0.02	0.24	0.26	0.01	0.07	0.08	—	947	947	0.08	0.15	0.89	994
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.11
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	0.00	0.00
Hauling	0.02	< 0.005	0.22	0.11	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	157	157	0.01	0.02	0.15	165

3.2. Demolition (2025) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.41	11.9	18.2	0.03	0.20	—	0.20	0.19	—	0.19	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	13.6	13.6	—	2.05	2.05	—	—	—	—	—	—	—
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.65	1.00	< 0.005	0.01	—	0.01	0.01	—	0.01	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.74	0.74	—	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.12	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.14	0.14	—	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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.61	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	129	129	< 0.005	< 0.005	0.51	131
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	0.00	0.00
Hauling	1.84	0.37	21.6	10.6	0.11	0.32	4.47	4.79	0.21	1.22	1.44	—	17,283	17,283	1.45	2.72	37.6	18,168
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.60	6.60	< 0.005	< 0.005	0.01	6.69
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	0.00	0.00
Hauling	0.10	0.02	1.22	0.58	0.01	0.02	0.24	0.26	0.01	0.07	0.08	—	947	947	0.08	0.15	0.89	994

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.11
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	0.00	0.00
Hauling	0.02	< 0.005	0.22	0.11	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	157	157	0.01	0.02	0.15	165

3.3. Site Preparation (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.69	7.69	—	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.87	0.83	< 0.005	0.04	—	0.04	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.15	< 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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.72	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	150	150	< 0.005	0.01	0.59	152
Vendor	0.05	0.01	0.55	0.29	< 0.005	0.01	0.09	0.10	< 0.005	0.03	0.03	—	373	373	0.04	0.06	0.78	392
Hauling	0.89	0.18	10.5	5.14	0.05	0.16	2.18	2.33	0.10	0.60	0.70	—	8,409	8,409	0.71	1.33	18.3	8,839
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.85	3.85	< 0.005	< 0.005	0.01	3.90
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.2	10.2	< 0.005	< 0.005	0.01	10.7
Hauling	0.02	< 0.005	0.30	0.14	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	230	230	0.02	0.04	0.22	242
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.64	0.64	< 0.005	< 0.005	< 0.005	0.65
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.69	1.69	< 0.005	< 0.005	< 0.005	1.78
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.1	38.1	< 0.005	0.01	0.04	40.1

3.4. Site Preparation (2025) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.64	14.7	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.69	7.69	—	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.40	0.78	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.07	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.72	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	150	150	< 0.005	0.01	0.59	152
Vendor	0.05	0.01	0.55	0.29	< 0.005	0.01	0.09	0.10	< 0.005	0.03	0.03	—	373	373	0.04	0.06	0.78	392
Hauling	0.89	0.18	10.5	5.14	0.05	0.16	2.18	2.33	0.10	0.60	0.70	—	8,409	8,409	0.71	1.33	18.3	8,839
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.85	3.85	< 0.005	< 0.005	0.01	3.90
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.2	10.2	< 0.005	< 0.005	0.01	10.7
Hauling	0.02	< 0.005	0.30	0.14	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	230	230	0.02	0.04	0.22	242
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.64	0.64	< 0.005	< 0.005	< 0.005	0.65
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.69	1.69	< 0.005	< 0.005	< 0.005	1.78
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.1	38.1	< 0.005	0.01	0.04	40.1

3.5. Grading (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.46	1.40	< 0.005	0.06	—	0.06	0.06	—	0.06	—	325	325	0.01	< 0.005	—	327
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—

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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.27	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	53.9	53.9	< 0.005	< 0.005	—	54.1
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.82	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	171	171	< 0.005	0.01	0.68	174
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	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.70	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	159	159	< 0.005	0.01	0.02	161
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	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.92	7.92	< 0.005	< 0.005	0.01	8.03
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	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.31	1.31	< 0.005	< 0.005	< 0.005	1.33

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	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	0.00	0.00

3.6. Grading (2025) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.04	0.04	0.96	1.74	< 0.005	0.01	—	0.01	0.01	—	0.01	—	325	325	0.01	< 0.005	—	327
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.01	0.01	0.17	0.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	53.9	53.9	< 0.005	< 0.005	—	54.1
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.82	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	171	171	< 0.005	0.01	0.68	174
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	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.70	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	159	159	< 0.005	0.01	0.02	161
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	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.92	7.92	< 0.005	< 0.005	0.01	8.03

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	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.31	1.31	< 0.005	< 0.005	< 0.005	1.33
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	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	0.00	0.00

3.7. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.19	1.72	2.14	< 0.005	0.07	—	0.07	0.07	—	0.07	—	394	394	0.02	< 0.005	—	395
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.04	0.03	0.31	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	65.3	65.3	< 0.005	< 0.005	—	65.5
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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.75	1.70	1.63	18.6	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,212	4,212	0.11	0.18	0.47	4,270
Vendor	0.20	0.08	2.86	1.34	0.01	0.03	0.56	0.58	0.03	0.15	0.18	—	2,127	2,127	0.12	0.31	0.15	2,221
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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.28	0.24	3.01	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	700	700	0.02	0.03	1.27	710
Vendor	0.03	0.01	0.46	0.22	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	349	349	0.02	0.05	0.40	365
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.55	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	116	116	< 0.005	< 0.005	0.21	118
Vendor	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.9	57.9	< 0.005	0.01	0.07	60.5
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	0.00	0.00

3.8. Building Construction (2025) - Mitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.42	9.53	14.8	0.02	0.12	—	0.12	0.11	—	0.11	—	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	1.57	2.44	< 0.005	0.02	—	0.02	0.02	—	0.02	—	394	394	0.02	< 0.005	—	395
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.29	0.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	65.3	65.3	< 0.005	< 0.005	—	65.5
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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.75	1.70	1.63	18.6	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,212	4,212	0.11	0.18	0.47	4,270
Vendor	0.20	0.08	2.86	1.34	0.01	0.03	0.56	0.58	0.03	0.15	0.18	—	2,127	2,127	0.12	0.31	0.15	2,221
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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.28	0.28	0.24	3.01	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	700	700	0.02	0.03	1.27	710
Vendor	0.03	0.01	0.46	0.22	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	349	349	0.02	0.05	0.40	365
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.55	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	116	116	< 0.005	< 0.005	0.21	118
Vendor	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.9	57.9	< 0.005	0.01	0.07	60.5
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	0.00	0.00

3.9. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.91	0.77	7.04	9.26	0.02	0.27	—	0.27	0.25	—	0.25	—	1,712	1,712	0.07	0.01	—	1,718
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.71	1.68	1.13	20.2	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,462	4,462	0.08	0.17	16.3	4,531
Vendor	0.20	0.06	2.59	1.27	0.01	0.03	0.56	0.58	0.03	0.15	0.18	—	2,089	2,089	0.12	0.31	5.09	2,188
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.67	1.48	1.47	17.3	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,133	4,133	0.11	0.18	0.42	4,191
Vendor	0.19	0.06	2.74	1.29	0.01	0.03	0.56	0.58	0.03	0.15	0.18	—	2,090	2,090	0.12	0.31	0.13	2,184
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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.16	1.04	0.93	12.2	0.00	0.00	3.07	3.07	0.00	0.72	0.72	—	2,985	2,985	0.07	0.12	5.02	3,028
Vendor	0.14	0.04	1.91	0.92	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,492	1,492	0.08	0.22	1.56	1,561
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.17	2.23	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	494	494	0.01	0.02	0.83	501
Vendor	0.03	0.01	0.35	0.17	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	247	247	0.01	0.04	0.26	258

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	0.00	0.00

3.10. Building Construction (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.41	9.53	14.8	0.02	0.12	—	0.12	0.11	—	0.11	—	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.41	9.53	14.8	0.02	0.12	—	0.12	0.11	—	0.11	—	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.30	6.81	10.6	0.02	0.08	—	0.08	0.08	—	0.08	—	1,712	1,712	0.07	0.01	—	1,718
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.06	0.05	1.24	1.93	< 0.005	0.02	—	0.02	0.01	—	0.01	—	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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.71	1.68	1.13	20.2	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,462	4,462	0.08	0.17	16.3	4,531
Vendor	0.20	0.06	2.59	1.27	0.01	0.03	0.56	0.58	0.03	0.15	0.18	—	2,089	2,089	0.12	0.31	5.09	2,188
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.67	1.48	1.47	17.3	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,133	4,133	0.11	0.18	0.42	4,191
Vendor	0.19	0.06	2.74	1.29	0.01	0.03	0.56	0.58	0.03	0.15	0.18	—	2,090	2,090	0.12	0.31	0.13	2,184
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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.16	1.04	0.93	12.2	0.00	0.00	3.07	3.07	0.00	0.72	0.72	—	2,985	2,985	0.07	0.12	5.02	3,028
Vendor	0.14	0.04	1.91	0.92	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,492	1,492	0.08	0.22	1.56	1,561
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.17	2.23	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	494	494	0.01	0.02	0.83	501
Vendor	0.03	0.01	0.35	0.17	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	247	247	0.01	0.04	0.26	258
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	0.00	0.00

3.11. Building Construction (2027) - Unmitigated

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

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.64	1.47	1.11	18.9	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,380	4,380	0.07	0.17	14.7	4,448
Vendor	0.18	0.06	2.48	1.22	0.01	0.03	0.56	0.58	0.03	0.15	0.18	—	2,046	2,046	0.12	0.30	4.51	2,144
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.60	1.42	1.31	16.1	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,058	4,058	0.09	0.17	0.38	4,112
Vendor	0.18	0.06	2.60	1.26	0.01	0.03	0.56	0.58	0.03	0.15	0.18	—	2,048	2,048	0.12	0.31	0.12	2,142
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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.12	1.00	0.92	11.4	0.00	0.00	3.07	3.07	0.00	0.72	0.72	—	2,930	2,930	0.06	0.12	4.53	2,973
Vendor	0.13	0.04	1.82	0.88	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,462	1,462	0.08	0.22	1.39	1,530
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.17	2.08	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	485	485	0.01	0.02	0.75	492
Vendor	0.02	0.01	0.33	0.16	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	242	242	0.01	0.04	0.23	253
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	0.00	0.00

3.12. Building Construction (2027) - Mitigated

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

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

Off-Road Equipm	0.43	0.41	9.53	14.8	0.02	0.12	—	0.12	0.11	—	0.11	—	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.41	9.53	14.8	0.02	0.12	—	0.12	0.11	—	0.11	—	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.30	6.80	10.6	0.02	0.08	—	0.08	0.08	—	0.08	—	1,712	1,712	0.07	0.01	—	1,718
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	1.24	1.93	< 0.005	0.02	—	0.02	0.01	—	0.01	—	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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.64	1.47	1.11	18.9	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,380	4,380	0.07	0.17	14.7	4,448
Vendor	0.18	0.06	2.48	1.22	0.01	0.03	0.56	0.58	0.03	0.15	0.18	—	2,046	2,046	0.12	0.30	4.51	2,144
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	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.60	1.42	1.31	16.1	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,058	4,058	0.09	0.17	0.38	4,112
Vendor	0.18	0.06	2.60	1.26	0.01	0.03	0.56	0.58	0.03	0.15	0.18	—	2,048	2,048	0.12	0.31	0.12	2,142
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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.12	1.00	0.92	11.4	0.00	0.00	3.07	3.07	0.00	0.72	0.72	—	2,930	2,930	0.06	0.12	4.53	2,973
Vendor	0.13	0.04	1.82	0.88	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,462	1,462	0.08	0.22	1.39	1,530
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.17	2.08	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	485	485	0.01	0.02	0.75	492
Vendor	0.02	0.01	0.33	0.16	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	242	242	0.01	0.04	0.23	253
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	0.00	0.00

3.13. Building Construction (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.22	0.19	1.68	2.43	< 0.005	0.06	—	0.06	0.05	—	0.05	—	450	450	0.02	< 0.005	—	452
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.04	0.03	0.31	0.44	< 0.005	0.01	—	0.01	0.01	—	0.01	—	74.6	74.6	< 0.005	< 0.005	—	74.8
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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.58	1.41	0.97	17.8	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,304	4,304	0.07	0.04	13.2	4,329
Vendor	0.18	0.06	2.35	1.18	0.01	0.03	0.56	0.58	0.01	0.15	0.17	—	1,996	1,996	0.10	0.29	3.98	2,089
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.54	1.37	1.30	15.2	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	3,988	3,988	0.09	0.17	0.34	4,041
Vendor	0.16	0.06	2.48	1.21	0.01	0.03	0.56	0.58	0.01	0.15	0.17	—	1,998	1,998	0.10	0.29	0.10	2,087
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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.29	0.25	0.21	2.83	0.00	0.00	0.81	0.81	0.00	0.19	0.19	—	757	757	0.02	0.03	1.07	768
Vendor	0.03	0.01	0.46	0.22	< 0.005	0.01	0.10	0.11	< 0.005	0.03	0.03	—	375	375	0.02	0.05	0.32	392
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.52	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	125	125	< 0.005	0.01	0.18	127
Vendor	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	62.1	62.1	< 0.005	0.01	0.05	64.9
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	0.00	0.00

3.14. Building Construction (2028) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.41	9.52	14.8	0.02	0.12	—	0.12	0.11	—	0.11	—	2,397	2,397	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.41	9.52	14.8	0.02	0.12	—	0.12	0.11	—	0.11	—	2,397	2,397	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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.08	0.08	1.79	2.78	< 0.005	0.02	—	0.02	0.02	—	0.02	—	450	450	0.02	< 0.005	—	452
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.33	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	74.6	74.6	< 0.005	< 0.005	—	74.8
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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.58	1.41	0.97	17.8	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	4,304	4,304	0.07	0.04	13.2	4,329
Vendor	0.18	0.06	2.35	1.18	0.01	0.03	0.56	0.58	0.01	0.15	0.17	—	1,996	1,996	0.10	0.29	3.98	2,089
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.54	1.37	1.30	15.2	0.00	0.00	4.39	4.39	0.00	1.03	1.03	—	3,988	3,988	0.09	0.17	0.34	4,041
Vendor	0.16	0.06	2.48	1.21	0.01	0.03	0.56	0.58	0.01	0.15	0.17	—	1,998	1,998	0.10	0.29	0.10	2,087
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	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.21	2.83	0.00	0.00	0.81	0.81	0.00	0.19	0.19	—	757	757	0.02	0.03	1.07	768
Vendor	0.03	0.01	0.46	0.22	< 0.005	0.01	0.10	0.11	< 0.005	0.03	0.03	—	375	375	0.02	0.05	0.32	392
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.52	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	125	125	< 0.005	0.01	0.18	127
Vendor	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	62.1	62.1	< 0.005	0.01	0.05	64.9

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	0.00	0.00

3.15. Paving (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.82	0.69	6.63	9.91	0.01	0.26	—	0.26	0.24	—	0.24	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.17	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.69	1.03	< 0.005	0.03	—	0.03	0.02	—	0.02	—	157	157	0.01	< 0.005	—	158
Paving	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.0	26.0	< 0.005	< 0.005	—	26.1
Paving	< 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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.50	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	122	122	< 0.005	< 0.005	0.37	122
Vendor	0.05	0.01	0.58	0.32	< 0.005	0.01	0.11	0.11	0.01	0.03	0.04	—	406	406	0.04	0.07	0.72	427
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.0
Vendor	0.01	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.3	42.3	< 0.005	0.01	0.03	44.4
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.96	1.96	< 0.005	< 0.005	< 0.005	1.99
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.00	7.00	< 0.005	< 0.005	0.01	7.36
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	0.00	0.00

3.16. Paving (2028) - Mitigated

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

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

Off-Road Equipment	0.23	0.23	7.21	10.6	0.01	0.09	—	0.09	0.08	—	0.08	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.17	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.75	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	157	157	0.01	< 0.005	—	158
Paving	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.14	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.0	26.0	< 0.005	< 0.005	—	26.1
Paving	< 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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.50	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	122	122	< 0.005	< 0.005	0.37	122
Vendor	0.05	0.01	0.58	0.32	< 0.005	0.01	0.11	0.11	0.01	0.03	0.04	—	406	406	0.04	0.07	0.72	427
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	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.0
Vendor	0.01	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.3	42.3	< 0.005	0.01	0.03	44.4
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.96	1.96	< 0.005	< 0.005	< 0.005	1.99
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.00	7.00	< 0.005	< 0.005	0.01	7.36
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	0.00	0.00

3.17. Architectural Coating (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	420	420	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.9	13.9	< 0.005	< 0.005	—	13.9
Architectural Coatings	43.7	43.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.30	2.30	< 0.005	< 0.005	—	2.31
Architectural Coatings	7.98	7.98	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.28	0.19	3.56	0.00	0.00	0.88	0.88	0.00	0.21	0.21	—	861	861	0.01	0.01	2.64	866
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	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	83.9	83.9	< 0.005	< 0.005	0.12	85.2

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	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.9	13.9	< 0.005	< 0.005	0.02	14.1
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	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	0.00	0.00

3.18. Architectural Coating (2028) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	420	420	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.11	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.9	13.9	< 0.005	< 0.005	—	13.9

Architectural	43.7	43.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.30	2.30	< 0.005	< 0.005	—	2.31
Architectural Coatings	7.98	7.98	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.28	0.19	3.56	0.00	0.00	0.88	0.88	0.00	0.21	0.21	—	861	861	0.01	0.01	2.64	866
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	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	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	83.9	83.9	< 0.005	< 0.005	0.12	85.2
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	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	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.9	13.9	< 0.005	< 0.005	0.02	14.1
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	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	0.00	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	2.33	2.17	1.45	16.2	0.04	0.02	3.55	3.58	0.02	0.90	0.92	—	3,861	3,861	0.17	0.15	13.7	3,925
Apartments Mid Rise	10.3	9.64	6.44	71.9	0.17	0.11	15.8	15.9	0.10	4.00	4.10	—	17,148	17,148	0.75	0.69	61.0	17,433
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	12.7	11.8	7.89	88.1	0.21	0.13	19.3	19.5	0.12	4.90	5.03	—	21,009	21,009	0.91	0.84	74.7	21,358
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	2.23	2.07	1.70	15.4	0.04	0.02	3.55	3.58	0.02	0.90	0.92	—	3,631	3,631	0.19	0.17	0.36	3,687
Apartments Mid Rise	9.92	9.18	7.54	68.5	0.16	0.11	15.8	15.9	0.10	4.00	4.10	—	16,128	16,128	0.86	0.76	1.58	16,376

User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	12.2	11.3	9.24	83.9	0.19	0.13	19.3	19.5	0.12	4.90	5.03	—	19,759	19,759	1.05	0.93	1.94	20,064
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.34	0.32	0.25	2.30	0.01	< 0.005	0.54	0.54	< 0.005	0.14	0.14	—	513	513	0.03	0.02	0.83	522
Apartments Mid Rise	1.42	1.32	1.03	9.61	0.02	0.02	2.25	2.26	0.01	0.57	0.58	—	2,145	2,145	0.11	0.10	3.47	2,180
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.76	1.63	1.28	11.9	0.03	0.02	2.79	2.81	0.02	0.71	0.72	—	2,658	2,658	0.13	0.12	4.30	2,701

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	2.33	2.17	1.45	16.2	0.04	0.02	3.55	3.58	0.02	0.90	0.92	—	3,861	3,861	0.17	0.15	13.7	3,925
Apartments Mid Rise	10.3	9.64	6.44	71.9	0.17	0.11	15.8	15.9	0.10	4.00	4.10	—	17,148	17,148	0.75	0.69	61.0	17,433

User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	12.7	11.8	7.89	88.1	0.21	0.13	19.3	19.5	0.12	4.90	5.03	—	21,009	21,009	0.91	0.84	74.7	21,358
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	2.23	2.07	1.70	15.4	0.04	0.02	3.55	3.58	0.02	0.90	0.92	—	3,631	3,631	0.19	0.17	0.36	3,687
Apartments Mid Rise	9.92	9.18	7.54	68.5	0.16	0.11	15.8	15.9	0.10	4.00	4.10	—	16,128	16,128	0.86	0.76	1.58	16,376
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	12.2	11.3	9.24	83.9	0.19	0.13	19.3	19.5	0.12	4.90	5.03	—	19,759	19,759	1.05	0.93	1.94	20,064
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.34	0.32	0.25	2.30	0.01	< 0.005	0.54	0.54	< 0.005	0.14	0.14	—	513	513	0.03	0.02	0.83	522
Apartments Mid Rise	1.42	1.32	1.03	9.61	0.02	0.02	2.25	2.26	0.01	0.57	0.58	—	2,145	2,145	0.11	0.10	3.47	2,180
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.76	1.63	1.28	11.9	0.03	0.02	2.79	2.81	0.02	0.71	0.72	—	2,658	2,658	0.13	0.12	4.30	2,701

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	427	427	0.07	0.01	—	431
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	2,098	2,098	0.34	0.04	—	2,119
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,526	2,526	0.41	0.05	—	2,551
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	427	427	0.07	0.01	—	431
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	2,098	2,098	0.34	0.04	—	2,119
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,526	2,526	0.41	0.05	—	2,551
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	70.7	70.7	0.01	< 0.005	—	71.4
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	347	347	0.06	0.01	—	351
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	418	418	0.07	0.01	—	422

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	427	427	0.07	0.01	—	431
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	2,098	2,098	0.34	0.04	—	2,119
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,526	2,526	0.41	0.05	—	2,551
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	427	427	0.07	0.01	—	431
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	2,098	2,098	0.34	0.04	—	2,119
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,526	2,526	0.41	0.05	—	2,551
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	70.7	70.7	0.01	< 0.005	—	71.4
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	347	347	0.06	0.01	—	351
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	418	418	0.07	0.01	—	422

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
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	—	0.00
User Defined Recreational	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
Other Asphalt Surfaces	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	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
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	—	0.00
User Defined Recreational	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
Other Asphalt Surfaces	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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
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	—	0.00
User Defined Recreational	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
Other Asphalt Surfaces	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	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

4.2.4. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
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	—	0.00
User Defined Recreational	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
Other Asphalt Surfaces	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	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
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	—	0.00
User Defined Recreational	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
Other Asphalt Surfaces	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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	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
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	—	0.00
User Defined Recreational	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
Other Asphalt Surfaces	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	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

4.3. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	24.2	24.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	4.37	4.37	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	3.91	3.71	0.40	41.8	< 0.005	0.02	—	0.02	0.02	—	0.02	—	112	112	< 0.005	< 0.005	—	112
Total	32.5	32.3	0.40	41.8	< 0.005	0.02	—	0.02	0.02	—	0.02	0.00	112	112	< 0.005	< 0.005	—	112
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	24.2	24.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	4.37	4.37	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	28.6	28.6	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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

Consumer Products	4.42	4.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.80	0.80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.35	0.33	0.04	3.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.13	9.13	< 0.005	< 0.005	—	9.16
Total	5.57	5.55	0.04	3.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	9.13	9.13	< 0.005	< 0.005	—	9.16

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	24.2	24.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	4.37	4.37	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	3.91	3.71	0.40	41.8	< 0.005	0.02	—	0.02	0.02	—	0.02	—	112	112	< 0.005	< 0.005	—	112
Total	32.5	32.3	0.40	41.8	< 0.005	0.02	—	0.02	0.02	—	0.02	0.00	112	112	< 0.005	< 0.005	—	112

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	24.2	24.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	4.37	4.37	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	28.6	28.6	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	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
Consumer Products	4.42	4.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.80	0.80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.35	0.33	0.04	3.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.13	9.13	< 0.005	< 0.005	—	9.16
Total	5.57	5.55	0.04	3.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	9.13	9.13	< 0.005	< 0.005	—	9.16

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	6.95	13.1	20.1	0.71	0.02	—	43.1
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	44.3	83.6	128	4.55	0.11	—	274
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	2.19	2.19	< 0.005	< 0.005	—	2.21
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	51.2	98.9	150	5.27	0.13	—	320
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	6.95	13.1	20.1	0.71	0.02	—	43.1
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	44.3	83.6	128	4.55	0.11	—	274
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	2.19	2.19	< 0.005	< 0.005	—	2.21
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	51.2	98.9	150	5.27	0.13	—	320
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	1.15	2.17	3.32	0.12	< 0.005	—	7.13

Apartments	—	—	—	—	—	—	—	—	—	—	—	7.33	13.8	21.2	0.75	0.02	—	45.4
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.36	0.36	< 0.005	< 0.005	—	0.37
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.48	16.4	24.9	0.87	0.02	—	52.9

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	6.95	13.1	20.1	0.71	0.02	—	43.1
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	44.3	83.6	128	4.55	0.11	—	274
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	2.19	2.19	< 0.005	< 0.005	—	2.21
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	51.2	98.9	150	5.27	0.13	—	320
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	6.95	13.1	20.1	0.71	0.02	—	43.1

Apartme Mid Rise	—	—	—	—	—	—	—	—	—	—	—	44.3	83.6	128	4.55	0.11	—	274
User Defined Recreatic nal	—	—	—	—	—	—	—	—	—	—	—	0.00	2.19	2.19	< 0.005	< 0.005	—	2.21
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	51.2	98.9	150	5.27	0.13	—	320
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhou se	—	—	—	—	—	—	—	—	—	—	—	1.15	2.17	3.32	0.12	< 0.005	—	7.13
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	7.33	13.8	21.2	0.75	0.02	—	45.4
User Defined Recreatic nal	—	—	—	—	—	—	—	—	—	—	—	0.00	0.36	0.36	< 0.005	< 0.005	—	0.37
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.48	16.4	24.9	0.87	0.02	—	52.9

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

Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	39.9	0.00	39.9	3.98	0.00	—	139
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	254	0.00	254	25.4	0.00	—	888
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	294	0.00	294	29.4	0.00	—	1,028
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	39.9	0.00	39.9	3.98	0.00	—	139
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	254	0.00	254	25.4	0.00	—	888
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	294	0.00	294	29.4	0.00	—	1,028
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	6.60	0.00	6.60	0.66	0.00	—	23.1
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	42.0	0.00	42.0	4.20	0.00	—	147

User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	48.6	0.00	48.6	4.86	0.00	—	170

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	39.9	0.00	39.9	3.98	0.00	—	139
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	254	0.00	254	25.4	0.00	—	888
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	294	0.00	294	29.4	0.00	—	1,028
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	39.9	0.00	39.9	3.98	0.00	—	139

Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	254	0.00	254	25.4	0.00	—	888
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	294	0.00	294	29.4	0.00	—	1,028
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	6.60	0.00	6.60	0.66	0.00	—	23.1
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	42.0	0.00	42.0	4.20	0.00	—	147
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	48.6	0.00	48.6	4.86	0.00	—	170

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

Condo/Townhou	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.55	1.55
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.55	6.55
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.10	8.10
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.55	1.55
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.55	6.55
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.10	8.10
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26	0.26
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.08	1.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.34	1.34

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.55	1.55

Apartme Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.55	6.55
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.10	8.10
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhou se	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.55	1.55
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.55	6.55
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.10	8.10
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhou se	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26	0.26
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.08	1.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.34	1.34

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)

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

Emerge Generator	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Total	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Total	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.03	0.02	0.07	0.06	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.2	11.2	< 0.005	< 0.005	0.00	11.3
Total	0.03	0.02	0.07	0.06	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.2	11.2	< 0.005	< 0.005	0.00	11.3

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Total	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Total	2.13	1.94	5.41	4.94	0.01	0.28	0.00	0.28	0.28	0.00	0.28	0.00	991	991	0.04	0.01	0.00	994
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.03	0.02	0.07	0.06	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.2	11.2	< 0.005	< 0.005	0.00	11.3
Total	0.03	0.02	0.07	0.06	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.2	11.2	< 0.005	< 0.005	0.00	11.3

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

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

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	8/4/2025	8/29/2025	5.00	20.0	default for lot size
Site Preparation	Site Preparation	9/1/2025	9/12/2025	5.00	10.0	2 + 3 + 5 (days)
Grading	Grading	9/15/2025	10/8/2025	5.00	18.0	4 + 6 + 8 (days)
Building Construction	Building Construction	10/9/2025	4/5/2028	5.00	650	200 + 220 + 230 (days)
Paving	Paving	4/6/2028	5/29/2028	5.00	38.0	10 + 10 + 18 (days)
Architectural Coating	Architectural Coating	5/30/2028	7/20/2028	5.00	38.0	10 + 10 + 18 (days)

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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73

Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Tier 4 Interim	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41

Grading	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	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	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	241	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	12.0	8.40	HHDT
Site Preparation	Hauling	117	20.0	HHDT

Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	531	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	78.8	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	14.0	8.40	HHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	106	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	241	20.0	HHDT

Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	12.0	8.40	HHDT
Site Preparation	Hauling	117	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	531	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	78.8	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	14.0	8.40	HHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	106	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	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%

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	2,290,846	763,615	0.00	0.00	6,560

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	19,302	—
Site Preparation	0.00	9,390	15.0	0.00	—
Grading	0.00	0.00	54.0	0.00	—
Paving	0.00	0.00	0.00	0.00	2.51

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

Condo/Townhouse	—	0%
Apartments Mid Rise	—	0%
Apartments Mid Rise	—	0%
User Defined Recreational	0.00	0%
Other Asphalt Surfaces	0.32	100%
Other Asphalt Surfaces	2.19	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005

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
Condo/Townhouse	570	694	568	214,411	4,140	5,040	4,125	1,557,174
Apartments Mid Rise	1,818	1,828	1,510	648,034	13,203	13,277	10,966	4,706,380
Apartments Mid Rise	503	1,254	987	247,989	3,652	9,107	7,171	1,801,035
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	570	694	568	214,411	4,140	5,040	4,125	1,557,174
Apartments Mid Rise	1,818	1,828	1,510	648,034	13,203	13,277	10,966	4,706,380
Apartments Mid Rise	503	1,254	987	247,989	3,652	9,107	7,171	1,801,035
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	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

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	100
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	505
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	132
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
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)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	100

Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	505
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	132
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
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)
2290846.05	763,615	0.00	0.00	6,560

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

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)
Condo/Townhouse	764,549	204	0.0330	0.0040	0.00
Apartments Mid Rise	2,976,698	204	0.0330	0.0040	0.00
Apartments Mid Rise	778,068	204	0.0330	0.0040	0.00
User Defined Recreational	0.00	204	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00

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)
Condo/Townhouse	764,549	204	0.0330	0.0040	0.00
Apartments Mid Rise	2,976,698	204	0.0330	0.0040	0.00

Apartments Mid Rise	778,068	204	0.0330	0.0040	0.00
User Defined Recreational	0.00	204	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	204	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)
Condo/Townhouse	3,626,640	0.00
Apartments Mid Rise	18,314,532	0.00
Apartments Mid Rise	4,787,165	0.00
User Defined Recreational	0.00	792,449
Other Asphalt Surfaces	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	3,626,640	0.00
Apartments Mid Rise	18,314,532	0.00
Apartments Mid Rise	4,787,165	0.00
User Defined Recreational	0.00	792,449
Other Asphalt Surfaces	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	73.9	—
Apartments Mid Rise	373	—
Apartments Mid Rise	97.7	—
User Defined Recreational	0.00	—
Other Asphalt Surfaces	0.00	—
Other Asphalt Surfaces	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	73.9	—
Apartments Mid Rise	373	—
Apartments Mid Rise	97.7	—
User Defined Recreational	0.00	—
Other Asphalt Surfaces	0.00	—
Other Asphalt Surfaces	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
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
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
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

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
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
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

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
Emergency Generator	Diesel	2.00	2.00	50.0	295	0.73

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

8. User Changes to Default Data

Screen	Justification
Land Use	Per site plans, and applicant provided information for on-site and off-site improvements
Construction: Construction Phases	Demolition based on single phase for (5-10 acre site) = 20 days Other phase lengths constructed by adding CalEEMod default phase lengths for individual project phases: Townhomes (4.41 acres --> 5) Market Rate Apartments(3.84 acres --> 3) Affordable Apartments (1.42 acres --> 2) total construction period matches applicants timeline

Operations: Energy Use	Adjusted for all electric Calculational Method is from Measure E-15 of the CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity
Construction: Trips and VMT	Adjustment for Site Prep Tree Removal Haul Adjustment for asphalt paving trips
Operations: Hearths	Project is all electric. No woodstoves. No fireplaces.
Operations: Vehicle Data	Adjusted per traffic study for weekdays and using ITE 11th Edition Saturday and Sunday Rates Total Net Project Daily WeekdayTrips = 2889
Construction: Dust From Material Movement	Per applicant

211-281 River Oaks Parkway Residential Project
Demolition Debris Calculations

Description	Area[1] (square feet)	height/depth (ft)	Volume (ft^3)	Demolition Waste Fraction	Demolition Volume (ft^3)	Demolition Volume (cy)	Demolition Waste Density (tons/cy)	Demolition Weight (tons)
Buildings[2]	164,606	10	1,646,060	0.25	411,515	15,241	0.50	7,621
Pavement	311,500	0.5	155,750	1	155,750	5,769	2.025	11,681
	476,106	-	-	-	-	-	-	**19,302**

Notes: cy = cubic yard
cf = cubic feet
sf = square feet

Building demolition estimates are based on methods used in CalEEMod (CAPCOA, 2022), based on 1 story building , assume 10 ft per floor where 1 sf = 10 cf of building volume, and 1 cf of building volume = 0.25 cf of waste. This approach can be used to estimate demolition for multiple story buildings.
1 cubic yard building waste = 0.5 ton weight

1 cubic yard of hot asphalt mix weighs 2.025 tons or 4050 lbs.

1 cubic yard = 27 cubic feet

[1] Source: FCS, 2024. Building and Pavement Square Footage Estimates obtained from Applicant.

[2] Source: California Air Pollution Control Officers Association (CAPCOA). 2022. Appendix C Emission Calculation Details for CalEEMod. April.

211-281 River Oaks Parkway Residential Project
Site Preparation - Tree Removal Haul

Number of Trees to Be Removed	220	
Volume Factor	2.67	CY/tree
Volume Tree Removal	586.7	CY
Capacity per vendor truck	10	CY
Truckloads Required	59	
Trips (2 per truck load)	117	
Days in Site Prep Phase	10	
One-way Vendor Trips per day	**12**	

Federal Emergency Management Agency (FEMA) , 2007. FEMA - Bulletin 325, Public Assistance Debris Management Guide, July.
15 trees, 8 inch in diameter = 40 CY (average)

211-281 River Oaks Parkway Residential Project
Site Grading - Material Export from Foundation

Use Building Footprint and assume 12" foundation, per CA Building Code Section R301 to calculate soil cut/export

acres	5.82
sf	253519.2
ft3	253519.2
cy	9390

211-281 River Oaks Parkway Residential Project
Asphalt Paving Construction Trips Calculation

Paved area (sf)	95,396	
Asphalt volume (cube feet) assume 6 inch pavement	47,698	
Asphalt volume (cy)	1,767	
Capacity per vendor truck (CY per truck)	16	
Trips	**220.83**	
Days in paving phase	**38**	
One-way Vendor Trips per day	12	

Concrete area (sf)	13,920	SF
Concrete volume (cube feet) assume 4 inch thick sidewalks	4,640	
Concrete volume (cy)	172	
Capacity per concrete mixer truck (CY per truck)	8	
Trips	**42.96**	
Days in paving phase	**38**	
One-way Vendor Trips per day	2	

Total Trips during Paving Phase	**14**

211-281 River Oaks Parkway Residential Project

Operational Vehicle Trip Generation Rate Adjustments

Trip-Generating Land Use	Size and Type			Trip Generation Rates and CalEEMod Inputs								Total Estimated Trips		
				ITE Trip Rates			Project Specific Reductions[1]		Adjusted Project Rates					
	Size Metric	Size	ITE Code	Weekday Daily Rate[1,2] (trips/DU)	Saturday Daily Rate[2] (trips/DU)	Sunday Daily Rate[2] (trips/DU)	Vehicle Mode Share Reduction[3]	Project -Specific Trip Reduction[4]	Weekday Daily Rate (trips/DU)	Saturday Daily Rate (trips/DU)	Sunday Daily Rate (trips/DU)	Weekday Daily Trips	Saturday Daily Trips	Sunday Daily Trips
Townhomes	DU	100	215	7.20	8.76	7.17	-12%	-10%	**5.70**	**6.94**	**5.68**	570	694	568
Apartments (Market Rate)	DU	505	221	4.54	4.57	3.77	-12%	-10%	**3.60**	**3.62**	**2.99**	1,816	1,828	1,508
Apartments (Affordable)	DU	132	223	4.81	12.00	9.44	-12%	-10%	**3.81**	**9.50**	**7.48**	503	1,255	987
												2,889	3,776	3,063

Notes/Sources:

[1] Hexagon Transportation Consultants, Inc., 2024. Project Trip Generation Estimates for 211-251-281 River Oaks Parkway Residential Project. May 22.

[2] Institute of Transportation Engineers, 2021. ITE Trip Generation Manual, 11th Edition.

[3] A 12% trip reduction ws appliced to the project basedon the location-based vehicle mode share % outputs (Table 17 of TA Handbook) produced from the San Jose Travel Demand Model for the place type: Suburban with Muiltifamily Housing.

[4] A 10% trip reduction was applied to the project based in the external trup adjustments obtained from the City's VMT Evaluation Tool.

211-281 River Oaks Parkway Residential Project
All-Electric Measure Electricity Adjustment to Replace NG Usage

CEC Electricity Demand Forecast Zone (EDFZ) **1**

Building Type / LandUse	Amount	Units	Electric End Use per Unit (DU or KSF)				Additional Energy for Electricity		Caleemod Electricity Usage kWhr/yr	Electricity including replacement of NG Enduses kWhr/yr
			Water Heater	Primary Heat	Cooking	Dryer	(per Unit) kWhr/yr	Total kWhr/yr		
Condo/Townhouse	100	Dwelling Units	1580	1075	329	387	3,371	337,100	427,449	**764,549**
Apartments Mid Rise	505	Dwelling Units	1146	757	246	334	2,483	1,253,915	1,722,783	**2,976,698**
Apartments Mid Rise	132	Dwelling Units	1146	757	246	334	2,483	327,756	450,312	**778,068**
User Defined Recreational	1.702	Acre	0	0	0	0	0	0	0	**0**
Other Non-Asphalt Surfaces	0.320	Acre	0	0	0	0	0	0	0	**0**
Other Asphalt Surfaces	2.190	Acre	0	0	0	0	0	0	0	**0**

Calculational Method is from Measure E-15 of the CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity
Emission Factors are From Data Tables E=15.2 from Appendix C of the Handbook

References:

CAPCOA, 2021. Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Available at: Available at: https://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf.

CAPCOA. 2021. Appendix C : Emission Factors and Data Tables from Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Available at: https://www.caleemod.com/documents/handbook/appendices/appendix_c.pdf

211-281 River Oaks Parkway Residential Project
Health Risk Assessment Inputs
DPM Emissions for AERMOD Inputs - Unmitigated

Net Work Days	774
Net Construction Years	3.0
Total Working Hours	6,192

Construction Year	On-site Construction Activity	On-site PM10E (lbs)	Off-Site PM10E (lbs)	Off-Site PM10E(lbs)		
				Worker	Vendor	Haul
2025	Demolition	18.35	6.38	-	-	6.38
2025	Site Preparation	13.66	1.62	-	0.07	1.55
2025	Grading	22.23	0.00	-	-	-
2025	Building Construction	25.91	1.75	-	1.75	-
2026	Building Construction	98.72	7.61	-	7.61	-
2027	Building Construction	87.75	7.61	-	7.61	-
2028	Building Construction	20.59	2.00	-	2.00	-
2028	Paving	9.71	0.20	-	0.20	-
2028	Architectural Coating	0.58	0.00	-	-	-
Total PM Exhaust (On-site)		**297.50**	**27.17**	-	19.23	7.937

CalEEMod Distance (miles)	11.7	8.4	20
Total Roadways Included within 1,000 ft	0.77	0.77	0.77
Roadway Emissions included	7%	9%	4%

	On-site Construction	Offsite Roadway	Off-Site Diesel PM10E (lbs)		
			Worker	Vendor	Haul
Modeled Emissions (lbs)	**297.50**	**2.059**	-	1.75	0.30
Hourly Emissions (lb/hr)	0.0480	0.00033	-	0.0003	0.000049

Note: PM10E = PM10 Exhaust which is a surrogate for Diesel Exhaust, particulate matter

Source	**percentage**	**Modeling Inputs**	
Site Emissions	100%	4.80E-02	lb/hr
Roadway 1 Emissions	67%	2.2E-04	lb/hr
Roadway 2 Emissions	33%	1.1E-04	lb/hr

211-281 River Oaks Parkway Residential Project
Health Risk Assessment Inputs
DPM Emissions for AERMOD Inputs - Mitigated

Net Work Days	774
Net Construction Years	3.0
Total Working Hours	6,192

Construction Year	On-site Construction Activity	On-site PM10E (lbs)	Off-Site PM10E (lbs)	Off-Site PM10E(lbs)		
				Worker	Vendor	Haul
2026	Demolition	4.02	6.38	-	-	6.38
2026	Site Preparation	1.00	1.62	-	0.07	1.55
2026	Grading	3.27	0.00	-	-	-
2027	Grading	7.16	1.75	-	1.75	-
2026	Building Construction	30.96	7.61	-	7.61	-
2027	Building Construction	30.85	7.61	-	7.61	-
2028	Building Construction	8.09	2.00	-	2.00	-
2027	Paving	3.27	0.20	-	0.20	-
2028	Architectural Coating	1.16	0.00	-	-	-
Total PM Exhaust (On-site)		**89.78**	**27.17**	-	19.23	7.937

CalEEMod Distance (miles)	11.7	8.4	20
Total Roadways Included within 1,000 ft	0.77	0.77	0.77
Roadway Emissions included	7%	9%	4%

	On-site Construction	Offsite Roadway	Off-Site Diesel PM10E (lbs)		
			Worker	Vendor	Haul
Modeled Emissions (lbs)	**89.78**	**2.059**	-	1.75	0.30
Hourly Emissions (lb/hr)	0.0145	0.00033	-	0.00028	0.00005

Note: PM10E = PM10 Exhaust which is a surrogate for Diesel Exhaust, particulate matter

Source	**percentage**	**Modeling Inputs**	
Site Emissions	100%	1.45E-02	lb/hr
Roadway 1 Emissions	67%	2.24E-04	lb/hr
Roadway 2 Emissions	33%	1.08E-04	lb/hr

211-281 River Oaks Parkway Residential Project
Health Risk Assessment Inputs
Fine Particulate Matter (PM2.5) Emissions for AERMOD Inputs - Unmitigated

Net Work Days	260
Net Construction Years	1.00
Total Working Hours	2,080

Construction Year	On-site Construction Activity	On-site PM2.5T (lbs)	Off-Site PM2.5T (lbs)	Off-Site PM2.5T(lbs)		
				Worker	Vendor	Haul
2025	Demolition	57.93	28.98	0.57	-	28.41
2025	Site Preparation	52.00	7.54	0.33	0.30	6.91
2025	Grading	46.10	0.68	0.68	-	-
2025	Building Construction	23.84	71.20	60.38	10.81	-
2026	Building Construction	52.98	180.46	153.05	27.41	-
Total PM Exhaust (On-site)		**232.85**	**288.86**	215.02	38.52	35.325

Note: Max Year spans 8/4/2025-7/31/2026 and includes 7/12 of 2026 Building Construction Emissions.

CalEEMod Distance (miles)	11.7	8.4	20
Roadways Included within 1,000 ft	0.77	0.77	0.77
Roadway Emissions included	7%	9%	4%

	On-site Construction PM2.5T	Onsite Roadway PM2.5T	Off-Site Diesel PM2.5T (lbs)		
			Worker	Vendor	Haul
Modeled Emissions (lbs)	**232.85**	**18.954**	14.09	3.51	1.35
Hourly Emissions (lb/hr)	0.1119	0.00911	0.0068	0.0017	0.0007

Note: PM2.5T = PM10 Exhaust which is a surrogate for Diesel Exhaust, particulate matter

Source	**percentage**	**Model Inputs**	
Site Emissions	100%	1.12E-01	lb/hr
Roadway 1 Emissions	67%	6.1E-03	lb/hr
Roadway 2 Emissions	33%	3.0E-03	lb/hr

211-281 River Oaks Parkway Residential Project
Health Risk Assessment Inputs
Fine Particulate Matter (PM2.5) Emissions for AERMOD Inputs - Mitigated

Net Work Days	260
Net Construction Years	1.00
Total Working Hours	2,080

Construction Year	On-site Construction Activity	On-site PM2.5T (lbs)	Off-Site PM2.5T (lbs)	Off-Site PM2.5T(lbs)		
				Worker	Vendor	Haul
2025	Demolition	44.84	28.98	0.57	-	28.41
2025	Site Preparation	40.43	7.54	0.33	0.30	6.91
2025	Grading	28.84	0.68	0.68	-	-
2025	Building Construction	6.78	71.20	60.38	10.81	-
2026	Building Construction	17.12	180.46	153.05	27.41	-
Total PM Exhaust (On-site)		**138.01**	**288.86**	215.02	38.52	35.325

Note: Max Year spans 8/4/2025-7/31/2026 and includes 7/12 of 2026 Building Construction Emissions.

CalEEMod Distance (miles)	11.7	8.4	20
Roadways Included within 1,000 ft	0.77	0.77	0.77
Roadway Emissions included	7%	9%	4%

	On-site Construction	Offsite Roadway	Off-Site Diesel PM2.5T (lbs)		
			Worker	Vendor	Haul
Modeled Emissions (lbs)	**138.01**	**18.954**	14.09	3.51	1.35
Hourly Emissions (lb/hr)	0.0664	0.00911	0.007	0.002	0.001

Note: PM2.5T = PM10 Exhaust which is a surrogate for Diesel Exhaust, particulate matter

Source	**percentage**	**Model Inputs**	
Site Emissions	100%	6.64E-02	lb/hr
Roadway 1 Emissions	67%	6.14E-03	lb/hr
Roadway 2 Emissions	33%	2.97E-03	lb/hr

211-281 River Oaks Parkway Residential Project
Modeling Parameters for Construction HRA
Diesel Particulate Matter Emission Sources

Source ID	Modeled Source	Location Description	AERMOD Source Type	Size		Initial Source Release Parameters (m) Release Height	Initial Lateral Dimension	Initial Vertical Dimension	Emissions[4] (lb/hr)	AERMOD Source Emission Rate	
SITE_UM	Site - Off-Road Equipment Diesel Exhaust[1]	Project Site - Construction Area	Area	39818.2	m2	5	—	1.4	0.0480	1.5E-07	g/m2-sec
SITE_T4	Site - Off-Road Equipment with Tier 4[1]	Project Site - Construction Area (Tier 4)	Area	39818.2	m2	5	—	1.4	0.0145	4.6E-08	g/m2-sec
ROAD1_DPM	Roadway 1 - On-Road Diesel Exhaust[2,3]	Truck Route - River Oaks Parkway	Line-Volume	831	meters	3.40	5.12	3.16	2.2E-04	2.8E-05	g/s
ROAD2_DPM	Roadway 2- On-Road Diesel Exhaust[2,4]	Truck Route - Zanker Drive	Line-Volume	386.6	meters	3.40	5.12	3.16	1.1E-04	1.4E-05	g/s

1 Construction exhaust modeled as an area source. Release parameters for construction equipment DPM exhaust modeling from SCAQMD (2008) for gaseous exhaust from construction equipment.

2 Emissions for On-Road Mobile Sources (Vendor and Haul Diesel Exhaust) modeled only for roadways within 1,000 feet of the site within the modeling domain.

3 Parameters calculated as per US EPA Haul Road Workgroup Final Report released on March 2, 2012 which suggests the use of Adjacent Volume Sources to represent the haul road.

4 Emissions from CalEEModeling for Construction modeled during construction hours as included in Attachment A. See Note 2 above regarding roadway emission portion modeled.

Variable Emission Factors: ALL Sources

Monday - Friday						
1-6	0	0	0	0	0	0
7-12	0	0	1	1	1	1
13-18	0	1	1	1	1	0
19-24	0	0	0	0	0	0
Saturday						
1-6	0	0	0	0	0	0
7-12	0	0	0	0	0	0
13-18	0	0	0	0	0	0
19-24	0	0	0	0	0	0
Sunday						
1-6	0	0	0	0	0	0
7-12	0	0	0	0	0	0
13-18	0	0	0	0	0	0
19-24	0	0	0	0	0	0

211-281 River Oaks Parkway Residential Project
Modeling Parameters for Construction HRA
Fine Particulate Matter (PM2.5) Emission Sources

Source ID	Modeled Source	Location Description	AERMOD Source Type	Size		Initial Source Release Parameters (m) Release Height	Initial Lateral Dimension	Initial Vertical Dimension	Emissions[4] (lb/hr)	AERMOD Source Emission Rate	
SITE_UM	Site - Off-Road Equipment PM2.5[1]	Project Site - Construction Area	Area	39818.2	m2	5	—	1.4	0.1119	3.5E-07	g/m2-sec
SITE_T4	Site - Off-Road Equipment with Tier 4[1]	Project Site - Construction Area (Tier 4)	Area	39818.2	m2	5	—	1.4	0.0664	2.1E-07	g/m2-sec
ROAD1_PM25	Roadway 1 -PM2.5 [2,3]	Truck Route - River Oaks Parkway	Line-Volume	831	meters	3.40	5.12	3.16	6.1E-03	7.7E-04	g/s
ROAD2_PM26	Roadway 2 -PM2.5 [2,4]	Truck Route - Zanker Drive	Line-Volume	386.6	meters	3.40	5.12	3.16	3.0E-03	3.7E-04	g/s

1 Construction exhaust modeled as an area source. Release parameters for construction equipment DPM exhaust modeling from SCAQMD (2008) for gaseous exhaust from construction equipment.

2 Emissions for On-Road Mobile Sources (Vendor and Haul Diesel Exhaust) modeled only for roadways within 1,000 feet of the site within the modeling domain.

3 Parameters calculated as per US EPA Haul Road Workgroup Final Report released on March 2, 2012 which suggests the use of Adjacent Volume Sources to represent the haul road.

4 Emissions from CalEEModeling for Construction modeled during construction hours as included in Attachment A. See Note 2 above regarding roadway emission portion modeled.

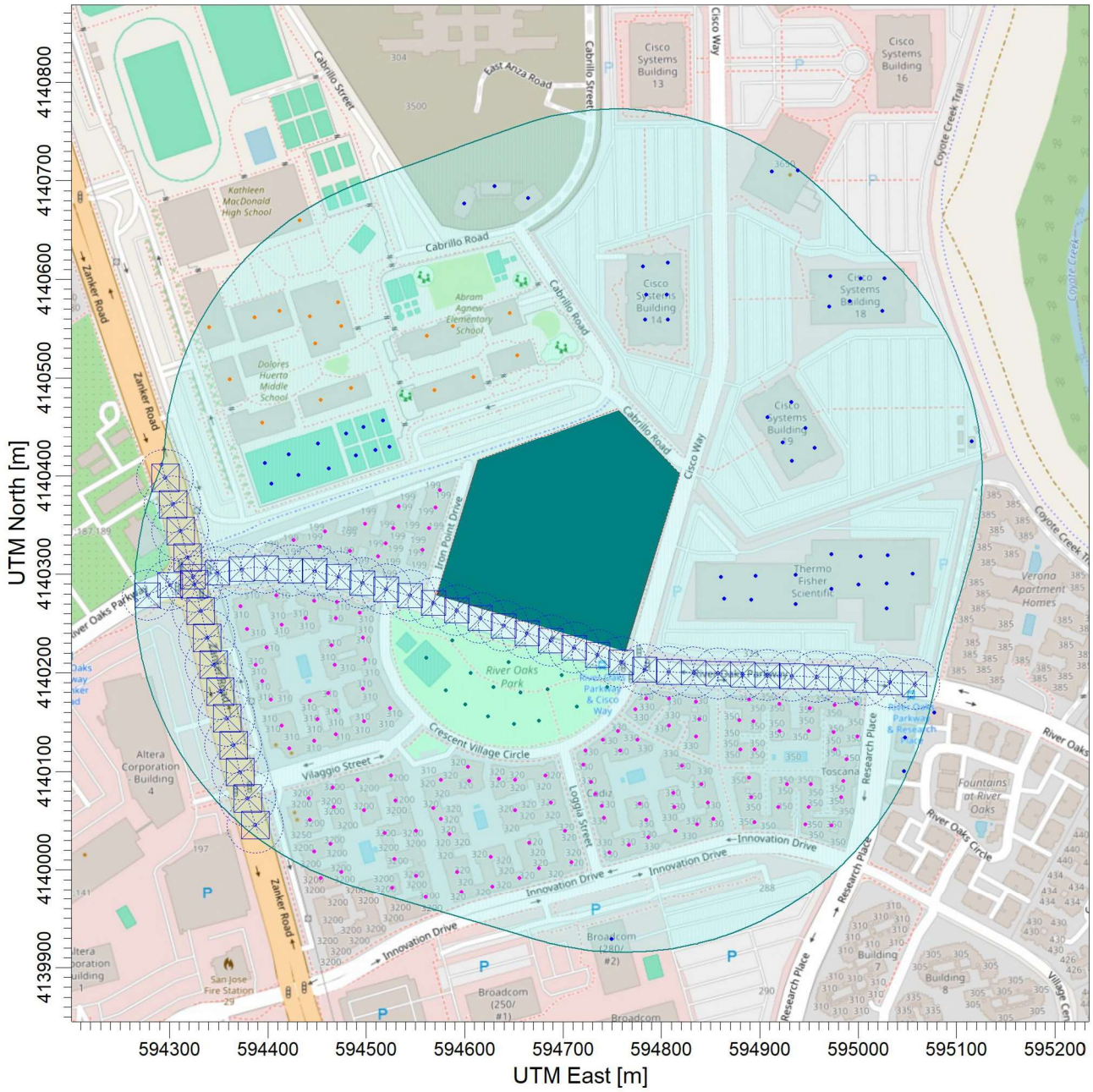
5 Construction exhaust modeled as an area source. Modeled as per BAAQMD 2022 CEQA Guidelines which permits PM2.5 Dust to be modeled along with PM2.5Exhaust.

Variable Emission Factors: ALL Sources

Monday - Friday							
	1-6	0	0	0	0	0	0
	7-12	0	0	1	1	1	1
	13-18	0	1	1	1	1	0
	19-24	0	0	0	0	0	0
Saturday							
	1-6	0	0	0	0	0	0
	7-12	0	0	0	0	0	0
	13-18	0	0	0	0	0	0
	19-24	0	0	0	0	0	0
Sunday							
	1-6	0	0	0	0	0	0
	7-12	0	0	0	0	0	0
	13-18	0	0	0	0	0	0
	19-24	0	0	0	0	0	0

PROJECT TITLE:

211 - 281 River Oaks Parkway Residential Project
Source and Receptor Locations



Source Legend:	Receptor Legend:	Sources: **2**
Site ■	● Residential	Receptors: **222**
Area Source -----	● Non-Residential	
Line-Volume ☒☒☒	● School	
	● Park – Open Space	

SCALE: 1:6,500

0 0.2 km

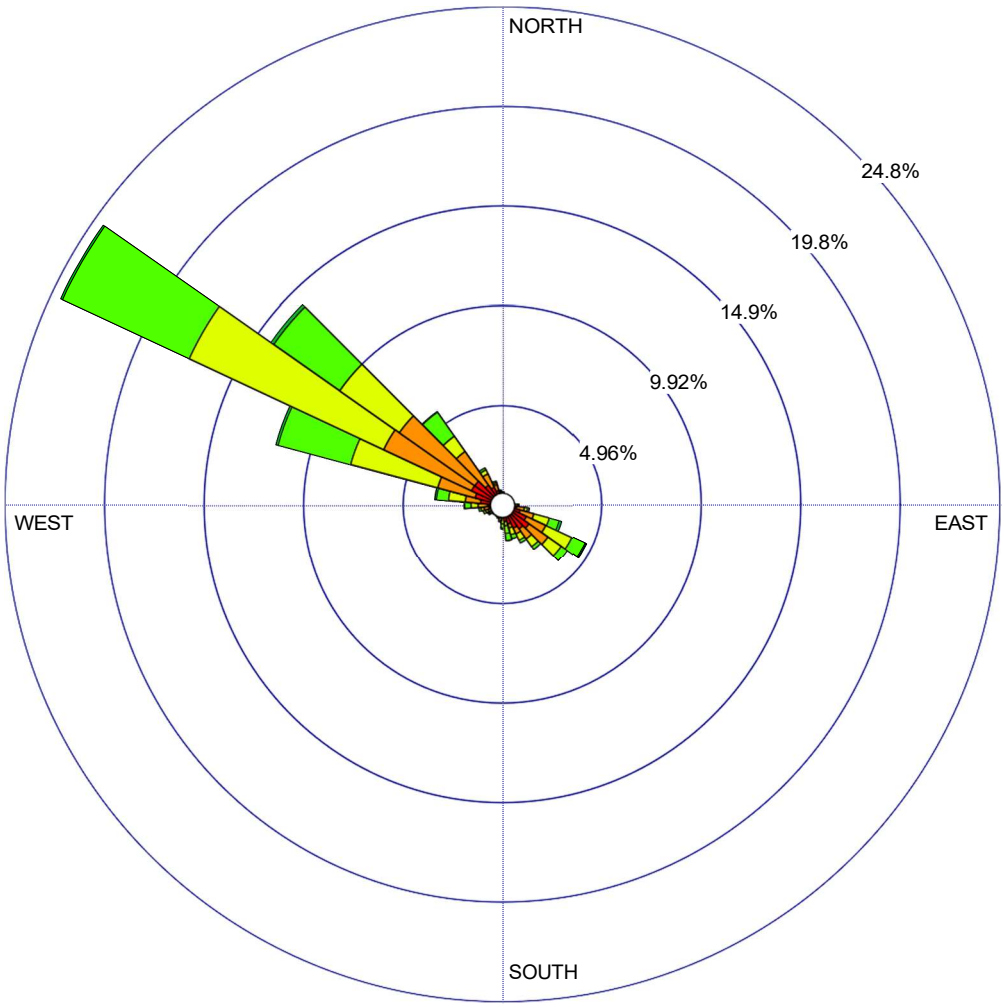
AERMOD View - Lakes Environmental Software

WIND ROSE PLOT:

San Jose International Airport - KSJC
Wind Direction during Construction Hours

DISPLAY:

Wind Speed
Direction (blowing from)



WIND SPEED
(m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 0.90%

COMMENTS:

Wind Rose is generated just for the hours with emissions when construction would occur or from 8 AM – 5 PM. This corresponds to the modeling hours in AERMOD.

DATA PERIOD:

Start Date: 1/1/2013 - 08:00
End Date: 12/31/2017 - 17:00

CALM WINDS:

0.90%

AVG. WIND SPEED:

3.77 m/s

How to Read a Wind Rose Diagram

The wind rose above shows the general wind direction and speed for the meteorological data set used in the AERMOD modeling for the project.'

The circular format of the wind rose shows the direction the winds blew from and the length of each "spoke" around the circle shows how often the wind blew from that direction.

Control Pathway

AERMOD

Dispersion Options

Titles

F:\Jobs\46450007\ConHRA\ConHRA.isc

Dispersion Options

☑ Regulatory Default ☐ Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

☑ Concentration
☐ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

Plume Depletion

☐ Dry Removal
☐ Wet Removal

Output Warnings

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

PM10

Averaging Time Options

Hours

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☐ 24

☐ Month ☑ Period ☐ Annual

Exponential Decay

Default half-life of 4 hrs will be used

Terrain Height Options

☐ Flat ☑ Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

☐ Yes ☑ No

Default Height = 0.00 m

Control Pathway

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: ConHRA.err

Source Pathway - Source Inputs

AERMOD

Source Pathway - Source Inputs

Polygon Area Sources

Source Type: AREA POLY

Source: SITE_DPM (Construction Site)

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
6.37	5.00	1.52E-7	1.40	5	594571.72	4140280.66
		1.52E-7			594761.51	4140218.55
		1.52E-7			594819.02	4140402.01
		1.52E-7			594754.61	4140468.73
		1.52E-7			594613.70	4140416.39

Source Type: AREA POLY

Source: SITE_DPMT4 (Construction Site)

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
6.37	5.00	4.59E-8	1.40	5	594571.72	4140280.66
		4.59E-8			594761.51	4140218.55
		4.59E-8			594819.02	4140402.01
		4.59E-8			594754.61	4140468.73
		4.59E-8			594613.70	4140416.39

Source Type: AREA POLY

Source: SITE_PM25 (Construction Site PM25)

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
6.37	5.00	3.54E-7	1.40	5	594571.72	4140280.66
		3.54E-7			594761.51	4140218.55
		3.54E-7			594819.02	4140402.01
		3.54E-7			594754.61	4140468.73
		3.54E-7			594613.70	4140416.39

Source Pathway - Source Inputs

Source Type: AREA POLY

Source: SITE_PM25T4 (Construction Site PM25 T4)

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
6.37	5.00	2.09E-7	1.40	5	594571.72	4140280.66
		2.09E-7			594761.51	4140218.55
		2.09E-7			594819.02	4140402.01
		2.09E-7			594754.61	4140468.73
		2.09E-7			594613.70	4140416.39

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME

Source: ROAD1_DPM (River Oaks Parkway DPM)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
25.00	0.00003	Surface-Based	594266.63	4140273.48	5.26	3.40
			594317.32	4140296.71	5.34	3.40
			594387.03	4140307.28	5.49	3.40
			594429.28	4140303.05	5.76	3.40
			594441.95	4140305.16	5.84	3.40
			594547.57	4140277.70	6.28	3.40
			594644.73	4140246.02	6.81	3.40
			594733.45	4140218.56	7.23	3.40
			594788.37	4140201.66	7.15	3.40
			594972.14	4140195.32	7.66	3.40
			595075.64	4140186.88	8.04	3.40

Source Type: LINE VOLUME

Source: ROAD1_PM25 (River Oaks Parkway PM25)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
25.00	0.00077	Surface-Based	594266.63	4140273.48	5.26	3.40
			594317.32	4140296.71	5.34	3.40
			594387.03	4140307.28	5.49	3.40
			594429.28	4140303.05	5.76	3.40
			594441.95	4140305.16	5.84	3.40
			594547.57	4140277.70	6.28	3.40
			594644.73	4140246.02	6.81	3.40
			594733.45	4140218.56	7.23	3.40
			594788.37	4140201.66	7.15	3.40
			594972.14	4140195.32	7.66	3.40
			595075.64	4140186.88	8.04	3.40

Source Pathway - Source Inputs

Source Type: LINE VOLUME
Source: ROAD2_DPM (Zanker Rd DPM)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
28.00	0.00001	Surface-Based	594291.94	4140411.39	5.42	3.40
			594316.36	4140325.91	5.36	3.40
			594371.31	4140101.53	5.46	3.40
			594389.63	4140037.42	5.43	3.40

Source Type: LINE VOLUME
Source: ROAD2_PM25 (Zanker Rd PM25)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
28.00	0.00038	Surface-Based	594291.94	4140411.39	5.42	3.40
			594316.36	4140325.91	5.36	3.40
			594371.31	4140101.53	5.46	3.40
			594389.63	4140037.42	5.43	3.40

Source Pathway - Source Inputs

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ROAD1_PM25	L0000142	594277.99	4140278.69	5.24	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000143	594300.72	4140289.10	5.17	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000144	594323.98	4140297.72	5.33	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000145	594348.70	4140301.47	5.21	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000146	594373.42	4140305.21	5.38	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000147	594398.21	4140306.16	5.60	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000148	594423.08	4140303.67	5.74	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000149	594447.69	4140303.67	5.80	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000150	594471.88	4140297.38	5.92	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000151	594496.08	4140291.09	6.02	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000152	594520.27	4140284.80	6.07	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000153	594544.47	4140278.51	6.21	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000154	594568.29	4140270.95	6.27	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000155	594592.06	4140263.20	6.43	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000156	594615.83	4140255.44	6.53	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000157	594639.60	4140247.69	6.69	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000158	594663.45	4140240.22	6.71	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000159	594687.34	4140232.83	6.83	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000160	594711.22	4140225.44	6.98	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000161	594735.10	4140218.05	7.05	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000162	594759.00	4140210.70	7.09	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000163	594782.89	4140203.35	7.10	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000164	594807.63	4140201.00	7.01	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000165	594832.61	4140200.14	7.05	3.40	0.00002	25.00	Surface-Based	11.63	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ROAD1_PM25	L0000166	594857.60	4140199.27	7.14	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000167	594882.58	4140198.41	7.22	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000168	594907.57	4140197.55	7.36	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000169	594932.55	4140196.69	7.41	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000170	594957.54	4140195.83	7.56	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000171	594982.49	4140194.48	7.68	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000172	595007.41	4140192.45	7.76	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000173	595032.33	4140190.41	7.87	3.40	0.00002	25.00	Surface-Based	11.63	3.16
	L0000174	595057.24	4140188.38	7.98	3.40	0.00002	25.00	Surface-Based	11.63	3.16

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ROAD2_PM25	L0000175	594295.78	4140397.93	5.33	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000176	594303.48	4140371.01	5.28	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000177	594311.17	4140344.09	5.36	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000178	594318.53	4140317.07	5.37	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000179	594325.19	4140289.88	5.33	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000180	594331.85	4140262.68	5.29	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000181	594338.51	4140235.48	5.40	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000182	594345.17	4140208.29	5.57	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000183	594351.83	4140181.09	5.54	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000184	594358.49	4140153.90	5.40	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000185	594365.15	4140126.70	5.39	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000186	594371.89	4140099.52	5.51	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000187	594379.58	4140072.60	5.58	3.40	0.00003	28.00	Surface-Based	13.02	3.16
	L0000188	594387.27	4140045.68	5.49	3.40	0.00003	28.00	Surface-Based	13.02	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ROAD1_DPM	L0000189	594277.99	4140278.69	5.24	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000190	594300.72	4140289.10	5.17	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000191	594323.98	4140297.72	5.33	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000192	594348.70	4140301.47	5.21	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000193	594373.42	4140305.21	5.38	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000194	594398.21	4140306.16	5.60	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000195	594423.08	4140303.67	5.74	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000196	594447.69	4140303.67	5.80	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000197	594471.88	4140297.38	5.92	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000198	594496.08	4140291.09	6.02	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000199	594520.27	4140284.80	6.07	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000200	594544.47	4140278.51	6.21	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000201	594568.29	4140270.95	6.27	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000202	594592.06	4140263.20	6.43	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000203	594615.83	4140255.44	6.53	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000204	594639.60	4140247.69	6.69	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000205	594663.45	4140240.22	6.71	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000206	594687.34	4140232.83	6.83	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000207	594711.22	4140225.44	6.98	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000208	594735.10	4140218.05	7.05	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000209	594759.00	4140210.70	7.09	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000210	594782.89	4140203.35	7.10	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000211	594807.63	4140201.00	7.01	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000212	594832.61	4140200.14	7.05	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000213	594857.60	4140199.27	7.14	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ROAD1_DPM	L0000214	594882.58	4140198.41	7.22	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000215	594907.57	4140197.55	7.36	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000216	594932.55	4140196.69	7.41	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000217	594957.54	4140195.83	7.56	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000218	594982.49	4140194.48	7.68	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000219	595007.41	4140192.45	7.76	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000220	595032.33	4140190.41	7.87	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16
	L0000221	595057.24	4140188.38	7.98	3.40	8.51E-7	25.00	Surface-Based	11.63	3.16

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
ROAD2_DPM	L0000222	594295.78	4140397.93	5.33	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000223	594303.48	4140371.01	5.28	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000224	594311.17	4140344.09	5.36	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000225	594318.53	4140317.07	5.37	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000226	594325.19	4140289.88	5.33	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000227	594331.85	4140262.68	5.29	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000228	594338.51	4140235.48	5.40	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000229	594345.17	4140208.29	5.57	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000230	594351.83	4140181.09	5.54	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000231	594358.49	4140153.90	5.40	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000232	594365.15	4140126.70	5.39	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000233	594371.89	4140099.52	5.51	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000234	594379.58	4140072.60	5.58	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16
	L0000235	594387.27	4140045.68	5.49	3.40	9.90E-7	28.00	Surface-Based	13.02	3.16

Source Pathway - Source Inputs

AERMOD

Source Pathway

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID: PM25_UM	List of Sources in Group (Source Range or Single Sources)
	SITE_PM25
	ROAD1_PM25
	ROAD2_PM25

Source Group ID: PM25_T4	List of Sources in Group (Source Range or Single Sources)
	SITE_PM25T4
	ROAD1_PM25
	ROAD2_PM25

Source Group ID: DPM_UM	List of Sources in Group (Source Range or Single Sources)
	SITE_DPM
	ROAD1_DPM
	ROAD2_DPM

Source Group ID: DPM_T4	List of Sources in Group (Source Range or Single Sources)
	SITE_DPMT4
	ROAD1_DPM
	ROAD2_DPM

Variable Emissions

Hour-of-Day / Day-of-Week Emission Rate Variation

Scenario: Scenario 1

Source ID: SITE_DPM

Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	1.00	1.00	1.00	1.00
	13 - 18	0.00	1.00	1.00	1.00	1.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source ID: SITE_DPMT4

Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	1.00	1.00	1.00	1.00
	13 - 18	0.00	1.00	1.00	1.00	1.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source ID: ROAD1_DPM

Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	1.00	1.00	1.00	1.00
	13 - 18	0.00	1.00	1.00	1.00	1.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source ID: ROAD2_DPM

Weekdays								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	1.00	1.00	1.00	1.00
	13 - 18	0.00	1.00	1.00	1.00	1.00	0.00

Scenario: Scenario 1

Source ID:	**ROAD2_DPM**							
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SITE_PM25**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	1.00	1.00	1.00	1.00
	Day	13 - 18	0.00	1.00	1.00	1.00	1.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**SITE_PM25T4**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	1.00	1.00	1.00	1.00
	Day	13 - 18	0.00	1.00	1.00	1.00	1.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:	**ROAD1_PM25**							
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	1.00	1.00	1.00	1.00
	Day	13 - 18	0.00	1.00	1.00	1.00	1.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source Pathway

Scenario: Scenario 1

Source ID: ROAD1_PM25

Sunday								
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Source ID: ROAD2_PM25

Weekdays							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	1.00	1.00	1.00	1.00
	13 - 18	0.00	1.00	1.00	1.00	1.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday							
Hour of Day	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
	19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	594773.25	4140162.97	RES	8.59	
2	594784.27	4140173.98	RES	8.37	
3	594807.41	4140173.98	RES	8.88	
4	594834.95	4140170.68	RES	9.17	
5	594838.25	4140153.05	RES	9.74	
6	594834.95	4140135.42	RES	9.68	
7	594807.41	4140146.44	RES	9.77	
8	594755.63	4140140.93	RES	9.24	
9	594775.46	4140132.12	RES	9.70	
10	594757.83	4140121.10	RES	9.81	
11	594740.21	4140132.12	RES	9.10	
12	594722.58	4140121.10	RES	8.99	
13	594720.38	4140106.78	RES	8.93	
14	594728.09	4140089.15	RES	9.01	
15	594732.49	4140077.04	RES	9.01	
16	594739.10	4140064.92	RES	9.02	
17	594741.31	4140052.80	RES	9.02	
18	594746.82	4140017.55	RES	7.45	
19	594766.64	4140025.26	RES	8.07	
20	594786.47	4140032.97	RES	8.66	
21	594784.27	4140050.60	RES	9.86	
22	594777.66	4140067.12	RES	9.80	
23	594811.81	4140078.14	RES	9.83	
24	594812.91	4140063.82	RES	9.90	
25	594814.02	4140039.58	RES	8.44	
26	594836.05	4140046.19	RES	8.47	
27	594852.57	4140051.70	RES	8.45	
28	594847.07	4140068.22	RES	9.88	
29	594840.46	4140086.95	RES	9.53	
30	594820.63	4140105.68	RES	9.55	

31	594557.33	4140324.91	RES	6.57
32	594563.94	4140346.94	RES	6.51
33	594570.55	4140367.87	RES	6.64
34	594574.96	4140385.50	RES	6.78
35	594533.09	4140368.98	RES	6.75
36	594527.59	4140346.94	RES	6.60
37	594519.87	4140331.52	RES	6.45
38	594512.16	4140318.30	RES	6.32
39	594498.94	4140351.35	RES	6.51
40	594483.52	4140323.81	RES	6.24
41	594458.18	4140343.64	RES	6.29
42	594452.67	4140328.21	RES	6.08
43	594426.23	4140334.82	RES	6.09
44	594372.25	4140267.62	RES	7.23
45	594378.86	4140244.49	RES	7.59
46	594408.61	4140278.64	RES	7.48
47	594414.11	4140248.89	RES	8.33
48	594438.35	4140255.50	RES	8.32
49	594447.16	4140273.13	RES	7.75
50	594470.30	4140272.03	RES	7.22
51	594469.20	4140255.50	RES	8.31
52	594493.43	4140261.01	RES	7.62
53	594496.74	4140235.67	RES	7.96
54	594464.79	4140227.96	RES	8.33
55	594468.10	4140208.13	RES	8.33
56	594498.94	4140213.64	RES	8.12
57	594496.74	4140183.90	RES	8.51
58	594524.28	4140164.07	RES	8.44
59	594497.84	4140150.85	RES	8.47
60	594469.20	4140137.63	RES	7.68
61	594469.20	4140161.86	RES	8.53
62	594461.49	4140179.49	RES	8.48
63	594442.76	4140171.78	RES	8.30
64	594450.47	4140153.05	RES	8.30
65	594447.16	4140131.02	RES	7.08
66	594421.83	4140123.31	RES	6.25
67	594414.11	4140146.44	RES	7.08
68	594403.10	4140172.88	RES	7.27

69	594394.28	4140191.61	RES	6.68
70	594387.68	4140208.13	RES	6.57
71	594398.69	4140225.76	RES	8.18
72	594603.60	4140104.58	RES	8.50
73	594604.70	4140090.26	RES	9.04
74	594576.06	4140091.36	RES	8.46
75	594568.35	4140062.71	RES	8.72
76	594576.06	4140051.70	RES	8.90
77	594584.87	4140036.27	RES	9.03
78	594592.58	4139997.72	RES	8.95
79	594626.73	4140013.14	RES	9.42
80	594627.84	4139983.40	RES	7.13
81	594596.99	4139977.89	RES	7.43
82	594655.38	4139992.21	RES	7.72
83	594665.29	4140027.46	RES	9.56
84	594675.21	4140002.12	RES	8.31
85	594701.65	4140039.58	RES	8.63
86	594708.26	4140007.63	RES	7.60
87	594681.82	4140095.76	RES	9.06
88	594687.33	4140068.22	RES	9.09
89	594650.97	4140060.51	RES	9.26
90	594650.97	4140091.36	RES	9.17
91	594634.45	4140092.46	RES	9.21
92	594441.66	4140072.63	RES	7.48
93	594465.89	4140083.65	RES	7.48
94	594491.23	4140091.36	RES	7.96
95	594525.38	4140095.76	RES	8.90
96	594497.84	4140060.51	RES	8.85
97	594466.99	4140063.82	RES	8.92
98	594442.76	4140050.60	RES	7.83
99	594447.16	4140018.65	RES	8.07
100	594463.69	4140026.36	RES	8.66
101	594453.77	4139992.21	RES	8.12
102	594474.71	4139997.72	RES	8.63
103	594518.77	4140037.38	RES	8.72
104	594529.79	4140070.43	RES	9.06
105	594550.72	4140039.58	RES	8.62
106	594528.69	4140010.94	RES	8.71

107	594550.72	4139994.41	RES	9.04
108	594526.48	4139982.29	RES	9.05
109	594560.64	4139972.38	RES	8.22
110	594894.44	4140048.39	RES	7.84
111	594891.13	4140073.73	RES	9.20
112	594888.93	4140093.56	RES	9.29
113	594927.49	4140086.95	RES	9.26
114	594918.67	4140063.82	RES	9.13
115	594951.72	4140086.95	RES	9.30
116	594949.52	4140063.82	RES	9.21
117	594946.22	4140046.19	RES	8.02
118	594972.65	4140045.09	RES	8.50
119	594982.57	4140073.73	RES	8.92
120	594984.77	4140090.26	RES	8.94
121	594988.08	4140112.29	RES	9.04
122	594975.96	4140122.20	RES	9.27
123	594974.86	4140139.83	RES	9.42
124	594999.09	4140135.42	RES	8.47
125	594997.99	4140168.47	RES	8.35
126	594975.96	4140167.37	RES	8.79
127	594950.62	4140164.07	RES	8.44
128	594949.52	4140140.93	RES	9.71
129	594919.78	4140168.47	RES	8.35
130	594919.78	4140140.93	RES	9.68
131	594888.93	4140172.88	RES	8.26
132	594893.34	4140150.85	RES	9.33
133	594879.01	4140151.95	RES	9.29
134	594880.12	4140122.20	RES	9.27
135	594894.44	4140122.20	RES	9.29
136	595047.57	4140134.32	NON-RES	9.30
137	595077.31	4140159.66	NON-RES	9.19
138	595046.47	4140100.17	NON-RES	9.26
139	594749.02	4139929.41		6.96
140	594394.28	4140454.90	SCHOOL	6.39
141	594453.77	4140478.04	SCHOOL	6.75
142	594484.62	4140490.16	SCHOOL	6.76
143	594569.45	4140487.95	SCHOOL	7.49
144	594609.11	4140501.17	SCHOOL	7.40

145	594653.17	4140523.21	SCHOOL	7.54
146	594645.46	4140566.17	SCHOOL	7.72
147	594588.18	4140552.95	SCHOOL	7.53
148	594561.74	4140543.04	SCHOOL	7.52
149	594448.27	4140535.33	SCHOOL	6.85
150	594474.71	4140552.95	SCHOOL	6.74
151	594442.76	4140562.87	SCHOOL	6.83
152	594471.40	4140577.19	SCHOOL	6.65
153	594411.91	4140568.37	SCHOOL	6.62
154	594386.57	4140561.76	SCHOOL	6.61
155	594340.30	4140551.85	SCHOOL	6.47
156	594361.24	4140498.97	SCHOOL	6.52
157	594780.97	4140613.54	NON-RES	7.58
158	594806.30	4140616.85	NON-RES	7.57
159	594784.27	4140584.90	NON-RES	7.54
160	594805.20	4140584.90	NON-RES	7.56
161	594783.17	4140559.56	NON-RES	7.59
162	594806.30	4140559.56	NON-RES	7.56
163	594907.66	4140460.41	NON-RES	7.94
164	594931.89	4140475.84	NON-RES	8.01
165	594923.08	4140433.97	NON-RES	7.90
166	594946.22	4140449.40	NON-RES	7.91
167	594860.29	4140297.37	NON-RES	8.47
168	594863.59	4140275.33	NON-RES	8.71
169	594895.54	4140298.47	NON-RES	8.43
170	594891.13	4140274.23	NON-RES	8.68
171	594936.30	4140299.57	NON-RES	8.40
172	594936.30	4140269.83	NON-RES	8.74
173	594972.65	4140320.50	NON-RES	8.03
174	594972.65	4140285.25	NON-RES	8.22
175	595002.40	4140318.30	NON-RES	8.30
176	595000.20	4140289.66	NON-RES	8.41
177	595029.94	4140319.40	NON-RES	8.37
178	595028.84	4140290.76	NON-RES	8.71
179	595028.84	4140265.42	NON-RES	8.33
180	595055.28	4140300.67	NON-RES	8.69
181	594971.55	4140603.63	NON-RES	7.88
182	594970.45	4140572.78	NON-RES	7.89

183	595002.40	4140601.42	NON-RES	7.88
184	594991.38	4140578.29	NON-RES	7.87
185	595026.64	4140601.42	NON-RES	7.81
186	595024.43	4140568.37	NON-RES	7.76
187	594912.06	4140709.39		7.56
188	594938.50	4140710.49		7.61
189	594561.02	4140215.60	POS	7.82
190	594580.85	4140182.55	POS	8.25
191	594600.68	4140168.22	POS	8.24
192	594623.81	4140156.11	POS	8.28
193	594650.25	4140148.39	POS	8.49
194	594675.59	4140151.70	POS	8.64
195	594714.15	4140166.02	POS	8.47
196	594745.00	4140185.85	POS	7.93
197	594606.19	4140200.17	POS	7.64
198	594629.32	4140185.85	POS	7.74
199	594656.86	4140180.34	POS	7.97
200	594684.41	4140183.65	POS	8.14
201	594644.74	4140211.19	POS	6.96
202	594587.46	4140233.22	POS	7.22
203	594698.73	4140197.97	POS	7.68
204	594396.87	4140412.80		6.62
205	594403.48	4140391.87		6.60
206	594421.10	4140421.61		6.62
207	594431.02	4140400.68		6.59
208	594450.85	4140432.63		6.61
209	594461.87	4140407.29		6.62
210	594479.49	4140443.64		6.63
211	594497.12	4140450.25		6.62
212	594516.95	4140456.86		6.73
213	594523.56	4140429.32		7.01
214	594509.24	4140426.02		6.96
215	594489.41	4140420.51		6.69
216	594932.28	4140415.00	NON-RES	7.86
217	594955.42	4140428.22	NON-RES	7.87
218	595115.16	4140434.83		7.97
219	594599.58	4140677.20		7.25
220	594630.42	4140694.83		7.28

221	594664.57	4140682.71		7.28	
222	594432.40	4140659.94	SCHOOL	6.56	

Plant Boundary Receptors

Receptor Groups

Record Number	Group ID	Group Description
1	SCHOOL	School
2	RES	Residential
3	NON-RES	Non-Residential (Commercial - Retail - Office)
4	POS	Park - Open Space

Meteorology Pathway

Met Input Data

Surface Met Data

Filename: ..\MET\SANJOSE13_17.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: ..\MET\SANJOSE13_17.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 15.50 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface Upper Air		2013 2013			OAKLAND/WSO AP

Data Period

Data Period to Process

Start Date: 1/1/2013 Start Hour: 1 End Date: 12/31/2017 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

Results Summary

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PM10 - Concentration - Source Group: DPM_T4

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.01519	ug/m^3	594860.29	4140297.37	8.47	0.00	8.47	

PM10 - Concentration - Source Group: DPM_UM

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.05018	ug/m^3	594860.29	4140297.37	8.47	0.00	8.47	

PM10 - Concentration - Source Group: PM25_T4

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.07023	ug/m^3	594860.29	4140297.37	8.47	0.00	8.47	

PM10 - Concentration - Source Group: PM25_UM

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.11827	ug/m^3	594860.29	4140297.37	8.47	0.00	8.47	

Sensitive Receptor Summary

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PM10 - Concentration - Source Group: DPM_T4

Averaging Period	Rank	Peak	Units	Receptor ID	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.00905	ug/m^3		594784.27	4140173.98	8.37	0.00	8.37	
PERIOD		0.00993	ug/m^3	MEIR	594807.41	4140173.98	8.88	0.00	8.88	
PERIOD		0.00949	ug/m^3		594834.95	4140170.68	9.17	0.00	9.17	
PERIOD		0.00582	ug/m^3		594557.33	4140324.91	6.57	0.00	6.57	
PERIOD		0.00687	ug/m^3		594563.94	4140346.94	6.51	0.00	6.51	
PERIOD		0.00751	ug/m^3		594570.55	4140367.87	6.64	0.00	6.64	
PERIOD		0.00769	ug/m^3		594574.96	4140385.50	6.78	0.00	6.78	
PERIOD		0.00513	ug/m^3		594997.99	4140168.47	8.35	0.00	8.35	
PERIOD		0.00726	ug/m^3		594919.78	4140168.47	8.35	0.00	8.35	
PERIOD		0.00848	ug/m^3		594888.93	4140172.88	8.26	0.00	8.26	
PERIOD		0.00205	ug/m^3	MS	594484.62	4140490.16	6.76	0.00	6.76	
PERIOD		0.00354	ug/m^3		594569.45	4140487.95	7.49	0.00	7.49	
PERIOD		0.00380	ug/m^3	ES	594609.11	4140501.17	7.40	0.00	7.40	
PERIOD		0.00315	ug/m^3		594653.17	4140523.21	7.54	0.00	7.54	
PERIOD		0.00069	ug/m^3	HS	594432.40	4140659.94	6.56	0.00	6.56	

Sensitive Receptor Summary

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PM10 - Concentration - Source Group: DPM_UM

Averaging Period	Rank	Peak	Units	Receptor ID	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.02925	ug/m^3		594784.27	4140173.98	8.37	0.00	8.37	
PERIOD		0.03208	ug/m^3	MEIR	594807.41	4140173.98	8.88	0.00	8.88	
PERIOD		0.03063	ug/m^3		594834.95	4140170.68	9.17	0.00	9.17	
PERIOD		0.01899	ug/m^3		594557.33	4140324.91	6.57	0.00	6.57	
PERIOD		0.02257	ug/m^3		594563.94	4140346.94	6.51	0.00	6.51	
PERIOD		0.02475	ug/m^3		594570.55	4140367.87	6.64	0.00	6.64	
PERIOD		0.02537	ug/m^3		594574.96	4140385.50	6.78	0.00	6.78	
PERIOD		0.01630	ug/m^3		594997.99	4140168.47	8.35	0.00	8.35	
PERIOD		0.02327	ug/m^3		594919.78	4140168.47	8.35	0.00	8.35	
PERIOD		0.02722	ug/m^3		594888.93	4140172.88	8.26	0.00	8.26	
PERIOD		0.00673	ug/m^3	MS	594484.62	4140490.16	6.76	0.00	6.76	
PERIOD		0.01168	ug/m^3		594569.45	4140487.95	7.49	0.00	7.49	
PERIOD		0.01254	ug/m^3	ES	594609.11	4140501.17	7.40	0.00	7.40	
PERIOD		0.01041	ug/m^3		594653.17	4140523.21	7.54	0.00	7.54	
PERIOD		0.00226	ug/m^3	HS	594432.40	4140659.94	6.56	0.00	6.56	

Sensitive Receptor Summary

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PM10 - Concentration - Source Group: PM25_T4

Averaging Period	Rank	Peak	Units	Receptor ID	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.04832	ug/m^3		594784.27	4140173.98	8.37	0.00	8.37	
PERIOD		0.05317	ug/m^3	MEIR	594807.41	4140173.98	8.88	0.00	8.88	
PERIOD		0.05076	ug/m^3		594834.95	4140170.68	9.17	0.00	9.17	
PERIOD		0.02914	ug/m^3		594557.33	4140324.91	6.57	0.00	6.57	
PERIOD		0.03292	ug/m^3		594563.94	4140346.94	6.51	0.00	6.51	
PERIOD		0.03537	ug/m^3		594570.55	4140367.87	6.64	0.00	6.64	
PERIOD		0.03594	ug/m^3		594574.96	4140385.50	6.78	0.00	6.78	
PERIOD		0.03030	ug/m^3		594997.99	4140168.47	8.35	0.00	8.35	
PERIOD		0.04059	ug/m^3		594919.78	4140168.47	8.35	0.00	8.35	
PERIOD		0.04694	ug/m^3		594888.93	4140172.88	8.26	0.00	8.26	
PERIOD		0.00976	ug/m^3	MS	594484.62	4140490.16	6.76	0.00	6.76	
PERIOD		0.01649	ug/m^3		594569.45	4140487.95	7.49	0.00	7.49	
PERIOD		0.01760	ug/m^3	ES	594609.11	4140501.17	7.40	0.00	7.40	
PERIOD		0.01461	ug/m^3		594653.17	4140523.21	7.54	0.00	7.54	
PERIOD		0.00332	ug/m^3	HS	594432.40	4140659.94	6.56	0.00	6.56	

Sensitive Receptor Summary

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PM10 - Concentration - Source Group: PM25_UM

Averaging Period	Rank	Peak	Units	Receptor ID	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.07605	ug/m^3		594784.27	4140173.98	8.37	0.00	8.37	
PERIOD		0.08358	ug/m^3	MEIR	594807.41	4140173.98	8.88	0.00	8.88	
PERIOD		0.07980	ug/m^3		594834.95	4140170.68	9.17	0.00	9.17	
PERIOD		0.04723	ug/m^3		594557.33	4140324.91	6.57	0.00	6.57	
PERIOD		0.05448	ug/m^3		594563.94	4140346.94	6.51	0.00	6.51	
PERIOD		0.05904	ug/m^3		594570.55	4140367.87	6.64	0.00	6.64	
PERIOD		0.06021	ug/m^3		594574.96	4140385.50	6.78	0.00	6.78	
PERIOD		0.04562	ug/m^3		594997.99	4140168.47	8.35	0.00	8.35	
PERIOD		0.06257	ug/m^3		594919.78	4140168.47	8.35	0.00	8.35	
PERIOD		0.07267	ug/m^3		594888.93	4140172.88	8.26	0.00	8.26	
PERIOD		0.01619	ug/m^3	MS	594484.62	4140490.16	6.76	0.00	6.76	
PERIOD		0.02767	ug/m^3		594569.45	4140487.95	7.49	0.00	7.49	
PERIOD		0.02960	ug/m^3	ES	594609.11	4140501.17	7.40	0.00	7.40	
PERIOD		0.02458	ug/m^3		594653.17	4140523.21	7.54	0.00	7.54	
PERIOD		0.00548	ug/m^3	HS	594432.40	4140659.94	6.56	0.00	6.56	

HARP2 HEALTH RISK ASSESSMENT CALCULATIONS

The HRA was conducted utilizing the CARB's Hot Spots Analysis and Reporting Program Version 2 (HARP2) to automatically calculate risks for the projects using OEHHA promulgated cancer potency and reference exposure levels. (HARP2) is the recommended model for calculating and presenting HRA results because it follows the district's risk assessment guidance methodology and is consistent with the Air District's Regulation 2-5. Since AERMOD was run with project emission rates to directly calculate potential DPM and PM2.5 concentrations, the Health Risk Assessment Standalone Tool (RAST) version of HARP2 was used.

The HRA follows BAAQMD CEQA Guidelines based on OEHHA Guidance. This risk assessment intake methodology addresses children's greater sensitivity and health impacts from early exposure to carcinogenic compounds. The chemical intake or dose describing the frequency and duration of the exposure is estimated using receptor's breathing rates, exposure duration, and exposure frequency. The calculations include the use of age-specific weighting factors, breathing rates, fraction of time at home, and reduced exposure durations.

These factors are described below, followed by a summary of the HARP2 HRA inputs and cancer and noncancer risk results for selected for each receptor group (i.e., resident, off-site worker, and student).

Age Sensitivity Factors – Studies have shown that young animals are more sensitive than adult animals to exposure to many carcinogens (OEHHA, 2009). Therefore, OEHHA developed age sensitivity factors (ASFs) to account for the increased sensitivity to carcinogens during early-in-life exposures. Accordingly, the cancer risk methodology applies different ASFs by age groups. The ASFs utilized a 10-fold multiplier in sensitivity for the third trimester and infants less than age 2, a 3-fold increase in sensitivity for children ages 2 to 16 years old, and a sensitivity factor of 1 for ages 16 and older.

Daily breathing rates (age-specific daily air intake) – For residential receptors, the HRA utilizes the 95th percentile breathing rates for the most sensitive age groups (less than 2 years of age) and 80th percentile for all other age groups. This approach jointly developed by ARB and CAPCOA[1] and adopted by BAAQMD[2] is referred to as the "Risk Management Policy" and was developed to consider the new science in risk assessment while providing a reasonable estimate of potential cancer risk for risk management decisions. and used in this HRA. The HRA uses 95th percentile 8-hour breathing rates for moderate intensity activities for worker and student exposure.[3]

Time at home – The time at home applies only applies to residential receptors. Residents are assumed to be at home 350 days per year, which assumes individuals are away for approximately 2 weeks of

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1 California Air Resources Board (ARB) and California Air Pollution Control Officers Association (CAPCOA). 2015. Risk Management Guidance for Stationary Sources of Air Toxics. July 23. Website: https://ww2.arb.ca.gov/sites/default/files/classic/toxics/rma/rmgssat.pdf. Accessed April 8, 2024.

2 Bay Area Air Quality Management District (BAAQMD). 2022. California Environmental Quality Act – Air Quality Guidelines Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?rev=b8917a27345a4a629fc18fc8650951e4&sc_lang=en. Accessed March 7, 2024.

3 Office of Environmental Health Hazard Assessment (OEHHA). 2015. The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Website: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed March 29, 2024.

vacation. The fraction of time at home refers to the estimated amount of time residents stay at home during these 350 days. The HRA uses the OEHHA and BAAQMD recommended values of 73% time at home for 16-year-olds and above based on based on population and activity statistics. The HRA also assumes 100 percent time at home for receptors under age 16 to address exposures at local schools close to emitting sources. Even though infants and children may not be at their residence all the time, they are likely to remain in the neighborhood (at schools or neighbors) and would be exposed to similar levels of the pollutants.

Exposure Duration - OEHHA 2015 guidelines specify a 30-year residential exposure duration for estimating cancer risk at the maximum exposed individual resident (MEIR). This is based on studies showing that 30 years is a reasonable estimate of the 90th to 95th percentile of residency duration in the population. A 25-year standard exposure duration is the default to estimate cancer risk for off-site workers. However, risk assessors can use other exposure durations with proper justification and documentation. For example, short-term projects (e.g., construction projects) can now be evaluated for as short a duration as 6 months.

For a project with construction followed by operations, the HRA may be divided into 2 segments for the entire 30-year residential exposure duration.

Residential Cancer Risk

Cancer risk for individual resident receptors exposed to "Diesel Particulate Exhaust" (DPM) were calculated utilizing the "Risk Management Policy" option for inhalation, specifying that residents spend 100% time at home for ages less than 16 years old. Consistent with OEHHA guidance, the start of residential exposure was assumed to occur in the third trimester (-0.25 years) to accommodate the increased susceptibility of exposures in early life. Since the construction is anticipated to occur for 3 years, the residential exposure starts with the unborn child at the third trimester (when construction begins) and continues until the child is 2.75 years of age. Because there are no significant sources of TAC emissions during operations, the exposure assessment is limited to the duration of the proposed project construction or 3 years.

Worker Cancer Risk

Cancer risk and the chronic hazard index was calculated for the maximum impacted off-site worker based on the maximum DPM concentration at identified off-site receptors. 8-hour breathing rates for moderate intensity activities of 230 L/kg-8 hrs (applicable to 16–70-year adults) were used to calculate the daily dose via the inhalation route to the worker. The analysis assumes a start age of 16 years and an exposure duration equivalent to the construction duration of 3 years.

Since the construction emissions were modeled as a non-continuous source, the worker adjustment factor was used to adjust for the proper exposure concentration. When modeling a non-continuously emitting source (e.g., operating for eight hours per day and five days per week), the modeled long-term average concentrations are based on 24 hours a day and seven days per week for the period of the meteorological data set. Even though the emitting source is modeled using a non-continuous emissions schedule, the long-term concentration is still based on 24 hours a day and seven days per week. Thus, this concentration includes the zero hours when the source was not operating.

The worker adjustment factor (WAF) is used to determine the long-term concentration the worker is breathing during their work shift. Therefore, the long-term concentration is adjusted so it is based only on the hours when the worker is present. For this project, assuming the emitting source and worker's schedules are the same, the adjustment factor is 4.2 = (24 hours per day/8 hours per shift) x (7 days in a week/5 days in a work week).

HARP2 provides for the specification of the WAF for worker cancer risk assessments, and this was entered as 4.2 to make this adjustment.

Student Cancer Risk

Student cancer risk and chronic hazards were determined for Abram Agne Elementary School, Delores Huerto Middle School and Kathleen MacDonald High School (all located on adjacent campuses within 1,000 feet of the project site). Cancer risks utilized the 95th percentile 8-hour breathing rates for moderate activity specific to the age ranges specified for students. These breathing rates are documented in Table 5.8 of the OEHHA 2015 guideline document.

The elementary student risk calculations utilized a starting exposure age appropriate to elementary students (assumed 5 years) and a project specific exposure duration of 3 years. For students ages 2-9, HARP2 uses a breathing rate of 640 (L/kg per 8 Hrs).

The middle school and high school student risk calculations utilized a starting exposure age appropriate to these grade spans (11 and 14 years, respectively) and a project specific exposure duration of 3 years. For students ages 9 years and older, HARP2 uses the breathing rate of 520 (L/kg-hr) applicable to ages 2-16 consistent with BAAQMD recommended exposure values.

Similar to the worker scenario, student exposures occur only when the non-continuous construction sources are emitting and thus students similarly inhale air with concentrations that are higher than AERMOD predicted long-term average concentrations. Therefore, the Worker (or Student) Adjustment Factor of 4.2 is also applied to the AERMOD predicted annual concentrations for the evaluation of student cancer risk.

Noncancer Chronic Health Risks

Chronic RELs are used to assess not only residential health impacts, but also worker and student health impacts.

Potential chronic noncancer health impacts use the long-term annual average concentration regardless of the emitting facility's schedule. As per OEHHA guidance, no adjustment factors were used to adjust this concentration for workers or students.

HARP2 Inputs and Results

HARP2 Output files are included to document the HRA exposure parameters and risk results.

HARP Model runs for Cancer and Non-Cancer Chronic Health Effects are included for:

- MEIR
- MEIW
- Abram Agnes Elementary School
- Delores Huerto Middle School
- Kathleen MacDonald High School
- All Residential Receptors
- All Non-Residential Receptors

HARP2 - HRACalc (dated 22118) 7/11/2024 1:12:59 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: Cancer
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 2.75

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0.75
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: RMP

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: ON

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk saved to: F:\Jobs\46450007\ConHRA\HARP2\ResCancerCancerRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 7/11/2024 1:12:59 PM -
Cancer Risk - Input File: F:\Jobs\46450007\ConHRA\HARP2\ResCancerHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	Risk	Scenario	Inhalation Risk
MEIR	UNMIT	DieselExhPM	0.032	1.1632e-05	2.75YrCancerRMP_Inh_FAH16to70	1.1632e-05
MEIR	MIT	DieselExhPM	0.00991	3.6021e-06	2.75YrCancerRMP_Inh_FAH16to70	3.6021e-06

HARP2 - HRACalc (dated 22118) 7/11/2024 1:13:25 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: RMP

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk saved to: F:\Jobs\46450007\ConHRA\HARP2\ResChronicNCChronicRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 7/11/2024 1:13:25 PM -
Chronic Risk - Input File: F:\Jobs\46450007\ConHRA\HARP2\ResChronicHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	B/T	ENDO	BLOOD	ODOR	GEN
MEIR	UNMIT	DieselExhPM	0.032	0.0	0.0	0.0	0.0	0.0	0.0	0.0064	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEIR	MIT	DieselExhPM	0.00991	0.0	0.0	0.0	0.0	0.0	0.0	0.001982	0.0	0.0	0.0	0.0	0.0	0.0	0.0

HARP2 - HRACalc (dated 22118) 7/12/2024 5:25:02 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: Cancer
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: 16
Total Exposure Duration: 3

Exposure Duration Bin Distribution
3rd Trimester Bin: 0
0<2 Years Bin: 0
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 3
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 4.2
Exposure frequency: 250

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk saved to: F:\Jobs\46450007\ConHRA\HARP2\WorkerCancerCancerRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 7/12/2024 5:25:02 AM -
Cancer Risk - Input File: F:\Jobs\46450007\ConHRA\HARP2\WorkerCancerHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	Risk	Scenario	Inhalation Risk
MEIW	UNMIT	DieselExhPM	0.05018	1.6333e-06	3YrCancerHighEnd_Inh	1.6333e-06
MEIW	MIT	DieselExhPM	0.01519	4.944e-07	3YrCancerHighEnd_Inh	4.944e-07

HARP2 - HRACalc (dated 22118) 7/12/2024 5:25:38 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCChronic
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 4.2
Exposure frequency: 250

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk saved to: F:\Jobs\46450007\ConHRA\HARP2\WorkerChronicNCChronicRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 7/12/2024 5:25:38 AM -
Chronic Risk - Input File: F:\Jobs\46450007\ConHRA\HARP2\WorkerChronicHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	B/T	ENDO	BLOOD	ODOR	GEN
MEIW	UNMIT	DieselExhPM	0.05018	0.0	0.0	0.0	0.0	0.0	0.0	0.010036	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEIW	MIT	DieselExhPM	0.01519	0.0	0.0	0.0	0.0	0.0	0.0	0.003038	0.0	0.0	0.0	0.0	0.0	0.0	0.0

HARP2 - HRACalc (dated 22118) 7/12/2024 5:30:30 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: Cancer
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: 5
Total Exposure Duration: 3

Exposure Duration Bin Distribution
3rd Trimester Bin: 0
0<2 Years Bin: 0
2<9 Years Bin: 3
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 4.2
Exposure frequency: 250

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.05
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****

TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk saved to: F:\Jobs\46450007\ConHRA\HARP2\ESchoolCancerCancerRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 7/12/2024 5:30:30 AM -
Cancer Risk - Input File: F:\Jobs\46450007\ConHRA\HARP2\ESchoolCancerHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	Risk	Scenario	Inhalation Risk
ESCHOOL	UNMIT	DieselExhPM	0.01254	3.2652e-06	3YrCancerDerived_InhSoilDerm	3.2652e-06
ESCHOOL	MIT	DieselExhPM	0.0038	9.8946e-07	3YrCancerDerived_InhSoilDerm	9.8946e-07

HARP2 - HRACalc (dated 22118) 7/12/2024 5:30:56 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 4.2
Exposure frequency: 250

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk saved to: F:\Jobs\46450007\ConHRA\HARP2\ESchoolChronicNCChronicRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 7/12/2024 5:30:56 AM -
Chronic Risk - Input File: F:\Jobs\46450007\ConHRA\HARP2\ESchoolChronicHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	B/T	ENDO	BLOOD	ODOR	GEN
ESCHOOL	UNMIT	DieselExhPM	0.01254	0.0	0.0	0.0	0.0	0.0	0.0	0.002508	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESCHOOL	MIT	DieselExhPM	0.0038	0.0	0.0	0.0	0.0	0.0	0.0	0.00076	0.0	0.0	0.0	0.0	0.0	0.0	0.0

HARP2 - HRACalc (dated 22118) 7/12/2024 5:33:15 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: Cancer
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: 11
Total Exposure Duration: 3

Exposure Duration Bin Distribution
3rd Trimester Bin: 0
0<2 Years Bin: 0
2<9 Years Bin: 0
2<16 Years Bin: 3
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 4.2
Exposure frequency: 250

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk saved to: F:\Jobs\46450007\ConHRA\HARP2\MSchoolCancerCancerRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 7/12/2024 5:33:15 AM -
Cancer Risk - Input File: F:\Jobs\46450007\ConHRA\HARP2\MSchoolCancerHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	Risk	Scenario	Inhalation Risk
MSCHOOL	UNMIT	DieselExhPM	0.00673	1.4238e-06	3YrCancerDerived_Inh	1.4238e-06
MSCHOOL	MIT	DieselExhPM	0.00205	4.337e-07	3YrCancerDerived_Inh	4.337e-07

HARP2 - HRACalc (dated 22118) 7/12/2024 5:33:31 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 4.2
Exposure frequency: 250

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk saved to: F:\Jobs\46450007\ConHRA\HARP2\MSchoolChronicNCChronicRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 7/12/2024 5:33:31 AM -
Chronic Risk - Input File: F:\Jobs\46450007\ConHRA\HARP2\MSchoolChronicHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	B/T	ENDO	BLOOD	ODOR	GEN
MSCHOOL	UNMIT	DieselExhPM	0.00673	0.0	0.0	0.0	0.0	0.0	0.0	0.001346	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MSCHOOL	MIT	DieselExhPM	0.00205	0.0	0.0	0.0	0.0	0.0	0.0	0.00041	0.0	0.0	0.0	0.0	0.0	0.0	0.0

HARP2 - HRACalc (dated 22118) 7/12/2024 5:37:14 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: Cancer
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: 14
Total Exposure Duration: 3

Exposure Duration Bin Distribution
3rd Trimester Bin: 0
0<2 Years Bin: 0
2<9 Years Bin: 0
2<16 Years Bin: 2
16<30 Years Bin: 1
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 4.2
Exposure frequency: 250

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk saved to: F:\Jobs\46450007\ConHRA\HARP2\HSchoolCancerCancerRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 7/12/2024 5:37:14 AM -
Cancer Risk - Input File: F:\Jobs\46450007\ConHRA\HARP2\HSchoolCancerHRAInput.hra

UTME	UTMN	Pollutant	Conc (ug/m3)	Risk	Scenario	Inhalation Risk
HSCHOOL	UNMIT	DieselExhPM	0.00226	3.4327e-07	3YrCancerDerived_Inh	3.4327e-07
HSCHOOL	MIT	DieselExhPM	0.00069	1.048e-07	3YrCancerDerived_Inh	1.048e-07

HARP2 - HRACalc (dated 22118) 7/12/2024 5:37:34 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors
NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.
Worker adjustments factors enabled: YES
GLC adjustment factor: 4.2
Exposure frequency: 250

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk saved to: F:\Jobs\46450007\ConHRA\HARP2\HSchoolChronicNCChronicRisk.csv
HRA ran successfully

*HARP - HRACalc v22118 7/12/2024 5:37:34 AM -
Chronic Risk - Input File: F:\Jobs\46450007\ConHRA\HARP2\HSchoolChronicHRAInput.hra

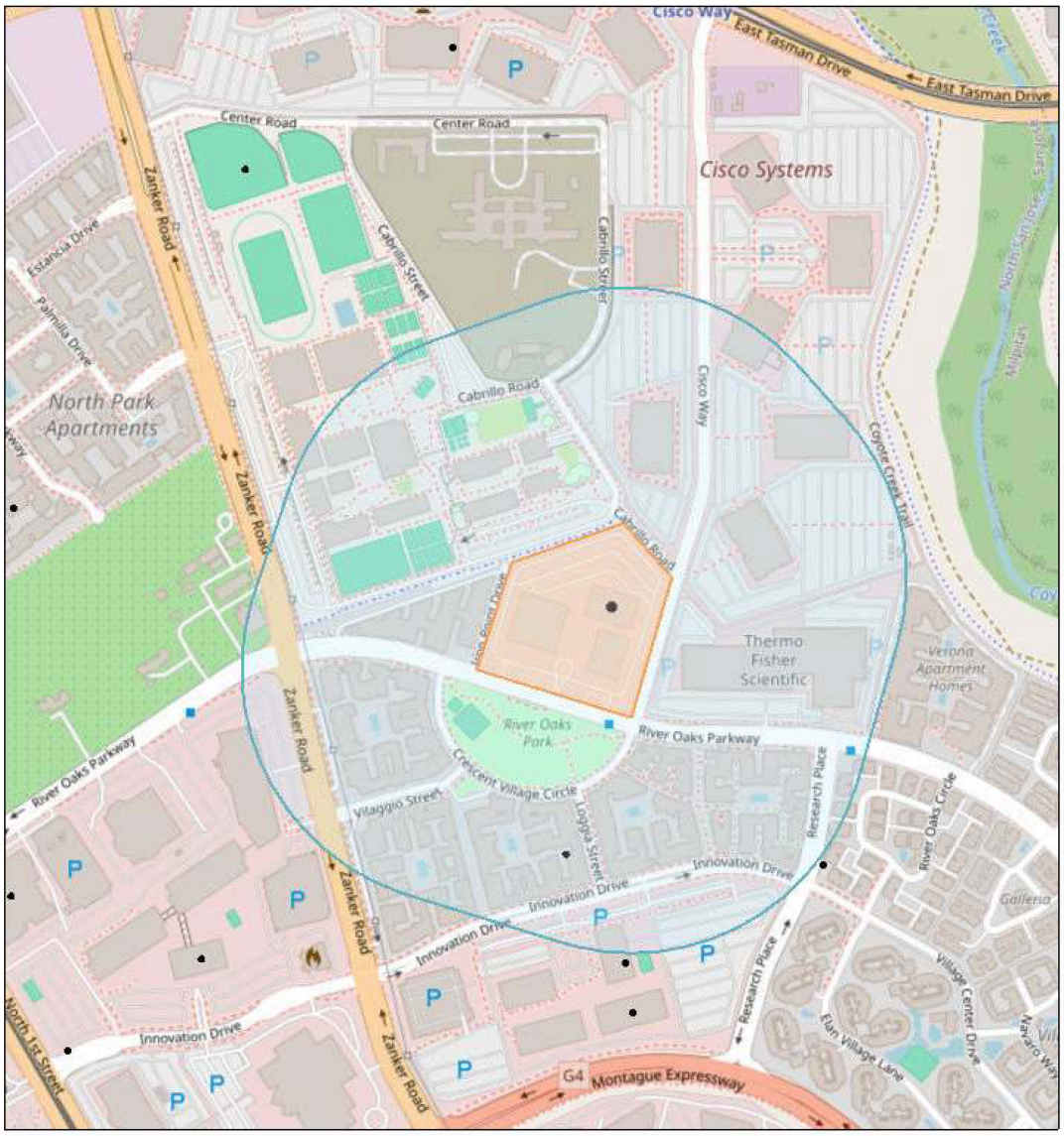
UTME	UTMN	Pollutant	Conc (ug/m3)	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	B/T	ENDO	BLOOD	ODOR	GEN
HSCHOOL	UNMIT	DieselExhPM	0.00226	0.0	0.0	0.0	0.0	0.0	0.0	0.000452	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HSCHOOL	MIT	DieselExhPM	0.00069	0.0	0.0	0.0	0.0	0.0	0.0	0.000138	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Screening Report - River Oaks Parkway

Area of Interest (AOI) Information

Area : 6,180,455.85 ft²

Jun 21 2024 8:46:57 Pacific Daylight Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	1	N/A	N/A

Permitted Stationary Sources

#	Facility_I	Facility_N	Address	City	State
1	200384	CMK LLC	250 Innovation Dr	San Jose	CA

#	Zip	County	Latitude	Longitude	Details
1	95134	Santa Clara	37.402295	-121.930159	Generator

#	NAICS	NAICS_Sect	NAICS_Subs	NAICS_Indu	Cancer_Ris
1	561990	Administrative and Support and Waste Management and Remediation Services	Administrative and Support Services	All Other Support Services	3.931000

#	Chronic_Ha	PM25	Count
1	0.001000	0.005000	1

NOTE: A larger buffer than 1000 feet may be warranted depending on proximity to significant sources.

Receptor	UTMX	UTMY	Road Cancer Risk	Road Chronic HI	Road PM2.5	Rail Cancer Risk	Rail Chronic HI	Rail PM2.5
MEIR	594807.4	4140174	9.5679	0.038297	0.293582	0	0	0
MEIW	594860.3	4140297	6.6048	0.028708	0.235482	0	0	0
Elementary School	594609.2	4140502	6.5854	0.026105	0.218775	0	0	0
Middle School	594484.8	4140490	7.6245	0.032501	0.278717	0	0	0
High School	594432.4	4140660	6.7446	0.024215	0.190646	0	0	0

Data Provided By: BAAQMD as raster file (.tif) datasets
Roadway Screening Tool - Cancer Risk Last Updated December 8 2022
Roadway Screening Tool - Chronic Hazard Last Updated December 8 2022
Roadway Screening Tool - PM2.5 Last Updated December 8 2022
Rail Screening Tool - Cancer Risk Last Updated May 9 2024
Rail Screening Tool - Chronic Hazard Last Updated May 9 2024
Rail Screening Tool - PM2.5 Last Updated May 9 2024

UTMX	UTMY	Road Canc	Road Chro	Road PM2.	Rail Cance	Rail Chroni	Rail PM2.5
594635.9	4140403	6.958973	0.026469	0.211763	0	0	0
594660.8	4140415	7.44748	0.03231	0.282166	0	0	0
594682	4140424	7.44748	0.03231	0.282166	0	0	0
594700.7	4140433	7.455652	0.03268	0.28715	0	0	0
594724.4	4140438	7.455652	0.03268	0.28715	0	0	0
594745.6	4140441	7.872591	0.036082	0.32377	0	0	0
594759.3	4140433	7.872591	0.036082	0.32377	0	0	0
594770.6	4140416	7.872591	0.036082	0.32377	0	0	0
594788	4140401	7.078734	0.028353	0.238	0	0	0
594795.2	4140387	9.041285	0.043192	0.389631	0	0	0
594790.5	4140370	7.078734	0.028353	0.238	0	0	0
594780.5	4140347	7.030026	0.026784	0.216134	0	0	0
594773.1	4140313	7.030026	0.026784	0.216134	0	0	0
594764.3	4140288	6.729321	0.028153	0.225211	0	0	0
594755.6	4140264	6.729321	0.028153	0.225211	0	0	0
594750.6	4140247	12.33732	0.05168	0.391703	0	0	0
594720.7	4140257	18.30536	0.076801	0.559481	0	0	0
594688.2	4140269	9.362775	0.043277	0.356874	0	0	0
594660.8	4140277	9.362775	0.043277	0.356874	0	0	0
594638.3	4140283	12.9653	0.060142	0.468747	0	0	0
594608.4	4140290	12.9653	0.060142	0.468747	0	0	0
594592.2	4140300	19.56595	0.094371	0.715016	0	0	0
594596.6	4140324	8.941498	0.039516	0.339003	0	0	0
594603.9	4140346	8.941498	0.039516	0.339003	0	0	0
594612.7	4140367	6.958973	0.026469	0.211763	0	0	0
594620.3	4140390	6.958973	0.026469	0.211763	0	0	0

Data Provided By: BAAQMD as raster file (.tif) datasets
Roadway Screening Tool - Cancer Risk Last Updated December 8 2022
Roadway Screening Tool - Chronic Hazard Last Updated December 8 2022
Roadway Screening Tool - PM2.5 Last Updated December 8 2022
Rail Screening Tool - Cancer Risk Last Updated May 9 2024
Rail Screening Tool - Chronic Hazard Last Updated May 9 2024
Rail Screening Tool - PM2.5 Last Updated May 9 2024

211-281 River Oaks Parkway Residential Project
Energy Calculations - Building Electricity Consumption

Operational Year	**2026**
County	**Santa Clara**

Building Energy Fuel	**Electricity (kWh/yr)**	**Natural Gas (MMBTU/yr)**
Condo/Townhouse	764,549	-
Apartments Mid Rise	2,976,698	-
Apartments Mid Rise	778,068	-
User Defined Recreational	0	-
Other Asphalt Surfaces	0	-
Total Building Energy	4,519,315	-

211-281 River Oaks Parkway Residential Project
Energy Calculations
Onroad Mobile Sources

Operational Year	**2026**	
County	**Santa Clara**	
Gasoline	**274,428**	**gallons**
Diesel	**26,330**	**gallons**
Natural Gas	**1,231**	**gallons**
Electricity	**197,497**	**kw-hr**

Ops_EnergyConsumption

211-281 River Oaks Parkway Residential Project
Energy Calculations - Operations Fuel Use from Mobile Sources

Santa Clara	Annual VMT	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
2026	1,557,174	0.75%	52.54%	3.92%	23.23%	2.34%	0.58%	2.21%	13.01%	0.25%	0.95%	0.11%	0.07%	0.04%

Total Operational FUEL Consumption for ALL LAND USES (gallons for fuels, Kw-hr for electricity)

Fuel	All Vehicles	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	52,989	1	23073	2307	13843	2321	337	810	9212	612	344	102	22	6
Diesel	5,084	1755	39	1	37	786	440		112	129	1492	141	98	52
Natural Gas	238	200									18	1	6	13
Electricity	38,134	243	33606	148	1817	296	74		1656		219	6	10	60

Fuel Consumption by Vehicle Category

Fuel Consumption for CVMT	Units	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	gal	1	22682	2305	13789	2321	337	810	9178	612	344	102	22	6
Diesel	gal	1755	39	1	37	786	440		112	129	1492	141	98	52
Natural Gas	gal	200									18	1	6	13
Plug-in Hybrid (Gasoline)	gal		391	2	55				34					
Fuel Consumption for EVMT	**Units**	**HHDT**	**LDA**	**LDT1**	**LDT2**	**LHD1**	**LHD2**	**MCY**	**MDV**	**MH**	**MHDT**	**OBUS**	**SBUS**	**UBUS**
Electricity	kwhr	243	28809	115	1128	296	74		1229		219	6	10	60
Plug-in Hybrid (Electricity)	kwhr		4797	33	689				427					

Fuel Consumption Factors	Units	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	mi/gal	4.2	31.5	26.3	25.6	10.1	8.9	42.4	21.1	4.4	4.9	4.9	10.0	9.3
Diesel	mi/gal	6.0	44.7	24.5	34.4	16.2	13.5		25.8	9.4	8.5	8.0	8.2	9.1
Natural Gas	mi/gal	5.1									7.2	7.9	5.6	5.9
Plug-in Hybrid	mi/gal		29.5	29.3	29.2				28.8					

Fuel Consumption Factors	Units	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Electricity	kwhr/mi	1.84	0.37	0.37	0.35	0.65	0.65		0.36		1.10	1.11	1.05	1.74
Plug-in Hybrid	kwhr/mi	1.84	0.37	0.37	0.35	0.65	0.65		0.36		1.10	1.11	1.05	1.74

Total VMT Fraction by Fuel and Vehicle Category

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	0.0%	87.4%	99.2%	97.8%	64.0%	33.1%	100.0%	95.8%	69.1%	11.4%	30.3%	20.6%	8.7%
Diesel	90.1%	0.2%	0.0%	0.4%	34.8%	65.7%		1.4%	30.9%	86.4%	68.7%	75.6%	74.2%
Natural Gas	8.8%									0.9%	0.7%	2.9%	11.8%
Electricity	1.1%	9.4%	0.5%	0.9%	1.2%	1.3%		1.7%		1.4%	0.3%	0.9%	5.4%
Plug-in Hybrid		3.0%	0.3%	1.0%				1.1%					
totals	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

CVMT by EMFAC Vehicle Type

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Diesel	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%
Natural Gas	100%									100%	100%	100%	100%
Plug-in Hybrid		47%	43%	45%				45%					

EVMT by EMFAC Vehicle Type

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Electricity	100%	100%	100%	100%	100%	100%		100%		100%	100%	100%	100%
Plug-in Hybrid		53%	57%	55%				55%					

211-281 River Oaks Parkway Residential Project
Energy Calculations - Operations Fuel Use from Mobile Sources

Santa Clara	Annual VMT	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
2026	4,706,380	0.75%	52.54%	3.92%	23.23%	2.34%	0.58%	2.21%	13.01%	0.25%	0.95%	0.11%	0.07%	0.04%

Total Operational FUEL Consumption for ALL LAND USES (gallons for fuels, Kw-hr for electricity)

Fuel	All Vehicles	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	160,152	2	69734	6973	41840	7016	1017	2450	27842	1848	1038	307	66	18
Diesel	15,366	5305	119	3	113	2375	1331		340	389	4511	428	296	157
Natural Gas	718	605									54	4	17	38
Electricity	115,257	735	101571	447	5492	893	224		5004		662	18	29	180

Fuel Consumption by Vehicle Category

Fuel Consumption for CVMT	Units	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	gal	2	68554	6966	41675	7016	1017	2450	27739	1848	1038	307	66	18
Diesel	gal	5305	119	3	113	2375	1331		340	389	4511	428	296	157
Natural Gas	gal	605									54	4	17	38
Electricity	gal													
Plug-in Hybrid (Gasoline)	gal		1181	7	165				103					
Fuel Consumption for EVMT	**Units**	**HHDT**	**LDA**	**LDT1**	**LDT2**	**LHD1**	**LHD2**	**MCY**	**MDV**	**MH**	**MHDT**	**OBUS**	**SBUS**	**UBUS**
Gasoline	kwhr													
Diesel	kwhr													
Natural Gas	kwhr													
Electricity	kwhr	735	87072	348	3410	893	224		3713		662	18	29	180
Plug-in Hybrid (Electricity)	kwhr		14499	99	2082				1291					

Fuel Consumption Factors	Units	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	mi/gal	4.2	31.5	26.3	25.6	10.1	8.9	42.4	21.1	4.4	4.9	4.9	10.0	9.3
Diesel	mi/gal	6.0	44.7	24.5	34.4	16.2	13.5		25.8	9.4	8.5	8.0	8.2	9.1
Natural Gas	mi/gal	5.1									7.2	7.9	5.6	5.9
Electricity	mi/gal													
Plug-in Hybrid	mi/gal		29.5	29.3	29.2				28.8					

Fuel Consumption Factors	Units	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	kwhr/mi													
Diesel	kwhr/mi													
Natural Gas	kwhr/mi													
Electricity	kwhr/mi	1.84	0.37	0.37	0.35	0.65	0.65		0.36		1.10	1.11	1.05	1.74
Plug-in Hybrid	kwhr/mi	1.84	0.37	0.37	0.35	0.65	0.65		0.36		1.10	1.11	1.05	1.74

Total VMT Fraction by Fuel and Vehicle Category

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	0.0%	87.4%	99.2%	97.8%	64.0%	33.1%	100.0%	95.8%	69.1%	11.4%	30.3%	20.6%	8.7%
Diesel	90.1%	0.2%	0.0%	0.4%	34.8%	65.7%		1.4%	30.9%	86.4%	68.7%	75.6%	74.2%
Natural Gas	8.8%									0.9%	0.7%	2.9%	11.8%
Electricity	1.1%	9.4%	0.5%	0.9%	1.2%	1.3%		1.7%		1.4%	0.3%	0.9%	5.4%
Plug-in Hybrid		3.0%	0.3%	1.0%				1.1%					
totals	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

CVMT by EMFAC Vehicle Type

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Diesel	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%
Natural Gas	100%									100%	100%	100%	100%
Plug-in Hybrid		47%	43%	45%				45%					

EVMT by EMFAC Vehicle Type

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Electricity	100%	100%	100%	100%	100%	100%		100%		100%	100%	100%	100%

211-281 River Oaks Parkway Residential Project
Energy Calculations - Operations Fuel Use from Mobile Sources

Santa Clara	Annual VMT	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
2026	1,801,035	0.75%	52.54%	3.92%	23.23%	2.34%	0.58%	2.21%	13.01%	0.25%	0.95%	0.11%	0.07%	0.04%

Total Operational FUEL Consumption for ALL LAND USES (gallons for fuels, Kw-hr for electricity)

Fuel	All Vehicles	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	61,287	1	26686	2669	16011	2685	389	937	10655	707	397	118	25	7
Diesel	5,880	2030	46	1	43	909	509		130	149	1726	164	113	60
Natural Gas	275	232									21	2	6	15
Electricity	44,106	281	38869	171	2102	342	86		1915		253	7	11	69

Fuel Consumption by Vehicle Category

Fuel Consumption for CVMT	Units	HHDT	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	gal	1	26234	2666	15948	2685	389	937	10615	707	397	118	25	7
Diesel	gal	2030	46	1	43	909	509		130	149	1726	164	113	60
Natural Gas	gal	232									21	2	6	15
Electricity	gal													
Plug-in Hybrid (Gasoline)	gal		452	3	63				39					
Fuel Consumption for EVMT	**Units**	**HHDT**	**LDA**	**LDT1**	**LDT2**	**LHD1**	**LHD2**	**MCY**	**MDV**	**MH**	**MHDT**	**OBUS**	**SBUS**	**UBUS**
Gasoline	kwhr													
Diesel	kwhr													
Natural Gas	kwhr													
Electricity	kwhr	281	33321	133	1305	342	86		1421		253	7	11	69
Plug-in Hybrid (Electricity)	kwhr		5548	38	797				494					

Fuel Consumption Factors	Units	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	mi/gal	4.2	31.5	26.3	25.6	10.1	8.9	42.4	21.1	4.4	4.9	4.9	10.0	9.3
Diesel	mi/gal	6.0	44.7	24.5	34.4	16.2	13.5		25.8	9.4	8.5	8.0	8.2	9.1
Natural Gas	mi/gal	5.1									7.2	7.9	5.6	5.9
Electricity	mi/gal													
Plug-in Hybrid	mi/gal		29.5	29.3	29.2				28.8					

Fuel Consumption Factors	Units	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	kwhr/mi													
Diesel	kwhr/mi													
Natural Gas	kwhr/mi													
Electricity	kwhr/mi	1.84	0.37	0.37	0.35	0.65	0.65		0.36		1.10	1.11	1.05	1.74
Plug-in Hybrid	kwhr/mi	1.84	0.37	0.37	0.35	0.65	0.65		0.36		1.10	1.11	1.05	1.74

Total VMT Fraction by Fuel and Vehicle Category

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	0.0%	87.4%	99.2%	97.8%	64.0%	33.1%	100.0%	95.8%	69.1%	11.4%	30.3%	20.6%	8.7%
Diesel	90.1%	0.2%	0.0%	0.4%	34.8%	65.7%		1.4%	30.9%	86.4%	68.7%	75.6%	74.2%
Natural Gas	8.8%									0.9%	0.7%	2.9%	11.8%
Electricity	1.1%	9.4%	0.5%	0.9%	1.2%	1.3%		1.7%		1.4%	0.3%	0.9%	5.4%
Plug-in Hybrid		3.0%	0.3%	1.0%				1.1%					
totals	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

CVMT by EMFAC Vehicle Type

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Gasoline	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Diesel	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%
Natural Gas	100%									100%	100%	100%	100%
Plug-in Hybrid		47%	43%	45%				45%					

EVMT by EMFAC Vehicle Type

Fuel	HHDT	LDA	LDT1	LDT2	LHDT1	LHDT2	MCY	MDV	MH	MHDT	OBUS	SBUS	UBUS
Electricity	100%	100%	100%	100%	100%	100%		100%		100%	100%	100%	100%
Plug-in Hybrid		53%	57%	55%				55%					

211-281 River Oaks Parkway Residential Project

Summary of Fossil Fuel Energy Use During Construction

Construction equipment fuel	85,439	gallons (diesel)
Construction vehicle fuel	237,149	gallons (gasoline, diesel)
Total construction fuel	**322,588**	**gallons (gasoline, diesel)**

211-281 River Oaks Parkway Residential Project
Construction Equipment Fuel Consumption

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor	PhaseDays	FuelConsumption (gallons)
Demolition	Rubber Tired Dozers	Diesel	Average	2	8	367	0.4	20	2536.7
Demolition	Excavators	Diesel	Average	3	8	36	0.38	20	354.6
Demolition	Concrete/Industrial Saws	Diesel	Average	1	8	33	0.73	20	208.1
Site Preparation	Rubber Tired Dozers	Diesel	Average	3	8	367	0.4	10	1902.5
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4	8	84	0.37	10	537.1
Grading	Graders	Diesel	Average	1	8	148	0.41	18	471.8
Grading	Excavators	Diesel	Average	2	8	36	0.38	18	212.8
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2	8	84	0.37	18	483.4
Grading	Scrapers	Diesel	Average	2	8	423	0.48	18	3157.7
Grading	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4	18	1141.5
Building Construction	Forklifts	Diesel	Average	3	8	82	0.2	650	13815.4
Building Construction	Generator Sets	Diesel	Average	1	8	14	0.74	650	2909.1
Building Construction	Cranes	Diesel	Average	1	7	367	0.29	650	26149.9
Building Construction	Welders	Diesel	Average	1	8	46	0.45	650	5812.6
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3	7	84	0.37	650	22909.1
Paving	Pavers	Diesel	Average	2	8	81	0.42	38	1116.9
Paving	Paving Equipment	Diesel	Average	2	8	89	0.36	38	1051.9
Paving	Rollers	Diesel	Average	2	8	36	0.38	38	449.1
Architectural Coating	Air Compressors	Diesel	Average	1	6	37	0.48	38	218.7
									85438.8

ARB 2021, Low Emission Diesel (LED) Study: Biodiesel and Renewable Diesel Emissions in Legacy and New Technology Diesel Engines, November 2021
Average Value for CARB Reference Fuel - Nonroad Transient Cycle - BSFC = 0.054 gal/bhp-hr

Off-Road Construction Equipment
Fuel Consumption

211-281 River Oaks Parkway Residential Project
Energy Calculations - Construction Vehicle Fuel
Source: AQ/GHG Appendix, CalEEMod Output, EMFAC2021 v1.0.2 `

Vehicle Type	Total VMT (mi)	mi/gal	gal	Vehicle Cat
Worker	4,099,140	26.90	152,371	LDA,LDT1,LDT2
Vendor	435,645	6.76	64,401	HHDT,MHDT
Hauling	120,000	5.89	20,377	HHDT
Onsite truck	0	5.89	0	HHDT
	4,654,785		**237,149**	**gallons**
	Combined VMT			

Note: Fuel Economy Factors are from EMFAC2021 for: Santa Clara

DEPARTMENT OF PLANNING, BUILDING AND CODE ENFORCEMENT

Purpose of the Compliance Checklist

In 2020, the City adopted a Greenhouse Gas Reduction Strategy (GHGRS) that outlines the actions the City will undertake to achieve its proportional share of State greenhouse gas (GHG) emission reductions for the interim target year 2030. The purpose of the Greenhouse Gas Reduction Strategy Compliance Checklist (Checklist) is to:

- Implement GHG reduction strategies from the 2030 GHGRS to new development projects.
- Provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA).

The 2030 GHGRS presents the City's comprehensive path to reduce GHG emissions to achieve the 2030 reduction target, based on SB 32, BAAQMD, and OPR. Additionally, the 2030 GHGRS leverages other important City plans and policies; including the General Plan, Climate Smart San José, and the City Municipal Code in identifying reductions strategies that achieve the City's target. CEQA Guidelines Section 15183.5 allows for public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of greenhouse gases. Accordingly, the City of San José's 2030 GHGRS represents San José's qualified climate action plan in compliance with CEQA.

As described in the 2030 GHGRS, these GHG reductions will occur through a combination of City initiatives in various plans and policies and will provide reductions from both existing and new developments. This Compliance Checklist specifically applies to proposed discretionary projects that require environmental review pursuant to CEQA. Therefore, the Checklist is a critical implementation tool in the City's overall strategy to reduce GHG emissions. Implementation of applicable reduction actions in new development projects will help the City achieve incremental reductions toward its target. Per the 2030 GHGRS, the City will monitor strategy implementation and make updates, as necessary, to maintain an appropriate trajectory to the 2030 GHG target.

Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the GHGRS.

Instructions for Compliance Checklist

Applicants shall complete the following sections to demonstrate conformance with the City of San José 2030 Greenhouse Gas Reduction Strategy for the proposed project. All projects must complete Section A. General Plan Policy Conformance and Section B. Greenhouse Gas Reduction Strategies. Projects that propose alternative GHG mitigation measures must also complete Section C. Alternative Project Measures and Additional GHG Reductions.

A. General Plan Policy Compliance

Projects need to demonstrate consistency with the Envision San José 2040 General Plan's relevant policies for Land Use & Design, Transportation, Green Building, and Water Conservation, enumerated in Table A. All applicants shall complete the following steps.

1. Complete Table A, Item #1 to demonstrate the project's consistency with the General Plan Land Use and Circulation Diagram.

2. Complete Table A, Items #2 through #4 to demonstrate the project's consistency with General Plan policies[1] related to green building; pedestrian, bicycle & transit site design; and water conservation and urban forestry, as applicable. For each policy listed, mark the relevant yes/no check boxes to indicate project consistency, and provide a qualitative description of how the policy is implemented in the proposed project or why the policy is not applicable to the proposed project. Qualitative descriptions can be included in Table A or provided as separate attachments. This explanation will provide the basis for analysis in the CEQA document.

B. Greenhouse Gas Reduction Strategies

Table B identifies the GHGRS strategies and recommended consistency options. Projects need to demonstrate consistency with the GHGRS reduction strategies listed in Table B or document why the strategies are not applicable or are infeasible. The corresponding GHGRS strategies are indicated in the table to provide additional context, with the full text of the strategies preceding Table B.

Residential projects must complete Table B, Part 1 and 2; Non-residential projects must complete Table B, Part 2 only. All applicants shall complete the following steps for Table B.

1. Review the project consistency options described in the column titled 'GHGRS Strategy and Consistency Options'.

[1] The lists in items # 2-4 do not represent all General Plan policies but allow projects to demonstrate consistency and achievement of policies that are related to quantified reduction estimates in the 2030 GHGRS.

2. Use the check boxes in the column titled “Project Conformance” to indicate if the strategy is ‘Proposed’, ‘Not Applicable’, ‘Not Feasible’, or if there is an ‘Alternative Measure Proposed’.

3. Provide a qualitative analysis of the proposed project’s compliance with the GHGRS strategies in the column titled “Description of Project Measure”. This will be the basis for CEQA analysis to demonstrate compliance with the 2030 GHGRS and by extension, with SB 32. The qualitative analysis should provide:

    a. A description of which consistency options are included as part of the proposed project, or

    b. A description of why the strategy is not applicable to the proposed project, or

    c. A description of why the consistency options are infeasible. If applicants select ‘Not Feasible’ or ‘Alternative Measure Proposed’, they must complete Table C to document what alternative project measures will be implemented to achieve a similar level of greenhouse gas reduction and how those reduction estimates were calculated.

C. Alternative Project Measures and Additional GHG Reductions

Projects that propose alternative GHG mitigation measures to those identified in Table B or propose to include additional GHG mitigation measures beyond those described in Tables A and B, shall provide a summary explanation of the proposed measures and demonstrate efficiency or greenhouse gas reductions achievable though the proposed measures. Documentation for these alternative or additional project measures shall be documented in Table C. Any applicants who select ‘Not Feasible’ or ‘Alternative Measure Proposed’ in Table B must complete the following steps for Table C.

1. In the column titled “Description of Proposed Measure” provide a qualitative description of what measure will be implemented, why it is proposed, and how it will reduce GHG emissions.

2. In the column titled “Description of GHG Reduction Estimate” demonstrate how the alternative project measure would achieve the same or greater level of greenhouse gas reductions as the GHGRS strategy it replaces. Documentation or calculation files can be attached separately.

3. In the column titled “Proposed Measure Implementation” identify how the measure will be implemented: incorporated as part of the project design or as an additional measure that is not part of the project (e.g., purchase of carbon offsets).

Compliance Checklist

Evaluation of Project Conformance with the 2030 Greenhouse Gas Reduction Strategy

Table A: General Plan Consistency

Development Type: ☐ Commercial ☐ Residential ☐ Office ☐ Other: Specify

1) Consistency with the Land Use/Transportation Diagram (Land Use and Density)	Yes	No
Is the proposed Project consistent with the Land Use/Transportation Diagram?	☒	☐
If not, and the proposed project includes a General Plan Amendment, does the proposed amendment decrease GHG emissions (in absolute terms or per capita, per employee, per service population) below the level assumed in the GHGRS based on the existing planned land use? (The project could have a higher density, mix of uses, or other features that would reduce GHG emissions compared to the planned land use).[2]	☐	☐
If not, would the proposed project and the General Plan Amendment increase GHG emissions (in absolute terms or per capita, per employee, per service population)? Project is not consistent with GHGRS and further modeling will be required to determine if additional mitigation measures are necessary.	☐	☐

Response documentation: *[Either here or as an attachment]*

The project site has a General Plan Land Use Designation of Industrial Park (IP). The proposed project site is located within the Transit Employment Residential Overlay (TERO). This overlay identifies sites within the North San José Employment Center that may be appropriate for residential development and supports residential development as an alternate use at a minimum average net density of 75 units per acre. Sites with this overlay may also be developed with uses consistent with the underlying designation. The proposed project anticipates 76.2 dwelling units per acre, providing a mix of apartment housing and market-rate townhomes. Available plans indicate that the proposed project would comply with TERO height and development standards.

[2] For example, a General Plan Amendment to change use from single-family residential to multi-family residential or a General Plan Amendment to change the use from regional-serving commercial to mixed-use urban in a transit-served area might reduce travel demand, and therefore GHG emissions from mobile sources.

2) Implementation of Green Building Measures	Yes	No
***MS-2.2**: Encourage maximized use of on-site generation of renewable energy for all new and existing buildings.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project will include solar PV arrays that meet CALGreen standards and the City of San Jose's reach code.*		
***MS-2.3**: Encourage consideration of solar orientation, including building placement, landscaping, design and construction techniques for new construction to minimize energy consumption.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project will feature numerous sustainability features, including the use of high-quality construction materials with longer lifespan to reduce construction waste and the proposed project will be all-electric in design, to reduce fossil fuel use.*		
***MS-2.7**: Encourage the installation of solar panels or other clean energy power generation sources over parking areas.*	☐	☐
Not applicable	☐	☒
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project will not feature surface parking lots (all parking will be ground-level of buildings or below).*		
***MS-2.11**: Require new development to incorporate green building practices, including those required by the Green Building Ordinance. Specifically, target reduced energy use through construction techniques (e.g., design of building envelopes and systems to maximize energy performance), through architectural design (e.g., design to maximize cross ventilation and interior daylight) and through site design techniques (e.g., orienting buildings on sites to maximize the effectiveness of passive solar design).*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment]		

The proposed project will feature numerous sustainability features, including the use of high-quality construction materials with longer lifespan to reduce construction waste and the proposed project will be all-electric in design, to reduce fossil fuel use.

***MS-16.2**: Promote neighborhood-based distributed clean/renewable energy generation to improve local energy security and to reduce the amount of energy wasted in transmitting electricity over long distances.*	☐	☐
Not applicable	☐	☒
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project is designated as a residential land use, not an energy-generating use. Solar PV arrays are included in the project, and to the extent available, any unused power generated by the solar PV arrays will be returned to the utility (SJCE).*		

3) Pedestrian, Bicycle & Transit Site Design Measures	**Yes**	**No**
***CD-2.1**: Promote the Circulation Goals and Policies in the Envision San José 2040 General Plan. Create streets that promote pedestrian and bicycle transportation by following applicable goals and policies in the Circulation section of the Envision San José 2040 General Plan.*		
a) Design the street network for its safe shared use by pedestrians, bicyclists, and vehicles. Include elements that increase driver awareness.	☒	☐
b) Create a comfortable and safe pedestrian environment by implementing wider sidewalks, shade structures, attractive street furniture, street trees, reduced traffic speeds, pedestrian-oriented lighting, mid-block pedestrian crossings, pedestrian-activated crossing lights, bulb-outs and curb extensions at intersections, and on-street parking that buffers pedestrians from vehicles.	☒	☐
c) Consider support for reduced parking requirements, alternative parking arrangements, and Transportation Demand Management strategies to reduce area dedicated to parking and increase area dedicated to employment, housing, parks, public art, or other amenities. Encourage de-coupled parking to ensure that the value and cost of parking are considered in real estate and business transactions.	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project features ample pedestrian and bicycle connections throughout the site, and in connection with the nearby existing public bicycle, pedestrian and public transit network. The interior of the site features bicycle paths and bicycle parking, ample common outdoor space; interior sidewalks, pedestrian-oriented landscaping and seating areas, and a pedestrian-only thoroughfare (between the affordable apartments and market-rate apartments).*		

***CD-2.5**: Integrate Green Building Goals and Policies of the Envision San José 2040 General Plan into site design to create healthful environments. Consider factors such as shaded parking areas, pedestrian connections, minimization of impervious surfaces, incorporation of stormwater treatment measures, appropriate building orientations, etc.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project includes shaded parking areas (all parking is indoors and ground level or below), features ample pedestrian connections including sidewalks and a pedestrian-only thoroughfare, along with pedestrian-friendly landscaping; includes on-site landscaping and new tree plantings and bicycle connections. Impervious surfaces in the form of vehicular access are limited.*		

	Yes	No
***CD-2.11**: Within the Downtown and Urban Village Overlay areas, consistent with the minimum density requirements of the pertaining Land Use/Transportation Diagram designation, avoid the construction of surface parking lots except as an interim use, so that long-term development of the site will result in a cohesive urban form. In these areas, whenever possible, use structured parking, rather than surface parking, to fulfill parking requirements. Encourage the incorporation of alternative uses, such as parks, above parking structures.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *There are no surface parking lots. The proposed project is a re-use of an existing surface parking lot, adding density and housing to a previously underutilized area.*		
***CD-3.2**: Prioritize pedestrian and bicycle connections to transit, community facilities (including schools), commercial areas, and other areas serving daily needs. Ensure that the design of new facilities can accommodate significant anticipated future increases in bicycle and pedestrian activity.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project includes bicycle circulation and bicycle parking. The proposed project along an existing public transit route.*		
***CD-3.4**: Encourage pedestrian cross-access connections between adjacent properties and require pedestrian and bicycle connections to streets and other public spaces, with particular attention and priority given to providing convenient access to transit facilities. Provide pedestrian and vehicular connections with cross-access easements within and between new and existing developments to encourage walking and minimize interruptions by parking areas and curb cuts.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project includes a pedestrian-only thoroughfare, and connections to all existing streets (Anza Road, Iron Point Drive, River Oaks Park, Cisco Way, and Levee Road). Furthermore, bicycle circulation is provided along Cisco Way and River Oaks Pak.*		
***LU-3.5**: Balance the need for parking to support a thriving Downtown with the need to minimize the impacts of parking upon a vibrant pedestrian and transit oriented urban environment. Provide for the needs of bicyclists and pedestrians, including adequate bicycle parking areas and design measures to promote bicyclist and pedestrian safety.*	☒	☐
Not applicable	☐	☐

Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project exceeds the bicycle parking requirements in both the market-rate and affordable buildings. The proposed project includes bicycle connections, pedestrian thoroughfares, and connections to the existing streets and public transit network.*		
	Yes	**No**
TR-2.8: *Require new development to provide on-site facilities such as bicycle storage and showers, provide connections to existing and planned facilities, dedicate land to expand existing facilities or provide new facilities such as sidewalks and/or bicycle lanes/paths, or share in the cost of improvements.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project exceeds the bicycle parking requirements in both the market-rate and affordable buildings. The proposed project includes bicycle connections, pedestrian thoroughfares, and connections to the existing streets and public transit network.*		
TR-7.1: *Require large employers to develop TDM programs to reduce the vehicle trips and vehicle miles generated by their employees through the use of shuttles, provision for car-sharing, bicycle sharing, carpool, parking strategies, transit incentives and other measures.*	☐	☐
Not applicable	☐	☒
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project is residential and there are no employment or commercial elements of the project.*		
TR-8.5: *Promote participation in car share programs to minimize the need for parking spaces in new and existing development.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project includes covered parking which could be used to facilitate car sharing spaces.*		

4) Water Conservation and Urban Forestry Measures	Yes	No
***MS-3.1**: Require water-efficient landscaping, which conforms to the State's Model Water Efficient Landscape Ordinance, for all new commercial, institutional, industrial and developer-installed residential development unless for recreation needs or other area functions.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *According to applicant-provided materials, the proposed project will implement native species to reduce the need for irrigation.*		

	Yes	No
***MS-3.2**: Promote the use of green building technology or techniques that can help reduce the depletion of the City's potable water supply, as building codes permit. For example, promote the use of captured rainwater, graywater, or recycled water as the preferred source for non-potable water needs such as irrigation and building cooling, consistent with Building Codes or other regulations.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project will comply with all state and local water efficiency requirements and regulations.*		

***MS-19.4**: Require the use of recycled water wherever feasible and cost-effective to serve existing and new development.*	☐	☐
Not applicable	☐	☒
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project may implement the use of recycled water in landscape irrigation if deemed cost-effective or feasible.*		
***MS-21.3**: Ensure that San José's Community Forest is comprised of species that have low water requirements and are well adapted to its Mediterranean climate. Select and plant diverse species to prevent monocultures that are vulnerable to pest invasions. Furthermore, consider the appropriate placement of tree species and their lifespan to ensure the perpetuation of the Community Forest.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *New landscaping will be native species to reduce the need for irrigation.*		

***MS-26.1**: As a condition of new development, require the planting and maintenance of both street trees and trees on private property to achieve a level of tree coverage in compliance with and that implements City laws, policies or guidelines.*	☒	☐
Not applicable	☐	☐
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment]		

	Yes	No
***ER-8.7**: Encourage stormwater reuse for beneficial uses in existing infrastructure and future development through the installation of rain barrels, cisterns, or other water storage and reuse facilities.*	☐	☐
Not applicable	☐	☒
Describe how the project is consistent or why the measure is not applicable. [Either here or as an attachment] *The proposed project will encourage stormwater reuse on-site where feasible.*		

GHGRS Strategies

GHGRS #1: The City will implement the San José Clean Energy program to provide residents and businesses access to cleaner energy at competitive rates.

GHGRS #2: The City will implement its building reach code ordinance (adopted September 2019) and its prohibition of natural gas infrastructure ordinance (adopted October 2019) to guide the city's new construction toward zero net carbon (ZNC) buildings.

GHGRS #3: The City will expand development of rooftop solar energy through the provision of technical assistance and supportive financial incentives to make progress toward the Climate Smart San José goal of becoming a one-gigawatt solar city.

GHGRS #4: The City will support a transition to building decarbonization through increased efficiency improvements in the existing building stock and reduced use of natural gas appliances and equipment.

GHGRS #5: As an expansion to Climate Smart San José, the City will update its Zero Waste Strategic Plan and reassess zero waste strategies. Throughout the development of the update, the City will continue to divert 90 percent of waste away from landfills through source reduction, recycling, food recovery and composting, and other strategies.

GHGRS #6: The City will continue to be a partner in the Caltrain Modernization Project to enhance local transit opportunities while simultaneously improving the city's air quality.

GHGRS #7: The City will expand its water conservation efforts to achieve and sustain long-term per capita reductions that ensure a reliable water supply with a changing climate, through regional partnerships, sustainable landscape designs, green infrastructure, and water-efficient technology and systems.

Table B: 2030 Greenhouse Gas Reduction Strategy Compliance

GHGRS Strategy and Consistency Options	Description of Project Measure	Project Conformance
PART 1: RESIDENTIAL PROJECTS ONLY		
Zero Net Carbon Residential Construction 1. Achieve/exceed the City's Reach Code, and 2. Exclude natural gas infrastructure in new construction, or 3. Install on-site renewable energy systems or participate in a community solar program to offset 100% of the project's estimated energy demand, or 4. Participate in San José Clean Energy at the Total Green level (i.e., 100% carbon-free electricity) for electricity accounts associated with the project until which time SJCE achieves 100% carbon-free electricity for all accounts. **Supports Strategies**: GHGRS #1, GHGRS #2, GHGRS #3	*Describe which, if any, project consistency options from the leftmost column you are implementing.* *OR,* *Describe why this strategy is not applicable to your project.* *OR,* *Describe why such measures are infeasible.* *The proposed project will implement and support GHGRS #1, #2, #3, and #4. GHGRS #4 will be implemented as a COA.*	☒ Proposed ☐ Not Applicable ☐ Not Feasible* ☐ Alternative Measure Proposed ** The 2030 GHGRS assumed this strategy would be feasible for 50% of residential units constructed between 2020 and 2030.*
PART 2: RESIDENTIAL AND NON-RESIDENTIAL PROJECTS		
Renewable Energy Development 1. Install solar panels, solar hot water, or other clean energy power generation sources on development sites, or 2. Participate in community solar programs to support development of renewable energy in the community, or	*Describe which, if any, project consistency options from the leftmost column you are implementing.* *OR,* *Describe why this strategy is not applicable to your project.* *OR,* *Describe why such measures are infeasible.* *The proposed project will implement and support #1 and #3. #3 will be implemented as a COA.*	☒ See Part 1 (Residential projects only) ☐ Proposed ☐ Not Applicable ☐ Not Feasible ☐ Alternative Measure Proposed

GHGRS Strategy and Consistency Options	Description of Project Measure	Project Conformance
3. Participate in San José Clean Energy at the Total Green level (i.e., 100% carbon-free electricity) for electricity accounts associated with the project. **Supports Strategies**: GHGRS #1, GHGRS #3		
Building Retrofits – Natural Gas[3] This strategy only applies to projects that include a retrofit of an existing building. If the proposed project does not include a retrofit, select "Not Applicable" in the Project Conformance column. 1. Replace an existing natural gas appliance with an electric alternative (e.g., space heater, water heater, clothes dryer), or 2. Replace an existing natural gas appliance with a high-efficiency model **Supports Strategies:** GHGRS #4	*Describe which, if any, project consistency options from the leftmost column you are implementing.* *OR,* *Describe why this strategy is not applicable to your project.* *OR,* *Describe why such measures are infeasible.* *The proposed project does not involve any building retrofits.*	☐ Proposed ☒ Not Applicable ☐ Not Feasible ☐ Alternative Measure Proposed
Zero Waste Goal 1. Provide space for organic waste (e.g., food scraps, yard waste) collection containers, and/or 2. Exceed the City's construction & demolition waste diversion requirement. **Supports Strategies:** GHGRS #5	*Describe which, if any, project consistency options from the leftmost column you are implementing.* *OR,* *Describe why this strategy is not applicable to your project.* *OR,* *Describe why such measures are infeasible.* *The proposed project will implement #1.*	☒ Proposed ☐ Not Applicable ☐ Not Feasible ☐ Alternative Measure Proposed

[3] GHGRS Strategy #4 applies to existing building retrofits and not to new construction; Strategy #2 applies to new construction to reduce natural gas related GHG emissions

GHGRS Strategy and Consistency Options	Description of Project Measure	Project Conformance
Caltrain Modernization 1. For projects located within ½ mile of a Caltrain station, establish a program through which to provide project tenants and/or residents with free or reduced Caltrain passes or 2. Develop a program that provides project tenants and/or residents with options to reduce their vehicle miles traveled (e.g., a TDM program), which could include transit passes, bike lockers and showers, or other strategies to reduce project related VMT. **Supports Strategies:** GHGRS #6	*Describe which, if any, project consistency options from the leftmost column you are implementing.* *OR,* *Describe why this strategy is not applicable to your project.* *OR,* *Describe why such measures are infeasible.*	☐ Proposed ☐ Not Applicable ☐ Not Feasible ☐ Alternative Measure Proposed
Water Conservation 1. Install high-efficiency appliances/fixtures to reduce water use, and/or include water-sensitive landscape design, and/or 2. Provide access to reclaimed water for outdoor water use on the project site. **Supports Strategies:** GHGRS #7	*Describe which, if any, project consistency options from the leftmost column you are implementing.* *OR,* *Describe why this strategy is not applicable to your project.* *OR,* *Describe why such measures are infeasible.*	☐ Proposed ☐ Not Applicable ☐ Not Feasible ☐ Alternative Measure Proposed

Table C: Applicant Proposed Greenhouse Gas Reduction Measures

Description of Proposed Measure	Description of GHG Reduction Estimate	Proposed Measure Implementation
[Describe the proposed project measure and why it is proposed] **Supports Strategies/Sectors:** GHGRS #	*[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.* *Include a description of how your measure will reduce emissions and provide supporting quantification documentation/assumptions.]*	☐ Part of Design ☐ Additional Measure
[Describe the proposed project measure and why it is proposed] **Supports Strategies/Sectors:** GHGRS #	*[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.* *Include a description of how your measure will reduce emissions and provide supporting quantification documentation/assumptions.]*	☐ Part of Design ☐ Additional Measure
[Describe the proposed project measure and why it is proposed] **Supports Strategies/Sectors:** GHGRS #	*[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.* *Include a description of how your measure will reduce emissions and provide supporting quantification documentation/assumptions.]*	☐ Part of Design ☐ Additional Measure
[Describe the proposed project measure and why it is proposed] **Supports Strategies/Sectors:** GHGRS #	*[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.* *Include a description of how your measure will reduce emissions and provide supporting quantification documentation/assumptions.]*	☐ Part of Design ☐ Additional Measure