HELIX Environmental Planning

Questhaven Project

Air Quality Technical Report

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Table of Contents

Section **Page**

EXECUTIVE SUMMARY ES-1

1.0 INTRODUCTION AND PROJECT DESCRIPTION 1
- 1.1 Purpose of the Report 1
- 1.2 Project Location and Description 1
- 1.3 Project Control Measures 2
  - 1.3.1 Regulatory Requirements 2
  - 1.3.2 Construction Best Management Practices 2

2.0 EXISTING CONDITIONS 3
- 2.1 Existing Setting 3
  - 2.1.1 Land Use Designation 3
  - 2.1.2 Surrounding Uses 3
  - 2.1.3 Sensitive Receptors 4
- 2.2 Climate / Meteorology and Temperature Inversions 4
- 2.3 Air Pollutants of Concern 4
  - 2.3.1 Criteria Air Pollutants 4
  - 2.3.2 Toxic Air Contaminants 6
- 2.4 Regulatory Setting 6
- 2.5 Ambient Air Quality 9

3.0 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGIES 10
- 3.1 Methodology 10
  - 3.1.1 Construction Emissions 11
  - 3.1.2 Operational Emissions 13
- 3.2 Significance Criteria 14

4.0 PROJECT IMPACT ANALYSIS 15
- 4.1 Conformance to the Regional Air Quality Plan 15
  - 4.1.1 Guidelines for the Determination of Significance 15
  - 4.1.2 Significance of Impacts Prior to Mitigation 16
  - 4.1.3 Mitigation Measures and Design Considerations 16
  - 4.1.4 Conclusions 17
- 4.2 Criteria Pollutant Emissions 17
  - 4.2.1 Construction Impacts 17
  - 4.2.2 Operational Impacts 19
- 4.3 Impacts to Sensitive Receptors 20
  - 4.3.1 Guidelines for the Determination of Significance 20
  - 4.3.2 Significance of Impacts Prior to Mitigation 20
  - 4.3.3 Mitigation Measures and Design Considerations 21
  - 4.3.4 Conclusions 21

Table of Contents (cont.)

4.4 Odors and Other Emissions 22
4.4.1 Guidelines for the Determination of Significance 22
4.4.2 Significance of Impacts Prior to Mitigation 22
4.4.3 Mitigation Measures and Design Considerations 22
4.4.4 Conclusions 22

5.0 SUMMARY OF RECOMMENDED PROJECT DESIGN FEATURES, IMPACTS, AND MITIGATION 23

5.1 Project Design Features 23
5.2 Project Impacts 23
5.3 Project Mitigation 23

6.0 REFERENCES 24

7.0 LIST OF PREPARERS 26

LIST OF APPENDICES

A CalEEMod Output
B Drilling and Blasting Calculations

LIST OF FIGURES

No. **Title** **Follows Page**

1 Regional Location 2
2 Aerial Photo 2
3 Site Plan 2

LIST OF TABLES

No. **Title** **Page**

1 Summary of Common Sources and Human Health Effects of Criteria Air Pollutants 5
2 California and National Ambient Air Quality Standards 7
3 Federal and State Air Quality Designation 9
4 Air Quality Monitoring Data 10
5 Anticipated Construction Schedule 11
6 Construction Equipment Assumptions 12
7 Screening-Level Thresholds for Air Quality Impact Analysis 15
8 Estimated Construction Emissions 18
9 Estimated Daily Operational Emissions 19

Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
amsl	above mean sea level
ANFO	ammonium nitrate/fuel oil
APNs	Assessor's Parcel Numbers
AQIA	Air Quality Impact Assessment
Attainment Plan	2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County
BMPs	best management practices
CAA	Clean Air Act (Federal)
CAAQS	California Ambient Air Quality Standard
CalEEMod	California Emission Estimator Model
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CO	carbon monoxide
County	County of San Diego
CY	cubic yard
DPM	diesel particulate matter
°F	degrees Fahrenheit
g/L	grams per liter
H_2S	hydrogen sulfide
I-5	Interstate 5
mph	miles per hour
NAAQS	National Ambient Air Quality Standard
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment

Acronyms and Abbreviations (cont.)

Pb	lead
PCE	perchloroethylene
PM_{10}	respirable particulate matter a diameter of 10 microns or less
$PM_{2.5}$	fine particulate matter a diameter of 2.5 microns or less
ppm	parts per million
PVC	polyvinyl chloride
ROGs	reactive organic gases
SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SF	square foot/square feet
SIP	State Implementation Plan
SLTs	screening-level thresholds
SO_2	sulfur dioxide
TACs	Toxic Air Contaminants
T-BACT	Toxics Best Available Control Technology
VOCs	volatile organic compounds
WRCC	Western Regional Climate Center
USEPA	U.S. Environmental Protection Agency

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality impacts associated with the proposed Questhaven Project (project), located in an unincorporated area of the County of San Diego (County) southwest of the City of San Marcos and east of the City of Carlsbad. The project consists of a Tentative Map, a Density Bonus Permit, and an Administrative Permit and would provide for development of 76 single-family residential homes and associated street and other infrastructure on approximately 25 acres of an 89-acre site. The remaining areas of the project site would be open space.

The project would result in emissions of air pollutants during the construction of the project. Construction best management practices (BMPs) would be implemented for the project, including measures to minimize fugitive dust emissions, such as watering twice per day during grading. With the inclusion of these BMPs, emissions of all criteria pollutants would be below the daily thresholds during construction, and impacts would be less than significant.

Operational emissions associated with the project would include pollutants associated with vehicular traffic, on-site energy use, landscaping, and the use of consumer products. Emissions of all criteria pollutants during operation of the project would be below the daily thresholds, and impacts would be less than significant.

Construction of the project would not conflict with or obstruct implementation of the San Diego Air Pollution Control District's (SDAPCD's) *2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County* (Attainment Plan) or the State Implementation Plan (SIP) and would not result in any cumulatively considerable emissions of nonattainment air pollutants that would exceed the screening level thresholds.

The project would not result in the exposure of sensitive receptors to substantial emissions of pollutants or toxic air contaminants, including emissions of diesel particulate matter (DPM) during construction. An evaluation of other emissions (such as those leading to odors) from construction activities and project operation indicated that the project would not adversely affect a substantial number of people.

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1.0 INTRODUCTION AND PROJECT DESCRIPTION

1.1 PURPOSE OF THE REPORT

This report analyzes potential air quality impacts associated with the proposed Questhaven Residential Project (project) and includes an evaluation of existing conditions in the project vicinity and an assessment of potential impacts associated with project construction and operation. The analysis of impacts and report is prepared in accordance with the County of San Diego (County) project-specific air quality analysis requirements (Attachment C to the Questhaven to Tentative Map Pre-Application Letter; County 2020) and the Guidelines for Determining Significance and Report Content and Format Requirement for Air Quality (County 2007) as updated by the most recent California Environmental Quality Act (CEQA) guidelines.

1.2 PROJECT LOCATION AND DESCRIPTION

The project site consists of approximately 89.23 acres in the western portion of unincorporated San Diego County within the San Dieguito Community Plan Area. From a regional perspective, the project site is located immediately south and west of the city of San Marcos and east of the city of Carlsbad. Interstate 5 (I-5) is located approximately 5.3 miles west of the project site. Specifically, the project site is located south of San Elijo Road and east of Denning Drive (see Figure 1, *Regional Location*, and Figure 2, *Aerial Photo*). The project site encompasses Assessor's Parcel Numbers (APNs) 223-080-46-00; 223-070-07-00; and 223-070-08-00.

The project consists of a Tentative Map, Density Bonus Permit, and an Administrative Permit for the 89.23-acre site. The project would provide for development of 76 single-family residential homes on 18.3 acres, recreation/community park uses on 0.3 acres, open space on 63.9 acres, internal streets and external road improvements totaling approximately 4.3 acres, and water quality detention basins on 2.4 acres. The project would cluster development in the northeastern portion of the project site to allow for the development of residential uses while providing 53.1 acres of biological open space in the southern and western portion of the site. A wildlife corridor would connect the biological open space with open space lands south and west of the project site. The project would connect to existing utilities within San Elijo Road and existing facilities that occupy existing easements along the project's easterly boundary. Access to the project would be provided via two full access connections to San Elijo Road (see Figure 3, *Site Plan*).

Construction would require approximately 27 months, commencing as early as January 2026 and completing in March 2028. Grading proposed by the project would result in disturbances to 31.35 acres on the project site and 0.09 acres off-site. During grading, approximately 176,000 cubic yards (CY) of earthmoving would be required, to be balanced onsite (no import or export of soil). Depending on conditions and rock encountered during grading, blasting may be required for preparation of roadbeds and/or residential lots.

1.3 PROJECT CONTROL MEASURES

The project would implement control measures that would include (1) measures to comply with the regulatory requirements; and (2) additional best management practices (BMPs) during construction.

1.3.1 Regulatory Requirements

1.3.1.1 Construction Measures

The project would incorporate BMPs during construction to reduce emissions of fugitive dust. San Diego Air Pollution Control District (SDAPCD) Rule 55 – Fugitive Dust Control states that no airborne dust shall be visible beyond the property line for more than three minutes in any 60-minute period. Rule 55 requires the following (SDAPCD 2009):

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

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

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

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

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

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

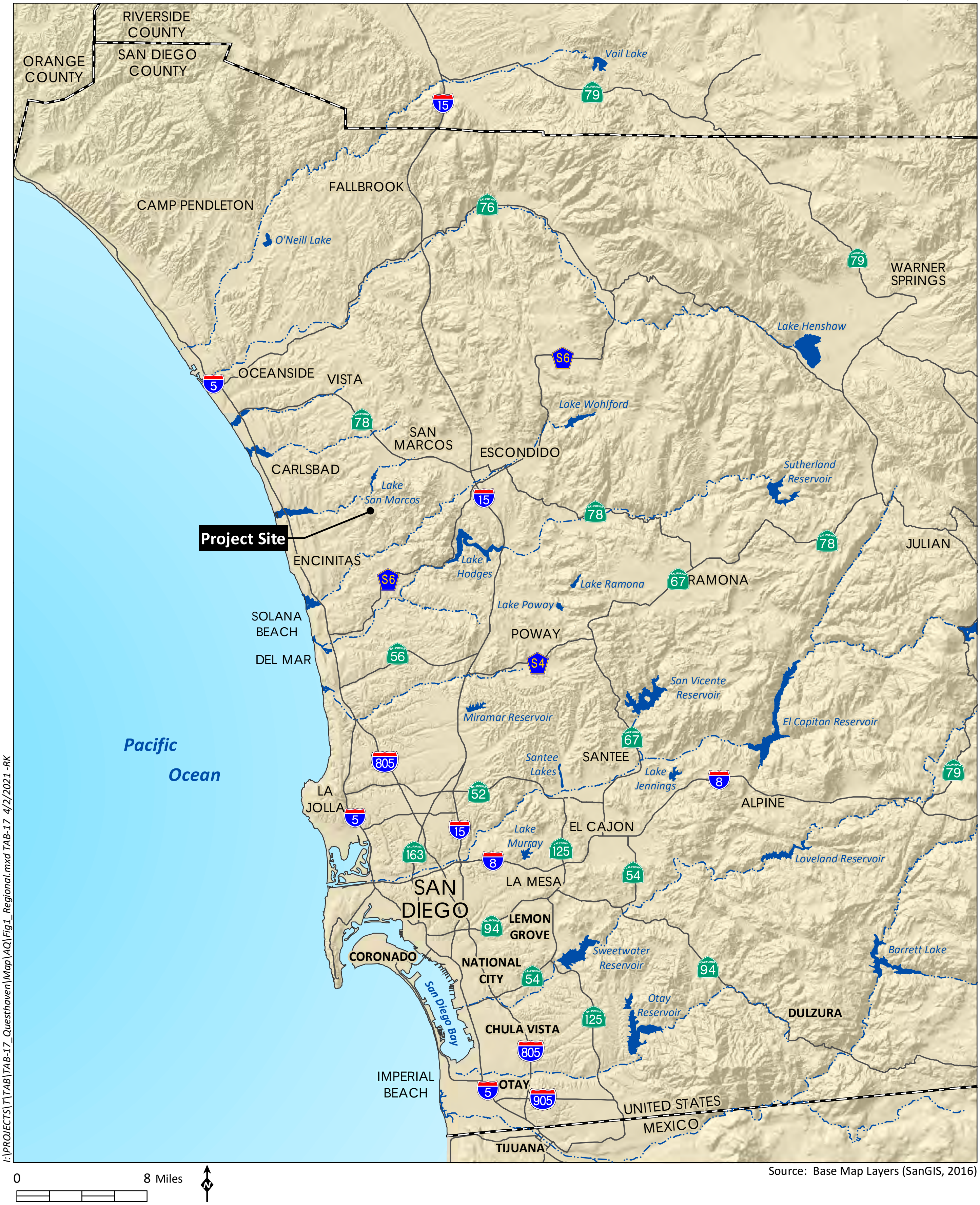
   (ii) be removed at the conclusion of each workday when active operations cease, or every 24 hours for continuous operations. If a street sweeper is used to remove any track-out/carry-out, only respirable particulate matter (PM_{10}) -efficient street sweepers certified to meet the most current South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

1.3.1.2 Area Source Reductions

Use of low-volatile organic compound (VOC) coatings in accordance with SDAPCD Rule 67.0.1, *Architectural Coatings*, specifically general flat coatings shall not exceed 50 grams per liter (g/L) VOC content and non-flat coatings shall not exceed 100 g/L VOC content (SDAPCD 2015).

1.3.2 Construction Best Management Practices

In order to ensure compliance with applicable regulatory requirements, the project would implement the following BMPs:



Source: Base Map Layers (SanGIS, 2016)

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Regional Location

Figure 1

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Source: Aerial (SanGIS, 2019)

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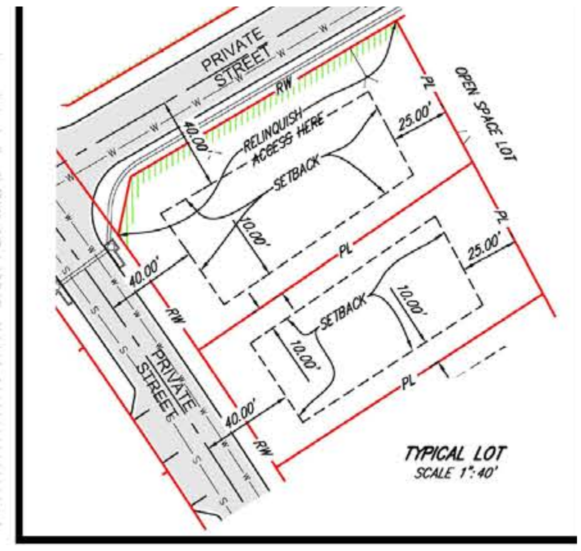
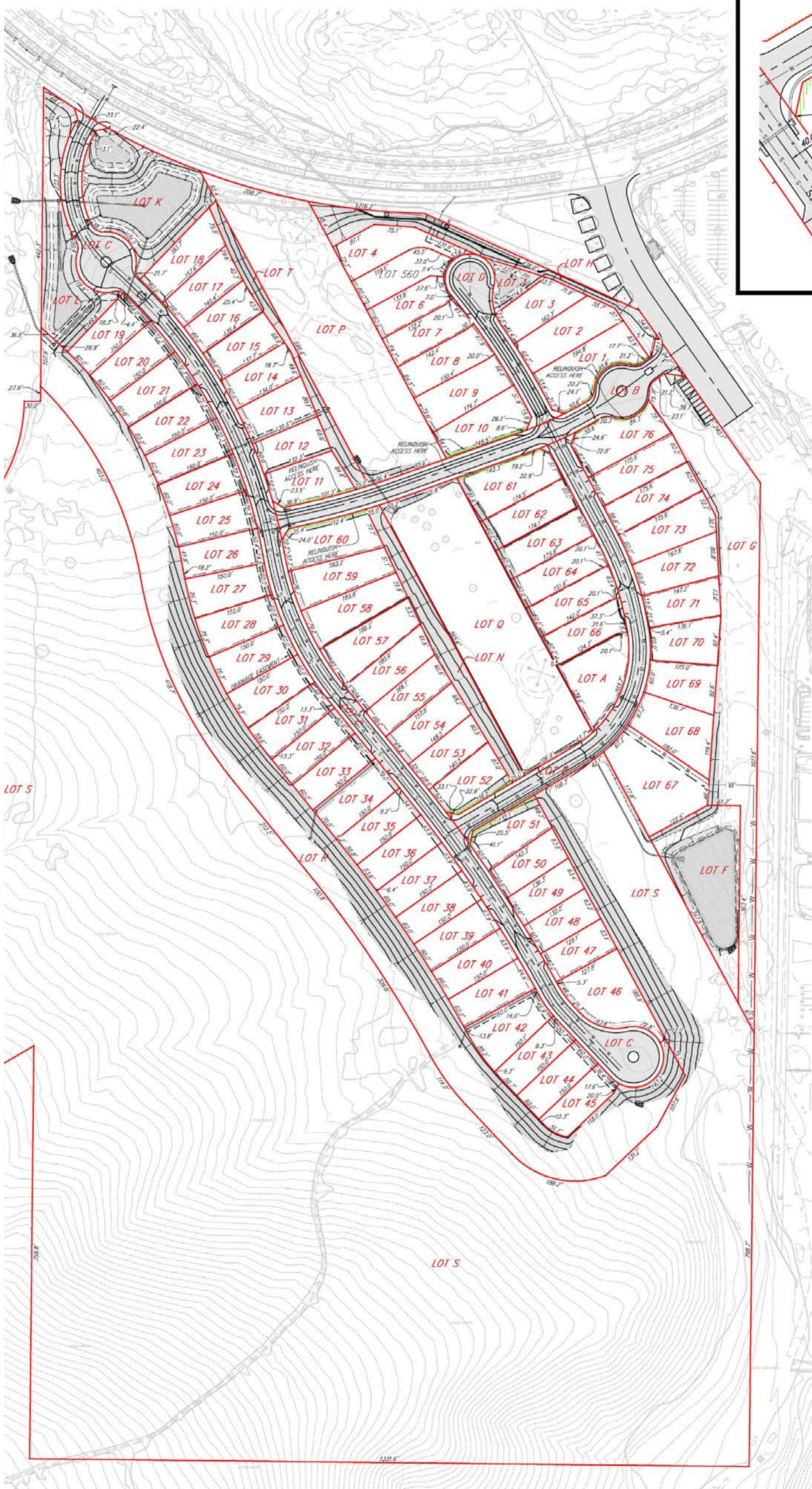
Aerial Photo

Figure 2





QUESTHAVEN SUBD 76 LOT CONCEPT WITH 10 FT SIDE YARD SETBACKS			
PARCEL NAME	LOT TYPE	AREA (SF)	AREA (AC)
Lot 1	RESIDENTIAL	15,915.24	0.37
Lot 2	RESIDENTIAL	12,776.89	0.29
Lot 3	RESIDENTIAL	9,559.46	0.22
Lot 4	RESIDENTIAL	11,993.44	0.28
Lot 5	RESIDENTIAL	10,085.48	0.23
Lot 6	RESIDENTIAL	8,955.98	0.21
Lot 7	RESIDENTIAL	9,377.69	0.22
Lot 8	RESIDENTIAL	10,949.04	0.25
Lot 9	RESIDENTIAL	11,911.06	0.27
Lot 10	RESIDENTIAL	12,220.86	0.28
Lot 11	RESIDENTIAL	10,704.52	0.25
Lot 12	RESIDENTIAL	8,423.35	0.19
Lot 13	RESIDENTIAL	9,885.56	0.23
Lot 14	RESIDENTIAL	8,835.26	0.20
Lot 15	RESIDENTIAL	8,777.50	0.20
Lot 16	RESIDENTIAL	8,804.98	0.20
Lot 17	RESIDENTIAL	9,586.40	0.22
Lot 18	RESIDENTIAL	11,158.05	0.26
Lot 19	RESIDENTIAL	9,923.90	0.23
Lot 20	RESIDENTIAL	9,924.50	0.23
Lot 21	RESIDENTIAL	9,924.50	0.23
Lot 22	RESIDENTIAL	9,924.50	0.23
Lot 23	RESIDENTIAL	9,924.50	0.23
Lot 24	RESIDENTIAL	9,924.50	0.23
Lot 25	RESIDENTIAL	9,927.29	0.23
Lot 26	RESIDENTIAL	9,367.98	0.22
Lot 27	RESIDENTIAL	10,144.31	0.23
Lot 28	RESIDENTIAL	10,144.31	0.23
Lot 29	RESIDENTIAL	10,144.31	0.23
Lot 30	RESIDENTIAL	10,144.31	0.23
Lot 31	RESIDENTIAL	9,894.54	0.23
Lot 32	RESIDENTIAL	9,000.00	0.21
Lot 33	RESIDENTIAL	9,000.00	0.21
Lot 34	RESIDENTIAL	10,500.00	0.24
Lot 35	RESIDENTIAL	9,247.99	0.21
Lot 36	RESIDENTIAL	9,292.83	0.21
Lot 37	RESIDENTIAL	9,292.83	0.21
Lot 38	RESIDENTIAL	9,292.83	0.21
Lot 39	RESIDENTIAL	9,292.83	0.21
Lot 40	RESIDENTIAL	9,292.83	0.21
Lot 41	RESIDENTIAL	9,341.83	0.21
Lot 42	RESIDENTIAL	11,984.56	0.28
Lot 43	RESIDENTIAL	9,000.25	0.21
Lot 44	RESIDENTIAL	9,000.00	0.21
Lot 45	RESIDENTIAL	8,734.08	0.20
Lot 46	RESIDENTIAL	16,229.65	0.37
Lot 47	RESIDENTIAL	7,899.13	0.18
Lot 48	RESIDENTIAL	8,030.43	0.18
Lot 49	RESIDENTIAL	8,258.23	0.19
Lot 50	RESIDENTIAL	8,583.58	0.20
Lot 51	RESIDENTIAL	10,608.53	0.24
Lot 52	RESIDENTIAL	10,331.46	0.24
Lot 53	RESIDENTIAL	8,666.22	0.20
Lot 54	RESIDENTIAL	10,231.98	0.23
Lot 55	RESIDENTIAL	9,715.97	0.22
Lot 56	RESIDENTIAL	10,409.99	0.24
Lot 57	RESIDENTIAL	12,507.91	0.29
Lot 58	RESIDENTIAL	12,460.00	0.29
Lot 59	RESIDENTIAL	11,917.52	0.27
Lot 60	RESIDENTIAL	12,940.49	0.30
Lot 61	RESIDENTIAL	13,666.51	0.31
Lot 62	RESIDENTIAL	10,459.30	0.24
Lot 63	RESIDENTIAL	10,438.12	0.24
Lot 64	RESIDENTIAL	10,412.48	0.24
Lot 65	RESIDENTIAL	10,096.71	0.23
Lot 66	RESIDENTIAL	9,304.64	0.21
Lot 67	RESIDENTIAL	21,440.61	0.49
Lot 68	RESIDENTIAL	13,845.75	0.32
Lot 69	RESIDENTIAL	9,770.10	0.22
Lot 70	RESIDENTIAL	9,742.03	0.22
Lot 71	RESIDENTIAL	9,321.80	0.21
Lot 72	RESIDENTIAL	10,814.98	0.25
Lot 73	RESIDENTIAL	12,302.60	0.28
Lot 74	RESIDENTIAL	10,536.89	0.24
Lot 75	RESIDENTIAL	10,536.89	0.24
Lot 76	RESIDENTIAL	12,770.09	0.29
Lot A	PARK	13,699.68	0.31
Lot B	PRIVATE STREET	37,018.42	0.85
Lot C	PRIVATE STREET	97,488.19	2.24
Lot D	PRIVATE STREET	17,789.53	0.41
Lot E	PRIVATE STREET	36,897.43	0.85
Lot F	WATER QUALITY	32,407.16	0.74
Lot G	OPEN SPACE	79,211.65	1.82
Lot H	OPEN SPACE	19,798.48	0.45
Lot J	WATER QUALITY	5,005.10	0.11
Lot K	WATER QUALITY	38,685.71	0.89
Lot L	WATER QUALITY	28,458.07	0.65
Lot N	OPEN SPACE	18,423.90	0.42
Lot P	OPEN SPACE	89,273.76	2.05
Lot Q	OPEN SPACE	82,517.05	1.89
Lot R	OPEN SPACE	167,599.45	3.85
Lot S	OPEN SPACE	2,314,336.49	53.13
Lot T	OPEN SPACE	12,550.26	0.29

Source: County of San Diego 2022

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Site Plan

Figure 3

- The project applicant will require the contractor(s) to implement paving, chip sealing, or chemical stabilization of internal roadways after completion of grading.
- Dirt storage piles will be stabilized by chemical binders, tarps, fencing or other erosion control.
- A 15-mile per hour (mph) speed limit will be enforced on unpaved surfaces.
- On dry days (i.e., days without rainfall), dirt and debris spilled onto paved surfaces shall be swept up immediately to reduce resuspension of particulate matter caused by vehicle movement. Approach routes to construction sites shall be cleaned daily of construction-related dirt in dry weather.
- Haul trucks hauling dirt, sand, soil, or other loose materials will be covered or two feet of freeboard will be maintained.
- Disturbed areas shall be hydroseeded, landscaped, or developed as quickly as possible and as directed by the County and/or SDAPCD to reduce dust generation.
- Grading will be terminated if winds exceed 25 mph.
- Water will be applied a minimum of twice daily during grading activities.

2.0 EXISTING CONDITIONS

2.1 EXISTING SETTING

The project site is undeveloped and includes several unimproved dirt roads and trails. Historically, the northern portion of the site has been subject to disturbance and was used as a laydown yard for construction equipment associated with the adjacent former recycling facilities. Additionally, a portion of the western area of the site was used for agricultural uses. The southern portion of the project site contains a large area of steep hills that transition into a relatively flat area in the northern and central portion of the site. Elevations range between approximately 830 feet above mean sea level (amsl) in the southwest corner to 500 feet amsl along the eastern boundary.

2.1.1 Land Use Designation

The current project site land use and zoning designation is Rural Residential (RR).

2.1.2 Surrounding Uses

To the west of the project site is open space associated with the Rancho La Costa Habitat Conservation Area, beyond which is existing residential development. North of the project site is land designated for open space, beyond which are existing residential uses. East of the project site is a former recycling facility that is currently used as an indoor sports complex known as “Edenpark.” To the south of the project site is open space associated with the Rancho La Costa Habitat Conservation Area. The project site is adjacent to the San Elijo Hills development in the city of San Marcos and is within their Sphere of Influence.

2.1.3 Sensitive Receptors

The California Air Resources Board (CARB) and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005, OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers.

The closest existing sensitive receptors to the project site are single family residences approximately 300 feet (0.06 mile) west of the project's biological open space and 820 feet (0.16 mile) west of the proposed project site developed area (i.e., residential areas and streets). Additional single-family residences are located approximately 1,000 feet (0.19 mile) northeast of the project site and 1,100 feet (0.21 mile) north of the project site (see Figure 2). The closest school to the project site is San Elijo Middle School, approximately 2,400 feet (0.45 mile) northeast of the project site. The closest daycare facility is located approximately 2,000 feet (0.38 mile) northwest of the project site. There are no hospitals or senior care facilities within 1 mile of the project site.

2.2 CLIMATE / METEOROLOGY AND TEMPERATURE INVERSIONS

The climate in southern California, including the SDAB, is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast, including the project site, experience moderate temperatures and comfortable humidity. The annual average maximum temperature in the project area is approximately 76 degrees Fahrenheit (°F), and the average minimum temperature is approximately 57°F. Total precipitation in the project area averages approximately 16.2 inches per year. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center [WRCC] 2021a).

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

2.3 AIR POLLUTANTS OF CONCERN

2.3.1 Criteria Air Pollutants

Six air pollutants have been identified by the U.S. Environmental Protection Agency (USEPA) and CARB as being of concern both on a nationwide and statewide level: ground-level ozone (O_3), CO, NO_2, sulfur dioxide (SO_2), lead, and particulate matter (PM), which is subdivided into two classes based on particle size: coarse PM equal to or less than 10 micrometers in diameter (PM_{10}) and fine PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). These air pollutants are commonly referred to as "criteria air pollutants" because air quality standards are regulated using human health and environmentally based criteria. Criteria pollutants can be emitted directly from sources (primary pollutants; e.g., CO, SO_2, PM_{10}, $PM_{2.5}$, and lead), or they may be formed through chemical and photochemical reactions of precursor pollutants (secondary pollutants; e.g., ozone and NO_2) in the atmosphere. The principal precursor pollutants of concern are reactive organic gases ([ROGs] also known as volatile organic compounds [VOCs])[1] and nitrogen oxides (NO_X).

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in Table 1, *Summary of Common Sources and Human Health Effects of Criteria Air Pollutants,* based on information provided by the California Air Pollution Control Officers Association (CAPCOA 2018). Specific adverse health effects to individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individuals [e.g., age, gender]). Criteria pollutant precursors (ROG and NO_X) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone and NO_2 are, therefore, the product of emissions generated by numerous sources throughout a region. As such, specific health effects from these criteria pollutant emissions cannot be directly correlated to the incremental contribution from a single project.

Table 1
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to climate change and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles, and dyes.

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

Pollutant	Major Man-Made Sources	Human Health Effects
Particulate Matter (PM_{10} and $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron, and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2018

2.3.2 Toxic Air Contaminants

The Health and Safety Code (§39655, subd. (a).) defines a toxic air contaminant (TAC) as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.” A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Clean Air Act (CAA) (42 United States Code Section 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is known as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, the CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a significant impact on California’s population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2018).

2.4 REGULATORY SETTING

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal CAA of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several pollutants (called “criteria” pollutants, specifically, ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and has established CAAQS for additional pollutants, including sulfates, H_2S, vinyl chloride, and visibility-reducing particles. Similar to the NAAQS, the CAAQS incorporate a margin of safety to protect sensitive individuals from adverse health effects related to air pollutants. Table 2, *California and National Ambient Air Quality Standards*, shows the federal and state ambient air quality standards.

Table 2
CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards Primary[a]	Federal Standards Secondary[b]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	Same as Primary
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
SO_2	24 Hour	0.04 ppm (105 µg/m^3)	–	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	Same as Primary
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	No Federal Standards	No Federal Standards
Sulfates	24 Hour	25 µg/m^3	No Federal Standards	No Federal Standards

Pollutant	Averaging Time	California Standards	Federal Standards Primary[a]	Federal Standards Secondary[b]
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	No Federal Standards	No Federal Standards
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	No Federal Standards	No Federal Standards

Source: CARB 2016

Note: More detailed information in the data presented in this table can be found at the CARB website (www.arb.ca.gov).

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

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

O_3: ozone; ppm: parts per million; µg/m^3: micrograms per cubic meter; PM_{10}: large particulate matter; AAM: Annual Arithmetic Mean; $PM_{2.5}$: fine particulate matter; CO: carbon monoxide; mg/m^3: milligrams per cubic meter; NO_2 nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer; –: No Standard.

Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant. On August 3, 2018, the SDAB was classified as a moderate nonattainment area for the 8-hour NAAQS for ozone (USEPA 2020). The SDAB is currently classified as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area or unclassified for the NAAQS and CAAQS for all other criteria pollutants (SDAPCD 2019).

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

The SDAPCD and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The regional air quality plan for San Diego County is SDAPCD's *2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County* (Attainment Plan; SDAPCD 2020). The Attainment Plan, which would be a revision to the state implementation plan (SIP), outlines SDAPCD's plans and control measures designed to attain the national ambient air quality standard (NAAQS) for ozone. These plans accommodate emissions from all sources, including natural sources, through implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and CARB, and the emissions and reduction strategies related to mobile sources are considered in the Attainment Plan and SIP.

The current federal and state attainment status for the County are shown in Table 3, *Federal and State Air Quality Designation.*

Table 3
FEDERAL AND STATE AIR QUALITY DESIGNATION

Criteria Pollutant	Federal Designation	State Designation
Ozone (1-hour)	Attainment[1]	Nonattainment
Ozone (8-hour)	Nonattainment	Nonattainment
CO	Attainment	Attainment
PM_{10}	Unclassified[2]	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassified
Visibility	(No federal standard)	Unclassified

Source: SDAPCD 2019

1 The federal 1-hour standard of 12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.

2 At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassified.

2.5 AMBIENT AIR QUALITY

The SDAPCD operates a network of ambient air monitoring stations throughout the County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS.

The nearest ambient monitoring station with data representative of conditions at the project site is the San Diego-Kearny Villa Road Monitoring Station located at 6125A Kearny Villa Road the city of San Diego, approximately 17.5 miles south of the project site. Measurements at this station are generally representative of conditions at the project site because the surrounding land use (a mix of suburban and open space) is similar between the monitoring station and the project site, and both are located a similar distance inland (approximately 7.5 miles from the coast) resulting in similar meteorological conditions with average summer daytime high temperatures in the upper 80s and average winter low temperatures in the upper 30s and low 40s (WRCC 2021a and 2021b). The San Diego-Kearny Villa Road monitoring station monitors ozone, particulate matter, and NO_2. Air quality data for the monitoring station is shown in Table 4, *Air Quality Monitoring Data.*

Table 4
AIR QUALITY MONITORING DATA

Air Pollutant	2019	2020	2021
Ozone (O_3)			
Max 1-hour (ppm)	0.083	0.123	0.095
Days > CAAQS (0.09 ppm)	0	2	1
Max 8-hour (ppm)	0.075	0.102	0.071
Days > NAAQS (0.070 ppm)	1	10	1
Days > CAAQS (0.070 ppm)	1	12	2
Particulate Matter (PM_{10})			
Max Daily (µg/m^3)	*	*	*
Days > NAAQS (150 µg/m^3)	-	-	-
Days > CAAQS (50 µg/m^3)	-	-	-
Annual Average (µg/m^3)	*	*	*
Exceed CAAQS (20 µg/m^3)	-	-	-
Particulate Matter ($PM_{2.5}$)			
Max Daily (µg/m^3)	16.2	47.5	20.9
Days > NAAQS (35 µg/m^3)	0	2	0
Annual Average (µg/m^3)	7.0	8.7	7.6
Exceed NAAQS (15 µg/m^3)	No	No	No
Exceed CAAQS (12 µg/m^3)	No	No	No
Nitrogen Dioxide (NO_2)			
Max 1-hour (ppm)	0.046	0.052	0.060
Days > NAAQS (0.10 ppm)	0	0	0
Days > CAAQS (0.18 ppm)	0	0	0

Sources: CARB 2023. Data collected at the San Diego-Kearny Villa Road Monitoring Station.
> = exceeding; ppm = parts per million; µg/m^3 = micrograms per cubic meter;
* = Insufficient data available to determine the value.

Monitoring data at the San Diego-Kearny Villa Road Monitoring Station show violations of the state 1-hour ozone standard on 2 days in 2020 and once in 2021. Violations of both the state and federal 8-hour ozone standards occurred on multiple days during the sample period. Data for the maximum and/or annual average concentrations for PM_{10}, $PM_{2.5}$, and NO_2 show either no exceedance of the state and federal standard or insufficient data for 2019 through 2021 (CARB 2023).

3.0 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGIES

3.1 METHODOLOGY

Criteria pollutant and ozone precursor emissions were assessed using the California Emissions Estimator Model (CalEEMod), Version 2022.1. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. The model was developed for the CAPCOA in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs.

The model calculates emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, and the ozone precursors ROGs and NO_X. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices A, D, and E (CAPCOA 2022). The input data and subsequent emission estimates for the project are discussed below. CalEEMod output files for the project are included in Appendix A to this report.

3.1.1 Construction Emissions

3.1.1.1 Construction Phases

The construction schedule was determined by using CalEEMod defaults, assuming a construction completion date of March 2028 from the project applicant. As shown in Table 5, *Anticipated Construction Schedule*, project development is assumed to start in January 2026 and is projected to end in March 2028.

The quantity, duration, and intensity of construction activity have an effect on the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. If a less intensive buildout schedule is followed during project construction, actual emissions could be less than those forecasted as fewer daily emissions would occur over a longer time interval.[2] In addition, if construction is delayed or occurs over a longer time period, and therefore occurs at a later date, emissions could be reduced because of a more modern and cleaner-burning construction equipment fleet mix than incorporated in CalEEMod. A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

Table 5
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period Start	Construction Period End	Construction Period Number of Working Days
Site Preparation	1/1/2026	1/28/2026	20
Grading	1/29/2026	4/1/2026	45
Paving	4/2/2026	5/20/2026	35
Building Construction	5/21/2026	1/26/2028	440
Architectural Coating	1/27/2028	3/15/2028	35

Source: CalEEmod (assumptions and output data are provided in Appendix A).

3.1.1.2 Construction Equipment

Construction would require heavy equipment for the various construction phases. Construction equipment estimates are based on default values in CalEEMod, Version 2022.1 model with additional equipment added to the grading phase to account for the preparation for blasting and the relocation of fractured rock after blasting, specifically a bore/drill rig, a rubber tired front loader and an off-road

[2] For example, if one piece of equipment takes five days to complete a task, the daily emissions would be less than if five pieces of equipment work to complete the same task in one day.

truck. Table 6, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each stage of construction.

Table 6
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment	Number
Site Preparation	Rubber-Tired Dozers	3
	Tractors/Loaders/Backhoes	4
Grading	Bore/Drill Rigs	1
	Excavators	2
	Graders	1
	Off-Road Trucks	1
	Rubber Tired Dozer	1
	Rubber Tired Loader	1
	Scrapers	2
	Tractors/Loaders/Backhoes	2
Building Construction	Cranes	1
	Forklifts	3
	Generator Sets	1
	Tractors/Loaders/Backhoes	3
	Welders	1
Paving	Pavers	2
	Paving Equipment	2
	Rollers	2
Architectural Coating	Air Compressors	1

Source: CalEEMod (further assumptions, including equipment horsepower, is provided in Appendix A).

3.1.1.3 Construction Vehicle Trips

The earthwork calculations from the project applicant estimate that approximately 176,000 CY of earthmoving would be required during grading, to be balanced onsite (no hauling of soil). However, vegetation would be removed from the site during site preparation, aggregate would be imported to the site during grading for project street construction, and asphalt would be imported to the site during paving. Based on exiting vegetation estimates from aerial images of the project site, approximately 3,700 tons of vegetation (approximately 185 truckloads) would be removed from the approximately 25-acre development footprint during site preparation. The amount of aggregate imported for project road construction and utility trenching would depend on the soil condition encountered. This analysis assumes an average 1-foot depth of aggregate (approximately 7,200 CY, 450 truckloads) and an average 0.5-foot asphalt depth (approximately 3,600 CY, 225 truckloads) would be required for the project streets and utilities. The CalEEMod default hauling distance of 20 miles was assumed, as was the CalEEMod default truck capacity of 20 tons or 16 CY. The CalEEMod default construction worker and vendor trips and distances were assumed. A complete listing of the construction trip assumptions used in the analysis is provided in Appendix A of this report.

3.1.1.4 Blasting

Depending on conditions and rock encountered during grading, blasting may be required for preparation of roadbeds and/or residential lots. The number and size of blasting events that could be required has not been determined as of this analysis. Therefore, one day of blasting activity per week during grading (up to seven total days) was assumed with each day allowing for multiple blasts covering up to a combined 10,000 square feet and requiring no more than a total of 1.25 tons of ammonium nitrate/fuel oil (ANFO) explosive. Blasting gas emissions were calculated using emissions factors from the USEPA AP-42 5th Edition, *Compilation of Air Emissions Factors*, Chapter 13.2, *Explosives Detonation*.

Preparation for blasting would require boring up to 100 holes for explosives per event. This analysis assumes that one bore/drill rig can complete an average of 2 holes per hour (16 per 8-hour workday). The CalEEMod analysis includes exhaust emissions from the use of the drill/bore rigs, but it does not include fugitive dust emissions from the drilling activity. Emissions factors from AP-42 Chapter 11.9, *Western Surface Coal Mining* (USEPA 1998) and Chapter 11.19, *Construction Aggregate Processing* were used to calculate fugitive dust (PM_{10} and $PM_{2.5}$) emissions from drilling and blasting. The drilling and blasting calculation sheets are included as Appendix B, *Drilling and Blasting Calculations*, of this report.

3.1.1.5 Modeled Best Management Practices

Although it was assumed that all of the dust control measures listed in Section 1.3 of this report would be implemented, to model the most conservative construction estimates and because the effectiveness of many measures is difficult to quantify, only application of water a minimum of twice per day, sweeping paved roads once per month, and limiting speeds on unpaved surfaces was taken into consideration. Based on CalEEMod defaults, the fugitive PM_{10} and $PM_{2.5}$ control efficiency for watering two times per day is 55 percent.

The project would implement the construction BMPs listed in Section 1.3, including the use of low VOC content coatings with no more than 50 g/L for all interior and exterior coatings flat costings and 100 g/L for non-flat pavement marking. The quantities of coatings that would be applied to the interior and exterior of the new buildings and streets were estimated according to CalEEMod default assumptions. A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

3.1.2 Operational Emissions

3.1.2.1 Area Sources

Area sources include emissions from landscaping equipment, the use of consumer products, the reapplication of architectural coatings for maintenance, and hearths. Emissions associated with area sources were estimated using the CalEEMod default values with the exception of hearths—the project would only include electric fireplaces.

3.1.2.2 Energy Sources

Direct emissions from the burning of natural gas typically result from the use of furnaces, hot water heaters, and kitchen appliances. The project has been designed to include all electric appliances and end uses. Using electric instead of natural gas-powered appliances and end uses replaces a more emissions-intensive fossil fuel source of energy with a less emissions-intensive source of energy, electricity from the grid that is increasingly transitioning to renewable sources.

3.1.2.3 Vehicular (Mobile) Sources

Operational emissions from mobile source emissions are associated with project-related vehicle trip generation and trip length. Based on the trip generation rate from the Transportation Study prepared for the project, the project would generate 12 average daily trips (ADT) per dwelling unit (DU) and the community park would generate 2 ADT (Chen Ryan 2023). According to the Transportation Study vehicle miles traveled (VMT) analysis, each project resident would travel 24.1 miles per day (Chen Ryan 2023). The CalEEMod VMT was set to 5,129 miles per day based on a residential occupation rate of 2.8 persons per household consistent with the projections in the County's 2018 Climate Action Plan (County 2018).

3.2 SIGNIFICANCE CRITERIA

The County has approved guidelines for determining significance (2007; County Guidelines); however, the County Guidelines have not yet been revised to reflect Appendix G of the State California Environmental Quality Act (CEQA) Guidelines, as updated in 2019. In accordance with project-specific requirements for air-quality analysis, provided in Attachment C to the Tentative Map application, the air quality issues addressed should follow the most recent CEQA Guidelines Appendix G Checklist (County 2020). A significant environmental impact would occur if the project would:

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

To determine whether a project would result in a cumulatively considerable net increase of $PM_{10,}$ $PM_{2.5}$, or ozone precursors (NO_X and VOCs) or have an adverse effect on human health, project emissions may be evaluated based on the quantitative SLTs adopted by the County. As part of its air quality permitting process, the SDAPCD has established trigger levels in Rule 20.2 for the preparation of Air Quality Impact Assessments (AQIAs). SDAPCD has not established trigger levels for emissions of $PM_{2.5}$ or VOCs. As such, the County has adopted the threshold of 55 pounds per day or as a significance threshold for $PM_{2.5}$ from the EPA "Proposed Rule to Implement the Fine Particulate National Ambient Air Quality Standards" published September 8, 2005. The County has also adopted a threshold of 75 per day for VOCs as specified by SCAQMD, which generally has stricter emissions thresholds than SDAPCD (County 2007).

The trigger levels, and by proxy the SLTs, were developed by SDAPCD and SCAQMD with the purpose of attaining the NAAQS and CAAQS. The NAAQS and CAAQS, as discussed in Section 2.4, identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. Therefore, for CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality or an adverse effect on human health. The screening thresholds are included in Table 7, *Screening-Level Thresholds for Air Quality Impact Analysis*.

Table 7
SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSIS

Pollutant	Total Emissions		
Construction Emissions (pounds per day)			
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_X)	250		
Oxides of Sulfur (SO_X)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOCs)	75		
Operational Emissions			
	Pounds per Hour	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOCs)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Source: County 2007
T-BACT = Toxics Best Available Control Technology

4.0 PROJECT IMPACT ANALYSIS

4.1 CONFORMANCE TO THE REGIONAL AIR QUALITY PLAN

4.1.1 Guidelines for the Determination of Significance

Would the project conflict with or obstruct implementation of the applicable air quality plan?

The applicable air quality plans to the project are the Attainment Plan and the SIP, described in Section 2.4, above. The Attainment Plan outlines SDAPCD's plans and control measures designed to attain the CAAQS for ozone. In addition, the SDAPCD relies on the SIP, which includes the SDAPCD's plans and control measures for attaining the ozone NAAQS. These plans accommodate emissions from all sources, including natural sources, through implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and CARB, and the emissions and reduction strategies related to mobile sources are considered in the Attainment Plan and SIP.

The Attainment Plan relies on information from CARB and SANDAG, including projected growth in the County, mobile, area and all other source emissions in order to project future emissions and determine from that the strategies necessary for the reduction of stationary source emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County. As such, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the Attainment Plan. In the event that a project proposes development which is less dense than anticipated within the General Plan, the project would likewise be consistent with the Attainment Plan. If a project proposes development that is greater than that anticipated in the County General Plan and SANDAG's growth projections upon which the Attainment Plan is based, the project may be in conflict with the Attainment Plan and SIP and may have a potentially significant impact on air quality. This situation would warrant further analysis to determine if the project and the surrounding projects exceed the growth projections used in the Attainment Plan for the specific subregional area.

4.1.2 Significance of Impacts Prior to Mitigation

The project site is designated Semi-Rural Residential (SR-1) within the San Dieguito Community Plan. This land use designation would allow for the development of 64 single-family dwelling units on the site. The discretionary approvals associated with the project include a Tentative Map, Density Bonus Permit, and an Administrative Permit. The Density Bonus Permit is proposed pursuant to State law to allow for a 20 percent increase in the maximum allowable number of residential dwelling units in exchange for reserving 5 percent of the dwelling units on-site for Low Income Affordable Housing (defined as 50 to 80 percent of the Area Median Income [AMI]). Approval of the Density Bonus Permit would allow for an increase in the maximum allowable dwelling units from 64 dwelling units to 76 single-family dwelling units in exchange for reserving seven units for Low Income Affordable Housing. The Administrative Permit is required for lot size averaging in order to cluster the development in the northern portion of the project site for protection of sensitive habitat. Approval of the Tentative Map, Density Bonus Permit, and Administrative Permit would allow for ultimate development of the property with 76 single-family residential dwelling units, a recreational park, water quality detention basins, and open space.

A project would be inconsistent with the Attainment Plan and/or SIP if it results in population and/or employment growth that exceed growth estimates for the area. While the project would increase the number of residential dwelling units in the County and would contribute to transportation-generated air pollutants, this would generally be in response to population growth forecasts and the resulting County-wide demand for housing. For the San Dieguito Community Planning Area, where the project is located, forecasts by SANDAG show an increase of 1,379 single-family dwelling units from 2020 to 2035 and an additional 504 single-family dwelling units from 2035 to 2050 (SANDAG 2013). The 76 single-family dwelling units proposed by the project would be consistent with this population forecast.

The Attainment Plan and SIP rely on the same information from the SANDAG growth forecast to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. Because the project is consistent with the existing land use designation and would not generate population growth beyond the levels assumed for the region, the project would not conflict with any population projections for the region and would, therefore, be consistent with the Attainment Plan and SIP. In addition, as detailed in Section 4.2, below, the project would not result in a significant air quality impact with regards to emissions of ozone precursors or criteria air pollutants. Therefore, the project would not conflict with or obstruct implementation of the Attainment Plan or SIP and the impact would be less than significant.

4.1.3 Mitigation Measures and Design Considerations

Impacts would be less than significant, and no mitigation would be required.

4.1.4 Conclusions

The project would not conflict with or obstruct implementation of the Attainment Plan or SIP and would result in a less than significant impact.

4.2 CRITERIA POLLUTANT EMISSIONS

4.2.1 Construction Impacts

4.2.1.1 Guidelines for the Determination of Significance

Would project construction result in a cumulatively considerable net increase for any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

The SDAB is designated as a nonattainment area for the NAAQS for ozone and the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. By its very nature, air pollution is largely a cumulative impact. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. No single project is sufficient in size to, by itself, result in regional nonattainment of ambient air quality standards. A project that has a significant direct impact on air quality with regard to emissions of PM_{10}, $PM_{2.5}$, NO_X, or VOCs during construction, as evidenced by exceeding the SLTs (shown in Table 7), would also have a significant cumulatively considerable net increase. In addition, a project with emissions below the SLTs may still have a cumulatively considerable impact on air quality if the from project construction, in combination with the emissions from construction of other nearby reasonably foreseeable future projects exceed one or more SLT.

4.2.1.2 Significance of Impacts Prior to Mitigation

Emissions related to the construction of the project would be temporary. Table 8, *Estimated Construction Emissions,* provides a summary of the maximum calculated daily construction emissions by activity. As noted above, the emissions estimates assume dust control measures, specifically watering exposed areas a minimum of two times daily, would be employed to reduce emissions of fugitive dust. Where construction activities were assumed to potentially occur on the same day, the resultant emissions from each activity were summed and compared to the daily emission thresholds to determine significance.

Table 8
ESTIMATED CONSTRUCTION EMISSIONS

Year	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2026	4	54	120	3	19	6
2027	1	10	14	<0.5	1	<0.5
2028	29	9	14	<0.5	1	<0.5
MAXIMUM DAILY EMISSIONS[1]	**29**	**54**	**120**	**3**	**19**	**6**
Screening-Level Thresholds	*75*	*250*	*550*	*250*	*100*	*55*
Exceedance?	***No***	***No***	***No***	***No***	***No***	***No***

Note: The total presented is the sum of the unrounded values; as such, totals may not add up exactly due to rounding. The CalEEMod model outputs are presented in Appendix A and blasting emission calculation sheets are presented in Appendix B.

1 Fugitive dust measures (watering twice daily and limiting vehicle speeds to 25 mph on unpaved roads) were applied to control PM_{10} and $PM_{2.5}$ dust emissions. Low VOC architectural coatings were included.

2 Maximum daily emissions from Grading and Blasting Emissions could occur on the same day and are summed in this table.

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 8, with implementation of construction BMPs, emissions of all criteria pollutants and precursors would be below the daily thresholds during construction. Cumulatively considerable primary pollutant emissions (i.e., PM_{10} and $PM_{2.5}$) from construction activities could still occur if construction of the project and other projects in the surrounding area were to occur simultaneously and in proximity to the same sensitive receptors, resulting in localized concentrations in excess of the relevant NAAQS and CAAQS. NO_X and VOCs are precursors which combine to form ozone through a complex photochemical reaction typically after significant distance and time from the emission source. Therefore, emissions of NO_X and VOCs only have potential cumulative air quality impacts (and resulting potential adverse human health effects) on a regional scale.

With respect to local concentrations of PM_{10} and $PM_{2.5}$, there are no known current or future projects in the vicinity of the project where major construction involving demolition activities, cut-and-fill operations, or soil import/export, would occur concurrently with the project construction activities. In addition, all construction activities in the SDAB are required to implement fugitive dust control measure to comply with the SDAPCD’s regulations which limit particulate matter dispersion from any project site. Therefore, because the project’s construction emissions (including NO_X, VOCs, PM_{10}, and $PM_{2.5}$) would be below SLTs which were designed to be protective of human health and welfare (as shown in Table 8), the project would not result in a cumulatively considerable net increase for any criteria pollutant for which the project region is in non-attainment, would not adversely affect public health, and the impact would be less than significant.

4.2.1.3 Mitigation Measures and Design Considerations

Impacts would be less than significant; therefore, no mitigation measures would be required.

4.2.1.4 Conclusions

The project would not result in a cumulatively considerable net increase for any criteria pollutant for which the project region is in non-attainment, would not adversely affect public health, and the impact would be less than significant.

4.2.2 Operational Impacts

4.2.2.1 Guidelines for Determining Significance

Based on the County Guidelines (2007), operational impacts would be potentially significant if they exceed the quantitative screening-level thresholds for criteria pollutants as listed in Table 7.

4.2.2.2 Significance of Impacts Prior to Mitigation

Table 9, *Estimated Daily Operational Emissions*, presents the summary of operational emissions for the project. Operational emission calculations are provided in Appendix A.

Table 9
ESTIMATED DAILY OPERATIONAL EMISSIONS

Source	Pollutant Emissions (pounds per day)					
	VOC	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area	3.8	<0.1	4.3	<0.1	<0.1	<0.1
Energy	<0.1	0.6	0.2	<0.1	0.04	<0.1
Mobile	3.0	1.6	16.9	<0.1	1.4	0.3
TOTAL DAILY EMISSIONS[1]	**6.8**	**2.1**	**21.5**	**<0.1**	**1.5**	**0.3**
Screening-Level Thresholds	*75*	*250*	*550*	*250*	*100*	*55*
Exceedance?	***No***	***No***	***No***	***No***	***No***	***No***

Note: The total presented is the sum of the unrounded values; as such, totals may not add up exactly due to rounding. The CalEEMod model outputs are presented in Appendix A.
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 9, project emissions of criteria pollutants and ozone precursors during operation would not exceed the daily screening thresholds. Therefore, the project's operational emissions would not result in a violation of the NAAQS or CAAQS, would not adversely affect public health, and the impact would be less than significant.

4.2.2.3 Mitigation Measures and Design Considerations

Impacts would be less than significant; therefore, no mitigation measures would be required.

4.2.2.4 Conclusions

The project would not result in a cumulatively considerable net increase for any criteria pollutant for which the project region is in non-attainment, would not adversely affect public health, and the impact would be less than significant.

4.3 IMPACTS TO SENSITIVE RECEPTORS

4.3.1 Guidelines for the Determination of Significance

Would the project expose sensitive receptors to substantial pollutant concentrations?

The guidelines of significance pertaining to construction emissions listed below are used by the County to address the above question are (County 2007, p. 25):

> "Would the project place sensitive receptors near CO 'hotspots' or create CO 'hotspots' near sensitive receptors?"
>
> "Would project implementation result in exposure to TACs resulting in a maximum incremental cancer risk greater than 1 in 1 million without application of Toxics-Best Available Control Technology or a health hazard index greater than 1 and, thus, be deemed as having a potentially significant impact?"

4.3.2 Significance of Impacts Prior to Mitigation

4.3.2.1 CO Hotspots

Vehicle exhaust is the primary source of CO. In an urban setting, the highest CO concentrations are generally found near congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as distance from the emissions source (i.e., congested intersection) increase. Project-generated traffic has the potential of contributing to localized "hot spots" of CO off-site. Because CO is a byproduct of incomplete combustion, exhaust emissions are worse when fossil-fueled vehicles are operated inefficiently, such as in stop-and-go traffic or through heavily congested intersections, where the level of service (LOS) is severely degraded.

CARB recommends evaluation of the potential for the formation of locally high concentrations of CO, known as CO hot spots. A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour CO ambient air standards. To verify that the project would not cause or contribute to a violation of the 1-hour and 8-hour CO standards, an evaluation of the potential for CO hot spots at nearby intersections was conducted.

The Local Transportation Analysis (LTA; Chen Ryan 2021) evaluated whether there would be a change in the LOS at the intersections affected by the proposed project. In accordance with the Transportation Project-Level Carbon Monoxide Protocol, CO hot spots are typically evaluated when: (a) the LOS of an intersection decreases to a LOS E or worse because of the project; (b) signalization and/or channelization is added to an intersection; and (c) sensitive receptors such as residences, schools, hospitals, etc., are located in the vicinity of the affected intersection or roadway segment (California Department of Transportation [Caltrans] 1998).

According to the LTA, implementation of the project would not result in the LOS of any of the analyzed intersections degrading to LOS E or F (Chen Ryan 2021). Therefore, consistent with the CO Protocol, operation of the project would not result in exposure of sensitive receptors to substantial localized CO concentrations.

4.3.2.2 Toxic Air Contaminants

Construction of the project would result in the use of heavy-duty construction equipment, delivery trucks, and construction worker vehicles. These vehicles and equipment could generate DPM, which is classified as a TAC. Generation of DPM from construction projects typically occurs in a localized area (e.g., near locations with multiple pieces of heavy construction equipment working in close proximity) for a short period of time. Because construction activities and subsequent emissions vary depending on the phase of construction, the construction-related emissions to which nearby receptors are exposed to would also vary throughout the construction period. Concentrations of DPM emissions are typically reduced by 70 percent at approximately 500 feet (CARB 2005).

The dose of TACs to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has with the substance; a longer exposure period to a source of emissions would result in higher health risks. Current models and methodologies for conducting cancer health risk assessments are associated with longer-term exposure periods (typically 30 years for individual residents based on guidance from OEHHA) and are best suited for evaluation of long duration TAC emissions with predictable schedules and locations. These assessment models and methodologies do not correlate well with the temporary and highly variable nature of construction activities.

Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime (OEHHA 2015). Considering this information, the fact that any concentrated use of heavy construction equipment would occur at various locations throughout the project site only for short durations, and the distance from the nearest sensitive receptors (approximately 820 feet) to project construction heavy equipment use, construction of the project would not expose sensitive receptors to substantial DPM concentrations, and the impact would be less than significant.

Long-term operation of the project would result in some emissions of DPM from vehicles traveling to and from the project site. However, the project would not require the regular use of heavy or medium diesel-powered trucks (other than for occasional deliveries and waste collection) and the mix of vehicles traveling to and from the project site would primarily be light duty autos and trucks typical of the region. Therefore, the project would not result in significant localized concentrations of DPM. As a residential development, the proposed project in not anticipated to generate other long-term operational TACs. Therefore, long-term operation of the project would not result in the exposure of sensitive receptors to substantial pollutant concentrations and the impact would be less than significant.

4.3.3 Mitigation Measures and Design Considerations

Impacts would be less than significant; therefore, no mitigation measures would be required.

4.3.4 Conclusions

Construction and operation of the project would not expose sensitive receptors to substantial pollutant concentrations and the impact would be less than significant.

4.4 ODORS AND OTHER EMISSIONS

4.4.1 Guidelines for the Determination of Significance

Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

SDAPCD Rule 51 (Public Nuisance) and California Health & Safety Code, Division 26, Part 4, Chapter 3, Section 541700, prohibit the emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of the public (SDAPCD 1976). projects required to obtain permits from SDAPCD, typically industrial and some commercial projects, are evaluated by SDAPCD staff for potential odor nuisance and conditions may be applied (or control equipment required), where necessary, to prevent occurrence of public nuisance.

4.4.2 Significance of Impacts Prior to Mitigation

According to the CARB *Air Quality and Land Use Handbook*, land uses associated with odor complaints include sewage treatment plants, landfills, recycling facilities, waste transfer stations, petroleum refineries, biomass operations, autobody shops, coating operations, fiberglass manufacturing, foundries, rendering plants, and livestock operations (CARB 2005). The project, involving a residential development, would not include any of these uses nor are there any of these land uses in the project vicinity.

The project could produce other emissions such as odors during proposed construction activities resulting from construction equipment exhaust, application of asphalt, and/or the application of architectural coatings; however, standard construction practices such as the five-minute diesel idling limit and use of low-VOC coatings would minimize odors. These typical construction odors could be objectionable to some. However, any odors emitted during construction would be temporary, short-term, and intermittent in nature, and would cease upon the completion of each respective phase of construction. Furthermore, because of distance from the nearest sensitive receptors (approximately 820 feet) to project construction activity, and because typical construction odor emissions disperse rapidly with distance, project construction odors would not result in a level that would affect a substantial number of people. Therefore, the project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and the impact would be less than significant.

4.4.3 Mitigation Measures and Design Considerations

Because the project would not generate objectionable odors that would affect a considerable number of persons, no mitigation measures would be required.

4.4.4 Conclusions

Construction and operation of the project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and the impact would be less than significant.

5.0 SUMMARY OF RECOMMENDED PROJECT DESIGN FEATURES, IMPACTS, AND MITIGATION

5.1 PROJECT DESIGN FEATURES

As described in Section 1.3, the project would incorporate measures to minimize fugitive dust emissions, including watering twice per day during grading in compliance with Rule 55, which requires that no visible dust is emitted beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period, and would incorporate measures to minimize the track-out/carry-out of visible roadway dust.

Low VOC coatings would be used during project construction in accordance with SDAPCD Rule 67.0.1 requirements.

5.2 PROJECT IMPACTS

As described in Section 4.1, the project would be consistent with the Attainment Plan and SIP.

With the implementation of construction BMPs, the project would not result in construction period emissions of criteria pollutant and precursors exceeding the County SLTs or result in localized cumulatively considerable emissions. Project operational emissions would also not exceed the County SLTs or result in cumulatively considerable emissions. Impacts related to criteria pollutant and precursors emissions would be less than significant.

Construction and operation of the project would not expose sensitive receptors to substantial concentrations of pollutants. Impacts associated with exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

Project construction and operational activities would not result in other emissions (such as those leading to odors) that would affect a substantial number of people. Impacts related to odors would be less than significant.

5.3 PROJECT MITIGATION

Because the project would not result in significant impacts, no mitigation would be required.

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Appendix A

CalEEMod Output

Questhaven Residential Project Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.3. Construction Emissions by Year, Mitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

2.6. Operations Emissions by Sector, Mitigated

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

3.2. Site Preparation (2026) - Mitigated

3.3. Grading (2026) - Unmitigated

3.4. Grading (2026) - Mitigated

3.5. Building Construction (2026) - Unmitigated

3.6. Building Construction (2026) - Mitigated

3.7. Building Construction (2027) - Unmitigated

3.8. Building Construction (2027) - Mitigated

3.9. Building Construction (2028) - Unmitigated

3.10. Building Construction (2028) - Mitigated

3.11. Paving (2026) - Unmitigated

3.12. Paving (2026) - Mitigated

3.13. Architectural Coating (2028) - Unmitigated

3.14. Architectural Coating (2028) - Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.2. Unmitigated

4.3.1. Mitigated

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

4.4.1. Mitigated

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

4.5.1. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Questhaven Residential Project
Construction Start Date	3/17/2026
Operational Year	2029
Lead Agency	County of San Diego PDS
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	9.80
Location	33.092845944077894, -117.20597925091514
County	San Diego
City	Unincorporated
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6209
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.13

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

Other Asphalt Surfaces	4.30	Acre	4.30	0.00	0.00	—	—	On- and off-site streets
Other Non-Asphalt Surfaces	2.40	Acre	2.40	0.00	0.00	—	—	Water retention basin
City Park	0.30	Acre	0.30	0.00	0.30	0.30	—	Recreation/communit y park
Single Family Housing	76.0	Dwelling Unit	18.3	148,200	890,177	—	212	Single family residential

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-15	Require All-Electric Development

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.69	32.9	36.5	0.08	1.29	4.20	5.49	1.18	1.58	2.76	9,813	0.41	0.30	3.83	9,917
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	28.9	33.0	36.3	0.08	1.29	8.16	9.43	1.18	4.07	5.23	9,800	0.41	0.30	0.10	9,900
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.83	11.1	13.4	0.03	0.43	1.12	1.55	0.39	0.46	0.85	3,073	0.13	0.09	0.64	3,105

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.52	2.02	2.45	< 0.005	0.08	0.20	0.28	0.07	0.08	0.16	509	0.02	0.02	0.11	514
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	250	550	250	—	—	100	—	—	55.0	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	250	550	250	—	—	100	—	—	55.0	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.69	32.9	36.5	0.08	1.29	4.20	5.49	1.18	1.58	2.76	9,813	0.41	0.30	3.83	9,917
2027	1.13	9.70	14.2	0.02	0.34	0.28	0.62	0.31	0.07	0.38	2,842	0.12	0.06	1.25	2,863
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.69	33.0	36.3	0.08	1.29	8.16	9.43	1.18	4.07	5.23	9,800	0.41	0.30	0.10	9,900
2027	1.13	9.73	14.0	0.02	0.34	0.28	0.62	0.31	0.07	0.38	2,829	0.12	0.06	0.03	2,848

2028	28.9	9.24	14.0	0.02	0.30	0.28	0.59	0.28	0.07	0.35	2,820	0.11	0.06	0.03	2,839
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.26	11.1	13.4	0.03	0.43	1.12	1.55	0.39	0.46	0.85	3,073	0.13	0.09	0.64	3,105
2027	0.81	6.95	10.0	0.02	0.24	0.20	0.44	0.22	0.05	0.27	2,022	0.08	0.04	0.38	2,036
2028	2.83	0.55	0.84	< 0.005	0.02	0.02	0.04	0.02	< 0.005	0.02	161	0.01	< 0.005	0.03	162
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.23	2.02	2.45	< 0.005	0.08	0.20	0.28	0.07	0.08	0.16	509	0.02	0.02	0.11	514
2027	0.15	1.27	1.83	< 0.005	0.04	0.04	0.08	0.04	0.01	0.05	335	0.01	0.01	0.06	337
2028	0.52	0.10	0.15	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	26.6	< 0.005	< 0.005	0.01	26.8

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.69	32.9	36.5	0.08	1.29	4.20	5.49	1.18	1.58	2.76	9,813	0.41	0.30	3.83	9,917
2027	1.13	9.70	14.2	0.02	0.34	0.28	0.62	0.31	0.07	0.38	2,842	0.12	0.06	1.25	2,863
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.69	33.0	36.3	0.08	1.29	8.16	9.43	1.18	4.07	5.23	9,800	0.41	0.30	0.10	9,900
2027	1.13	9.73	14.0	0.02	0.34	0.28	0.62	0.31	0.07	0.38	2,829	0.12	0.06	0.03	2,848
2028	28.9	9.24	14.0	0.02	0.30	0.28	0.59	0.28	0.07	0.35	2,820	0.11	0.06	0.03	2,839
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.26	11.1	13.4	0.03	0.43	1.12	1.55	0.39	0.46	0.85	3,073	0.13	0.09	0.64	3,105
2027	0.81	6.95	10.0	0.02	0.24	0.20	0.44	0.22	0.05	0.27	2,022	0.08	0.04	0.38	2,036

2028	2.83	0.55	0.84	< 0.005	0.02	0.02	0.04	0.02	< 0.005	0.02	161	0.01	< 0.005	0.03	162
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.23	2.02	2.45	< 0.005	0.08	0.20	0.28	0.07	0.08	0.16	509	0.02	0.02	0.11	514
2027	0.15	1.27	1.83	< 0.005	0.04	0.04	0.08	0.04	0.01	0.05	335	0.01	0.01	0.06	337
2028	0.52	0.10	0.15	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	26.6	< 0.005	< 0.005	0.01	26.8

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.80	2.13	21.5	0.03	0.03	1.37	1.40	0.06	0.24	0.30	5,158	2.69	0.19	10.9	5,292
Mit.	6.77	1.59	21.2	0.03	-0.01	1.37	1.36	0.02	0.24	0.26	4,464	2.63	0.19	10.9	4,596
% Reduced	< 0.5%	26%	1%	12%	135%	—	3%	72%	—	15%	13%	2%	1%	—	13%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.37	2.25	16.7	0.03	0.03	1.37	1.40	0.06	0.24	0.30	4,970	2.71	0.20	1.32	5,098
Mit.	6.34	1.70	16.4	0.02	-0.01	1.37	1.36	0.02	0.24	0.25	4,276	2.64	0.20	1.32	4,402
% Reduced	1%	24%	1%	12%	141%	—	3%	74%	—	15%	14%	2%	1%	—	14%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.52	2.24	18.7	0.03	0.03	1.37	1.40	0.06	0.24	0.30	4,993	2.69	0.20	5.31	5,125
Mit.	6.48	1.69	18.4	0.02	-0.01	1.37	1.36	0.02	0.24	0.25	4,299	2.63	0.20	5.31	4,429
% Reduced	< 0.5%	24%	1%	12%	138%	—	3%	73%	—	15%	14%	2%	1%	—	14%

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.19	0.41	3.41	0.01	0.01	0.25	0.26	0.01	0.04	0.05	827	0.45	0.03	0.88	848
Mit.	1.18	0.31	3.37	< 0.005	> -0.005	0.25	0.25	< 0.005	0.04	0.05	712	0.44	0.03	0.88	733
% Reduced	< 0.5%	24%	1%	12%	138%	—	3%	73%	—	15%	14%	2%	1%	—	14%
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	250	550	250	—	—	100	—	—	55.0	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—
Mit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	250	550	250	—	—	100	—	—	55.0	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—
Mit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	13.7	40.0	100	40.0	—	—	15.0	—	—	10.0	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	Yes
Mit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	Yes

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.95	1.57	16.9	0.04	0.03	1.41	1.44	0.03	0.25	0.28	4,050	0.21	0.17	9.85	4,115

Area	3.84	0.04	4.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.8	0.01	< 0.005	—	23.4
Energy	0.03	0.55	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	752	0.10	0.01	—	757
Water	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Waste	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Vegetation	-0.03	-0.03	—	-0.01	-0.04	-0.04	-0.08	-0.01	-0.01	-0.02	297	—	—	—	297
Total	6.80	2.13	21.5	0.03	0.03	1.37	1.40	0.06	0.24	0.30	5,158	2.69	0.19	10.9	5,292
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.90	1.73	16.4	0.04	0.03	1.41	1.44	0.03	0.25	0.28	3,873	0.23	0.18	0.26	3,933
Area	3.47	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	11.3	0.01	< 0.005	—	11.8
Energy	0.03	0.55	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	752	0.10	0.01	—	757
Water	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Waste	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Vegetation	-0.03	-0.03	—	-0.01	-0.04	-0.04	-0.08	-0.01	-0.01	-0.02	297	—	—	—	297
Total	6.37	2.25	16.7	0.03	0.03	1.37	1.40	0.06	0.24	0.30	4,970	2.71	0.20	1.32	5,098
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.86	1.70	16.3	0.04	0.03	1.41	1.44	0.03	0.25	0.28	3,900	0.23	0.18	4.25	3,962
Area	3.66	0.02	2.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	8.23	< 0.005	< 0.005	—	8.36
Energy	0.03	0.55	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	752	0.10	0.01	—	757
Water	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Waste	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Vegetation	-0.03	-0.03	—	-0.01	-0.04	-0.04	-0.08	-0.01	-0.01	-0.02	297	—	—	—	297
Total	6.52	2.24	18.7	0.03	0.03	1.37	1.40	0.06	0.24	0.30	4,993	2.69	0.20	5.31	5,125
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.52	0.31	2.98	0.01	0.01	0.26	0.26	< 0.005	0.05	0.05	646	0.04	0.03	0.70	656
Area	0.67	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.36	< 0.005	< 0.005	—	1.38
Energy	0.01	0.10	0.04	< 0.005	0.01	—	0.01	0.01	—	0.01	125	0.02	< 0.005	—	125
Water	—	—	—	—	—	—	—	—	—	—	2.98	0.09	< 0.005	—	5.87
Waste	—	—	—	—	—	—	—	—	—	—	3.03	0.30	0.00	—	10.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18
Vegetation	> -0.005	> -0.005	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	> -0.005	49.1	—	—	—	49.1
Total	1.19	0.41	3.41	0.01	0.01	0.25	0.26	0.01	0.04	0.05	827	0.45	0.03	0.88	848

2.6. Operations Emissions by Sector, Mitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.95	1.57	16.9	0.04	0.03	1.41	1.44	0.03	0.25	0.28	4,050	0.21	0.17	9.85	4,115
Area	3.84	0.04	4.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.8	0.01	< 0.005	—	23.4
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	58.1	0.04	0.01	—	60.7
Water	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Waste	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Vegetation	-0.03	-0.03	—	-0.01	-0.04	-0.04	-0.08	-0.01	-0.01	-0.02	297	—	—	—	297
Total	6.77	1.59	21.2	0.03	-0.01	1.37	1.36	0.02	0.24	0.26	4,464	2.63	0.19	10.9	4,596
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.90	1.73	16.4	0.04	0.03	1.41	1.44	0.03	0.25	0.28	3,873	0.23	0.18	0.26	3,933
Area	3.47	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	11.3	0.01	< 0.005	—	11.8
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	58.1	0.04	0.01	—	60.7

Water	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Waste	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Vegetation	-0.03	-0.03	—	-0.01	-0.04	-0.04	-0.08	-0.01	-0.01	-0.02	297	—	—	—	297
Total	6.34	1.70	16.4	0.02	-0.01	1.37	1.36	0.02	0.24	0.25	4,276	2.64	0.20	1.32	4,402
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.86	1.70	16.3	0.04	0.03	1.41	1.44	0.03	0.25	0.28	3,900	0.23	0.18	4.25	3,962
Area	3.66	0.02	2.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	8.23	< 0.005	< 0.005	—	8.36
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	58.1	0.04	0.01	—	60.7
Water	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Waste	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Vegetation	-0.03	-0.03	—	-0.01	-0.04	-0.04	-0.08	-0.01	-0.01	-0.02	297	—	—	—	297
Total	6.48	1.69	18.4	0.02	-0.01	1.37	1.36	0.02	0.24	0.25	4,299	2.63	0.20	5.31	4,429
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.52	0.31	2.98	0.01	0.01	0.26	0.26	< 0.005	0.05	0.05	646	0.04	0.03	0.70	656
Area	0.67	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.36	< 0.005	< 0.005	—	1.38
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	9.61	0.01	< 0.005	—	10.0
Water	—	—	—	—	—	—	—	—	—	—	2.98	0.09	< 0.005	—	5.87
Waste	—	—	—	—	—	—	—	—	—	—	3.03	0.30	0.00	—	10.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18
Vegetation	> -0.005	> -0.005	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	> -0.005	49.1	—	—	—	49.1
Total	1.18	0.31	3.37	< 0.005	> -0.005	0.25	0.25	< 0.005	0.04	0.05	712	0.44	0.03	0.88	733

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.14	29.2	28.8	0.05	1.24	—	1.24	1.14	—	1.14	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	1.60	1.58	< 0.005	0.07	—	0.07	0.06	—	0.06	290	0.01	< 0.005	—	291
Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.22	0.22	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.29	0.29	< 0.005	0.01	—	0.01	0.01	—	0.01	48.1	< 0.005	< 0.005	—	48.2
Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.67	0.00	0.00	0.15	0.15	0.00	0.03	0.03	154	0.01	0.01	0.01	156
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	1.72	0.64	0.01	0.02	0.34	0.36	0.02	0.09	0.11	1,288	0.06	0.21	0.07	1,351
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.49	< 0.005	< 0.005	0.01	8.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	70.5	< 0.005	0.01	0.06	74.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.41	< 0.005	< 0.005	< 0.005	1.43
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.7	< 0.005	< 0.005	0.01	12.3

3.2. Site Preparation (2026) - Mitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.14	29.2	28.8	0.05	1.24	—	1.24	1.14	—	1.14	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	1.60	1.58	< 0.005	0.07	—	0.07	0.06	—	0.06	290	0.01	< 0.005	—	291
Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.22	0.22	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.29	0.29	< 0.005	0.01	—	0.01	0.01	—	0.01	48.1	< 0.005	< 0.005	—	48.2
Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.67	0.00	0.00	0.15	0.15	0.00	0.03	0.03	154	0.01	0.01	0.01	156

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	1.72	0.64	0.01	0.02	0.34	0.36	0.02	0.09	0.11	1,288	0.06	0.21	0.07	1,351
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.49	< 0.005	< 0.005	0.01	8.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	70.5	< 0.005	0.01	0.06	74.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.41	< 0.005	< 0.005	< 0.005	1.43
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.7	< 0.005	< 0.005	0.01	12.3

3.3. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.56	31.0	34.6	0.08	1.26	—	1.26	1.16	—	1.16	8,151	0.33	0.07	—	8,179
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.56	31.0	34.6	0.08	1.26	—	1.26	1.16	—	1.16	8,151	0.33	0.07	—	8,179

Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	3.83	4.26	0.01	0.16	—	0.16	0.14	—	0.14	1,005	0.04	0.01	—	1,008
Dust From Material Movement	—	—	—	—	—	0.44	0.44	—	0.18	0.18	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.70	0.78	< 0.005	0.03	—	0.03	0.03	—	0.03	166	0.01	< 0.005	—	167
Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.03	0.03	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	1.19	0.00	0.00	0.23	0.23	0.00	0.05	0.05	256	0.01	0.01	0.89	260
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	1.81	0.70	0.01	0.03	0.37	0.40	0.02	0.10	0.12	1,407	0.07	0.23	2.94	1,479
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.05	0.00	0.00	0.23	0.23	0.00	0.05	0.05	241	0.01	0.01	0.02	245

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	1.88	0.70	0.01	0.03	0.37	0.40	0.02	0.10	0.12	1,407	0.07	0.23	0.08	1,477
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	30.0	< 0.005	< 0.005	0.05	30.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.23	0.09	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	173	0.01	0.03	0.16	182
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	4.97	< 0.005	< 0.005	0.01	5.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	28.7	< 0.005	< 0.005	0.03	30.2

3.4. Grading (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.56	31.0	34.6	0.08	1.26	—	1.26	1.16	—	1.16	8,151	0.33	0.07	—	8,179
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.56	31.0	34.6	0.08	1.26	—	1.26	1.16	—	1.16	8,151	0.33	0.07	—	8,179

Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	3.83	4.26	0.01	0.16	—	0.16	0.14	—	0.14	1,005	0.04	0.01	—	1,008
Dust From Material Movement	—	—	—	—	—	0.44	0.44	—	0.18	0.18	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.70	0.78	< 0.005	0.03	—	0.03	0.03	—	0.03	166	0.01	< 0.005	—	167
Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.03	0.03	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	1.19	0.00	0.00	0.23	0.23	0.00	0.05	0.05	256	0.01	0.01	0.89	260
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	1.81	0.70	0.01	0.03	0.37	0.40	0.02	0.10	0.12	1,407	0.07	0.23	2.94	1,479
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.05	0.00	0.00	0.23	0.23	0.00	0.05	0.05	241	0.01	0.01	0.02	245

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	1.88	0.70	0.01	0.03	0.37	0.40	0.02	0.10	0.12	1,407	0.07	0.23	0.08	1,477
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	30.0	< 0.005	< 0.005	0.05	30.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.23	0.09	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	173	0.01	0.03	0.16	182
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	4.97	< 0.005	< 0.005	0.01	5.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	28.7	< 0.005	< 0.005	0.03	30.2

3.5. Building Construction (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	4.34	5.71	0.01	0.17	—	0.17	0.15	—	0.15	1,056	0.04	0.01	—	1,059
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.79	1.04	< 0.005	0.03	—	0.03	0.03	—	0.03	175	0.01	< 0.005	—	175
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	1.18	0.00	0.00	0.23	0.23	0.00	0.05	0.05	254	0.01	0.01	0.89	258
Vendor	0.01	0.26	0.12	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	200	0.01	0.03	0.49	209
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.04	0.00	0.00	0.23	0.23	0.00	0.05	0.05	240	0.01	0.01	0.02	243
Vendor	0.01	0.27	0.12	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	200	0.01	0.03	0.01	208
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	107	0.01	< 0.005	0.17	108
Vendor	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	87.9	< 0.005	0.01	0.09	91.9
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	17.7	< 0.005	< 0.005	0.03	17.9

Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	14.6	< 0.005	< 0.005	0.02	15.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.6. 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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	4.34	5.71	0.01	0.17	—	0.17	0.15	—	0.15	1,056	0.04	0.01	—	1,059
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.79	1.04	< 0.005	0.03	—	0.03	0.03	—	0.03	175	0.01	< 0.005	—	175
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	1.18	0.00	0.00	0.23	0.23	0.00	0.05	0.05	254	0.01	0.01	0.89	258
Vendor	0.01	0.26	0.12	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	200	0.01	0.03	0.49	209
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.04	0.00	0.00	0.23	0.23	0.00	0.05	0.05	240	0.01	0.01	0.02	243
Vendor	0.01	0.27	0.12	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	200	0.01	0.03	0.01	208
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	107	0.01	< 0.005	0.17	108
Vendor	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	87.9	< 0.005	0.01	0.09	91.9
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	17.7	< 0.005	< 0.005	0.03	17.9
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	14.6	< 0.005	< 0.005	0.02	15.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

Off-Road Equipment	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.07	1.12	0.00	0.00	0.23	0.23	0.00	0.05	0.05	250	0.01	0.01	0.81	254
Vendor	0.01	0.25	0.12	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	195	0.01	0.03	0.44	204
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.98	0.00	0.00	0.23	0.23	0.00	0.05	0.05	236	0.01	0.01	0.02	239

Vendor	0.01	0.26	0.12	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	195	0.01	0.03	0.01	204
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	170	0.01	0.01	0.25	173
Vendor	< 0.005	0.18	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	140	0.01	0.02	0.13	146
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	28.2	< 0.005	< 0.005	0.04	28.6
Vendor	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	23.1	< 0.005	< 0.005	0.02	24.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.8. 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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.07	1.12	0.00	0.00	0.23	0.23	0.00	0.05	0.05	250	0.01	0.01	0.81	254
Vendor	0.01	0.25	0.12	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	195	0.01	0.03	0.44	204
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.98	0.00	0.00	0.23	0.23	0.00	0.05	0.05	236	0.01	0.01	0.02	239
Vendor	0.01	0.26	0.12	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	195	0.01	0.03	0.01	204
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	170	0.01	0.01	0.25	173
Vendor	< 0.005	0.18	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	140	0.01	0.02	0.13	146
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	28.2	< 0.005	< 0.005	0.04	28.6

Vendor	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	23.1	< 0.005	< 0.005	0.02	24.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.45	0.66	< 0.005	0.02	—	0.02	0.01	—	0.01	122	< 0.005	< 0.005	—	122
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	20.2	< 0.005	< 0.005	—	20.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.93	0.00	0.00	0.23	0.23	0.00	0.05	0.05	232	< 0.005	0.01	0.02	235
Vendor	0.01	0.24	0.11	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	191	0.01	0.03	0.01	199
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.9	< 0.005	< 0.005	0.02	12.1
Vendor	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.69	< 0.005	< 0.005	0.01	10.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.97	< 0.005	< 0.005	< 0.005	2.00
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.60	< 0.005	< 0.005	< 0.005	1.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.45	0.66	< 0.005	0.02	—	0.02	0.01	—	0.01	122	< 0.005	< 0.005	—	122
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	20.2	< 0.005	< 0.005	—	20.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.93	0.00	0.00	0.23	0.23	0.00	0.05	0.05	232	< 0.005	0.01	0.02	235
Vendor	0.01	0.24	0.11	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	191	0.01	0.03	0.01	199
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.9	< 0.005	< 0.005	0.02	12.1
Vendor	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.69	< 0.005	< 0.005	0.01	10.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.97	< 0.005	< 0.005	< 0.005	2.00
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.60	< 0.005	< 0.005	< 0.005	1.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	1,511	0.06	0.01	—	1,516
Paving	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.68	0.95	< 0.005	0.03	—	0.03	0.03	—	0.03	145	0.01	< 0.005	—	145
Paving	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	24.0	< 0.005	< 0.005	—	24.1
Paving	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.05	0.04	0.65	0.00	0.00	0.13	0.13	0.00	0.03	0.03	139	0.01	< 0.005	0.49	142
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.18	0.45	0.01	0.02	0.24	0.26	0.01	0.07	0.08	914	0.05	0.15	1.91	961
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	12.7	< 0.005	< 0.005	0.02	12.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.12	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	87.7	< 0.005	0.01	0.08	92.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.11	< 0.005	< 0.005	< 0.005	2.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	14.5	< 0.005	< 0.005	0.01	15.2

3.12. Paving (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	1,511	0.06	0.01	—	1,516
Paving	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.68	0.95	< 0.005	0.03	—	0.03	0.03	—	0.03	145	0.01	< 0.005	—	145
Paving	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	24.0	< 0.005	< 0.005	—	24.1
Paving	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.65	0.00	0.00	0.13	0.13	0.00	0.03	0.03	139	0.01	< 0.005	0.49	142
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.18	0.45	0.01	0.02	0.24	0.26	0.01	0.07	0.08	914	0.05	0.15	1.91	961
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	12.7	< 0.005	< 0.005	0.02	12.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.12	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	87.7	< 0.005	0.01	0.08	92.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.11	< 0.005	< 0.005	< 0.005	2.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	14.5	< 0.005	< 0.005	0.01	15.2

3.13. 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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	134	0.01	< 0.005	—	134
Architectural Coatings	28.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	12.8	< 0.005	< 0.005	—	12.8
Architectural Coatings	2.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.12	< 0.005	< 0.005	—	2.13
Architectural Coatings	0.50	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.19	0.00	0.00	0.05	0.05	0.00	0.01	0.01	46.4	< 0.005	< 0.005	< 0.005	47.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.49	< 0.005	< 0.005	0.01	4.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.74	< 0.005	< 0.005	< 0.005	0.75
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	134	0.01	< 0.005	—	134
Architectural Coatings	28.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	12.8	< 0.005	< 0.005	—	12.8
Architectural Coatings	2.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.12	< 0.005	< 0.005	—	2.13
Architectural Coatings	0.50	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.19	0.00	0.00	0.05	0.05	0.00	0.01	0.01	46.4	< 0.005	< 0.005	< 0.005	47.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.49	< 0.005	< 0.005	0.01	4.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.74	< 0.005	< 0.005	< 0.005	0.75
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	57.7	0.04	0.01	—	60.2
Total	—	—	—	—	—	—	—	—	—	—	57.7	0.04	0.01	—	60.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	57.7	0.04	0.01	—	60.2
Total	—	—	—	—	—	—	—	—	—	—	57.7	0.04	0.01	—	60.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	9.55	0.01	< 0.005	—	9.97
Total	—	—	—	—	—	—	—	—	—	—	9.55	0.01	< 0.005	—	9.97

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	58.1	0.04	0.01	—	60.7
Total	—	—	—	—	—	—	—	—	—	—	58.1	0.04	0.01	—	60.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	58.1	0.04	0.01	—	60.7
Total	—	—	—	—	—	—	—	—	—	—	58.1	0.04	0.01	—	60.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	9.61	0.01	< 0.005	—	10.0
Total	—	—	—	—	—	—	—	—	—	—	9.61	0.01	< 0.005	—	10.0

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

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

City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	0.03	0.55	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	695	0.06	< 0.005	—	697
Total	0.03	0.55	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	695	0.06	< 0.005	—	697
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Other Non-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
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	0.03	0.55	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	695	0.06	< 0.005	—	697
Total	0.03	0.55	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	695	0.06	< 0.005	—	697
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Other Non-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
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	0.01	0.10	0.04	< 0.005	0.01	—	0.01	0.01	—	0.01	115	0.01	< 0.005	—	115
Total	0.01	0.10	0.04	< 0.005	0.01	—	0.01	0.01	—	0.01	115	0.01	< 0.005	—	115

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Other Non-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
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Other Non-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
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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

Other Non-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
City Park	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Single Family Housing	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

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	11.3	0.01	< 0.005	—	11.8
Consumer Products	3.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.37	0.04	4.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.5	< 0.005	< 0.005	—	11.6
Total	3.84	0.04	4.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.8	0.01	< 0.005	—	23.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	11.3	0.01	< 0.005	—	11.8
Consumer Products	3.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectur Coatings	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3.47	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	11.3	0.01	< 0.005	—	11.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.42	< 0.005	< 0.005	—	0.44
Consumer Products	0.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.94	< 0.005	< 0.005	—	0.94
Total	0.67	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.36	< 0.005	< 0.005	—	1.38

4.3.1. Mitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	11.3	0.01	< 0.005	—	11.8
Consumer Products	3.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.37	0.04	4.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	11.5	< 0.005	< 0.005	—	11.6
Total	3.84	0.04	4.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.8	0.01	< 0.005	—	23.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	11.3	0.01	< 0.005	—	11.8
Consumer Products	3.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3.47	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	11.3	0.01	< 0.005	—	11.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.42	< 0.005	< 0.005	—	0.44
Consumer Products	0.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.94	< 0.005	< 0.005	—	0.94
Total	0.67	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.36	< 0.005	< 0.005	—	1.38

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00

City Park	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	—	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Total	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	—	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Total	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	—	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	2.98	0.09	< 0.005	—	5.87
Total	—	—	—	—	—	—	—	—	—	—	2.98	0.09	< 0.005	—	5.87

4.4.1. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	—	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Total	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	—	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Total	—	—	—	—	—	—	—	—	—	—	18.0	0.53	0.01	—	35.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	—	< 0.005
Single Family Housing	—	—	—	—	—	—	—	—	—	—	2.98	0.09	< 0.005	—	5.87
Total	—	—	—	—	—	—	—	—	—	—	2.98	0.09	< 0.005	—	5.87

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	0.01	< 0.005	0.00	—	0.05
Single Family Housing	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Total	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	0.01	< 0.005	0.00	—	0.05
Single Family Housing	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Total	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	0.00	—	0.01
Single Family Housing	—	—	—	—	—	—	—	—	—	—	3.03	0.30	0.00	—	10.6
Total	—	—	—	—	—	—	—	—	—	—	3.03	0.30	0.00	—	10.6

4.5.1. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	0.01	< 0.005	0.00	—	0.05
Single Family Housing	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Total	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	0.01	< 0.005	0.00	—	0.05
Single Family Housing	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Total	—	—	—	—	—	—	—	—	—	—	18.3	1.83	0.00	—	64.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	0.00	—	0.01
Single Family Housing	—	—	—	—	—	—	—	—	—	—	3.03	0.30	0.00	—	10.6
Total	—	—	—	—	—	—	—	—	—	—	3.03	0.30	0.00	—	10.6

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18

4.6.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06	1.06
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	0.18	0.18

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e

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

4.8.2. Mitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Forest	—	—	—	—	—	—	—	—	—	—	93.1	—	—	—	93.1
Total	—	—	—	—	—	—	—	—	—	—	93.1	—	—	—	93.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Forest	—	—	—	—	—	—	—	—	—	—	93.1	—	—	—	93.1
Total	—	—	—	—	—	—	—	—	—	—	93.1	—	—	—	93.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Forest	—	—	—	—	—	—	—	—	—	—	15.4	—	—	—	15.4
Total	—	—	—	—	—	—	—	—	—	—	15.4	—	—	—	15.4

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	452	—	—	—	452
Total	—	—	—	—	—	—	—	—	—	—	452	—	—	—	452
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	452	—	—	—	452
Total	—	—	—	—	—	—	—	—	—	—	452	—	—	—	452
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Shrubland	—	—	—	—	—	—	—	—	—	—	74.8	—	—	—	74.8
Total	—	—	—	—	—	—	—	—	—	—	74.8	—	—	—	74.8

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	-0.03	> -0.005	—	-0.01	-0.03	-0.03	-0.06	-0.01	-0.01	-0.02	-49.3	—	—	—	-49.3
Subtotal	-0.03	> -0.005	—	-0.01	-0.03	-0.03	-0.06	-0.01	-0.01	-0.02	-49.3	—	—	—	-49.3
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	—	—	—	—	—	—	—	—	—	-199	—	—	—	-199
Subtotal	—	—	—	—	—	—	—	—	—	—	-199	—	—	—	-199
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	-0.02	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	-0.01	—	—	—	—	—
Subtotal	—	-0.02	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	-0.01	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	-0.03	-0.03	—	-0.01	-0.04	-0.04	-0.08	-0.01	-0.01	-0.02	-248	—	—	—	-248
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	-0.03	> -0.005	—	-0.01	-0.03	-0.03	-0.06	-0.01	-0.01	-0.02	-49.3	—	—	—	-49.3
Subtotal	-0.03	> -0.005	—	-0.01	-0.03	-0.03	-0.06	-0.01	-0.01	-0.02	-49.3	—	—	—	-49.3
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

undefined	—	—	—	—	—	—	—	—	—	—	-199	—	—	—	-199
Subtotal	—	—	—	—	—	—	—	—	—	—	-199	—	—	—	-199
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	-0.02	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	-0.01	—	—	—	—	—
Subtotal	—	-0.02	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	-0.01	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	-0.03	-0.03	—	-0.01	-0.04	-0.04	-0.08	-0.01	-0.01	-0.02	-248	—	—	—	-248
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	> -0.005	> -0.005	—	> -0.005	-0.01	-0.01	-0.01	> -0.005	> -0.005	> -0.005	-8.16	—	—	—	-8.16
Subtotal	> -0.005	> -0.005	—	> -0.005	-0.01	-0.01	-0.01	> -0.005	> -0.005	> -0.005	-8.16	—	—	—	-8.16
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	—	—	—	—	—	—	—	—	—	-33.0	—	—	—	-33.0
Subtotal	—	—	—	—	—	—	—	—	—	—	-33.0	—	—	—	-33.0
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	> -0.005	—	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	—	—	—	—
Subtotal	—	> -0.005	—	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	> -0.005	> -0.005	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	> -0.005	-41.1	—	—	—	-41.1

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Forest	—	—	—	—	—	—	—	—	—	—	93.1	—	—	—	93.1

Total	—	—	—	—	—	—	—	—	—	—	93.1	—	—	—	93.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Forest	—	—	—	—	—	—	—	—	—	—	93.1	—	—	—	93.1
Total	—	—	—	—	—	—	—	—	—	—	93.1	—	—	—	93.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Forest	—	—	—	—	—	—	—	—	—	—	15.4	—	—	—	15.4
Total	—	—	—	—	—	—	—	—	—	—	15.4	—	—	—	15.4

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

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	452	—	—	—	452
Total	—	—	—	—	—	—	—	—	—	—	452	—	—	—	452
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	452	—	—	—	452
Total	—	—	—	—	—	—	—	—	—	—	452	—	—	—	452
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	74.8	—	—	—	74.8
Total	—	—	—	—	—	—	—	—	—	—	74.8	—	—	—	74.8

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	-0.03	> -0.005	—	-0.01	-0.03	-0.03	-0.06	-0.01	-0.01	-0.02	-49.3	—	—	—	-49.3
Subtotal	-0.03	> -0.005	—	-0.01	-0.03	-0.03	-0.06	-0.01	-0.01	-0.02	-49.3	—	—	—	-49.3
Sequester ed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	—	—	—	—	—	—	—	—	—	-199	—	—	—	-199
Subtotal	—	—	—	—	—	—	—	—	—	—	-199	—	—	—	-199
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	-0.02	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	-0.01	—	—	—	—	—
Subtotal	—	-0.02	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	-0.01	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	-0.03	-0.03	—	-0.01	-0.04	-0.04	-0.08	-0.01	-0.01	-0.02	-248	—	—	—	-248
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	-0.03	> -0.005	—	-0.01	-0.03	-0.03	-0.06	-0.01	-0.01	-0.02	-49.3	—	—	—	-49.3
Subtotal	-0.03	> -0.005	—	-0.01	-0.03	-0.03	-0.06	-0.01	-0.01	-0.02	-49.3	—	—	—	-49.3
Sequester ed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	—	—	—	—	—	—	—	—	—	-199	—	—	—	-199
Subtotal	—	—	—	—	—	—	—	—	—	—	-199	—	—	—	-199
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	-0.02	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	-0.01	—	—	—	—	—
Subtotal	—	-0.02	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	-0.01	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	-0.03	-0.03	—	-0.01	-0.04	-0.04	-0.08	-0.01	-0.01	-0.02	-248	—	—	—	-248
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	> -0.005	> -0.005	—	> -0.005	-0.01	-0.01	-0.01	> -0.005	> -0.005	> -0.005	-8.16	—	—	—	-8.16
Subtotal	> -0.005	> -0.005	—	> -0.005	-0.01	-0.01	-0.01	> -0.005	> -0.005	> -0.005	-8.16	—	—	—	-8.16
Sequester ed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	—	—	—	—	—	—	—	—	—	-33.0	—	—	—	-33.0
Subtotal	—	—	—	—	—	—	—	—	—	—	-33.0	—	—	—	-33.0
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
undefined	—	> -0.005	—	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	—	—	—	—
Subtotal	—	> -0.005	—	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	> -0.005	> -0.005	—	> -0.005	-0.01	-0.01	-0.02	> -0.005	> -0.005	> -0.005	-41.1	—	—	—	-41.1

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2026	1/28/2026	5.00	20.0	—
Grading	Grading	1/29/2026	4/1/2026	5.00	45.0	—
Building Construction	Building Construction	5/21/2026	1/26/2028	5.00	440	—
Paving	Paving	4/2/2026	5/20/2026	5.00	35.0	—
Architectural Coating	Architectural Coating	1/27/2028	3/15/2028	5.00	35.0	—

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
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	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Grading	Off-Highway Trucks	Diesel	Average	1.00	4.00	376	0.38
Grading	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
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	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
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
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40

Site Preparation	Tractors/Loaders/Backh	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Grading	Off-Highway Trucks	Diesel	Average	1.00	4.00	376	0.38
Grading	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
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	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
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

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	12.0	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.63	HHDT,MHDT

Site Preparation	Hauling	18.3	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	27.5	12.0	LDA,LDT1,LDT2
Grading	Vendor	—	7.63	HHDT,MHDT
Grading	Hauling	20.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	27.4	12.0	LDA,LDT1,LDT2
Building Construction	Vendor	8.12	7.63	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	12.0	LDA,LDT1,LDT2
Paving	Vendor	—	7.63	HHDT,MHDT
Paving	Hauling	13.0	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	5.47	12.0	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.63	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
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	12.0	LDA,LDT1,LDT2

Site Preparation	Vendor	—	7.63	HHDT,MHDT
Site Preparation	Hauling	18.3	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	27.5	12.0	LDA,LDT1,LDT2
Grading	Vendor	—	7.63	HHDT,MHDT
Grading	Hauling	20.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	27.4	12.0	LDA,LDT1,LDT2
Building Construction	Vendor	8.12	7.63	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	12.0	LDA,LDT1,LDT2
Paving	Vendor	—	7.63	HHDT,MHDT
Paving	Hauling	13.0	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	5.47	12.0	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.63	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	300,105	100,035	0.00	0.00	17,511

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	3,700	30.0	0.00	—
Grading	7,200	—	135	0.00	—
Paving	0.00	0.00	0.00	0.00	7.54

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Asphalt Surfaces	4.30	100%
Other Non-Asphalt Surfaces	2.40	0%

City Park	0.00	0%
Single Family Housing	0.84	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	45.1	0.03	< 0.005
2027	0.00	45.1	0.03	< 0.005
2028	0.00	45.1	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
Total all Land Uses	914	914	914	333,610	5,129	5,129	5,129	1,871,903

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	914	914	914	333,610	5,129	5,129	5,129	1,871,903

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—

Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	76
No Fireplaces	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)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	76
No Fireplaces	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)
300105	100,035	0.00	0.00	17,511

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)
Other Asphalt Surfaces	0.00	45.1	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	45.1	0.0330	0.0040	0.00
City Park	0.00	45.1	0.0330	0.0040	0.00
Single Family Housing	466,737	45.1	0.0330	0.0040	2,167,287

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)
Other Asphalt Surfaces	0.00	45.1	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	45.1	0.0330	0.0040	0.00
City Park	0.00	45.1	0.0330	0.0040	0.00

Single Family Housing	469,963	45.1	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)
Other Asphalt Surfaces	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00
City Park	0.00	9.96
Single Family Housing	2,670,114	16,259,162

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Asphalt Surfaces	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00
City Park	0.00	9.96
Single Family Housing	2,670,114	16,259,162

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Asphalt Surfaces	0.00	—
Other Non-Asphalt Surfaces	0.00	—
City Park	0.03	—
Single Family Housing	33.9	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Asphalt Surfaces	0.00	—
Other Non-Asphalt Surfaces	0.00	—
City Park	0.03	—
Single Family Housing	33.9	—

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
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	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
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
Forest	>70% Sand	31.4	0.00

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
Forest	>70% Sand	31.4	0.00

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
Shrubland	31.4	0.00

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres
Shrubland	31.4	0.00

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
—	299	550,488	1,775

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
—	299	550,488	1,775

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	12.2	annual days of extreme heat
Extreme Precipitation	3.70	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	4.94	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A

Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	40.0
AQ-PM	15.2
AQ-DPM	17.9
Drinking Water	50.8
Lead Risk Housing	3.45
Pesticides	70.5
Toxic Releases	13.3
Traffic	22.1
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	27.8
Haz Waste Facilities/Generators	82.0
Impaired Water Bodies	98.1
Solid Waste	52.9
Sensitive Population	—
Asthma	1.26
Cardio-vascular	5.16
Low Birth Weights	31.7
Socioeconomic Factor Indicators	—
Education	10.3
Housing	13.9

Linguistic	32.0
Poverty	21.3
Unemployment	45.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	73.59168485
Employed	27.11407674
Median HI	94.16142692
Education	—
Bachelor's or higher	88.42551007
High school enrollment	100
Preschool enrollment	13.69177467
Transportation	—
Auto Access	96.70216861
Active commuting	25.31759271
Social	—
2-parent households	58.47555499
Voting	94.45656358
Neighborhood	—
Alcohol availability	90.33748236
Park access	37.89298088
Retail density	9.624021558
Supermarket access	30.5787245
Tree canopy	59.52778134

Housing	—
Homeownership	74.16912614
Housing habitability	81.09842166
Low-inc homeowner severe housing cost burden	56.97420762
Low-inc renter severe housing cost burden	71.07660721
Uncrowded housing	71.88502502
Health Outcomes	—
Insured adults	82.81791351
Arthritis	67.1
Asthma ER Admissions	98.4
High Blood Pressure	79.9
Cancer (excluding skin)	42.8
Asthma	58.2
Coronary Heart Disease	83.6
Chronic Obstructive Pulmonary Disease	71.2
Diagnosed Diabetes	89.0
Life Expectancy at Birth	73.9
Cognitively Disabled	90.0
Physically Disabled	80.2
Heart Attack ER Admissions	97.8
Mental Health Not Good	66.0
Chronic Kidney Disease	85.5
Obesity	66.6
Pedestrian Injuries	39.5
Physical Health Not Good	81.0
Stroke	84.7
Health Risk Behaviors	—

Binge Drinking	11.3
Current Smoker	73.9
No Leisure Time for Physical Activity	84.4
Climate Change Exposures	—
Wildfire Risk	61.0
SLR Inundation Area	0.0
Children	69.7
Elderly	59.3
English Speaking	72.4
Foreign-born	17.6
Outdoor Workers	77.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	83.3
Traffic Density	18.1
Traffic Access	23.0
Other Indices	—
Hardship	19.0
Other Decision Support	—
2016 Voting	95.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	12.0
Healthy Places Index Score for Project Location (b)	79.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	From the project description: The project consists of a Tentative Map, Density Bonus Permit, and an Administrative Permit for the 89.23 acre site. The project would provide for development of 76 single-family residential homes on 18.3 acres, recreation/community park uses on 0.3 acres, open space on 63.9 acres, internal streets and external road improvements totaling approximately 4.3 acres, and water quality detention basins on 2.4 acres.
Construction: Construction Phases	No demolition. Other phase durations based on CalEEMod default.
Construction: Off-Road Equipment	Bore/Drill Rig added to grading phase for the drilling of holes for blasting. Blasting emissions calculated off-model
Operations: Hearths	All electric fire places. No wood stoves.
Operations: Solid Waste	Solid waste 0.46 ton/yr/DU per CIWMB, includes AB341 requirements.
Construction: Trips and VMT	13 trips per day for delivery of asphalt/concrete during paving.

Appendix B

Drilling and Blasting Calculations

Drilling and Blasting

ID	Source	holes/blast	Blast Frequency blasts/day	blasts/month	blasts/year	Tons ANFO/Blast
B-1	Blasting Activity	100	1	4	7	1.25

Dust - PM10

ID	Source	Area (ft2)	PM10 EF Drilling (lb/hole)	PM2.5 EF Drilling (lb/hole)	Drilling Control Efficiency	PM10 EF Blasting (lb/blast)	PM2.5 EF Blasting (lb/blast)	PM10 Emissions lb/day	PM10 Emissions TPY	PM2.5 Emissions lb/day	PM2.5 Emissions TPY
B-1	Blasting	10,000	-	-	-	7.28	0.42	7.28	0.03	0.42	0.00147
D-1	Drilling	10,000	0.65	0.12	75%	-	-	2.60	0.06	0.48	0.0105
							Total	9.88	0.08	0.90	0.01

Notes:

1. Emissions Factor Source: AP-42 5th Edition, Section 11.9, Table 11.9-4, October 1998. Assumes PM10 = TSP/2 = 1.3 lbs/hole / 2 = 0.65 lb/hole.
2. Emissions factor for PM2.5 is calculated based on a similar mechanical process for aggreagte roock crushing. The emission factors for tertiary rock crushing will be used, based on AP-42 11.19.2, Table 11.19.2-2, Final Section, updated August 2004. The tertiary crushing emission factor for PM10 is 0.00054 lb/ton and the emissions factor for PM2.5 us 0.00010 lb/ton. The ratio of PM2.5 to PM10 is 0.00010/0.00054 = 0.185. Since the PM10 emission factor is estimated to be 0.65 lb/hole (see note 1), the emission factor for PM2.5 is estimated to be 0.65 lb/hole x 0.185 = 0.12 lb/hole.
3. Control Efficiency estimated to be between 63% and 88%, based on drill rotoclone or similar dust shroud device. Assumed midpoint of range reported.
4. AP-42 5th Edition, Section 11.9, Table 11.9-1. Also referenced Appendix E.2 of Background document to AP-42 5th Edition, Section 11.9.

PM10 EF = $0.000014(A)^{1.5}(0.52)$, where A = horizontal area in ft2 with a scaling factor for $\leq$10um of 0.52

PM2.5 EF = $0.000014(A)^{1.5}(0.03)$, where A = horizontal area in ft2 with a scaling factor for $\leq$2.5um of 0.03

5. Daily drilling emissions based on ability to drill two holes per hour per drill rig for up to 8 hours per day with one drill rig.

Blasting Gases - ANFO Emission Factors

ID	Source	CO EF lb/ton	NOX EF lb/ton	SOx EF lb/ton	CO2 EF lb/ton	CH4 EF lb/ton	N2O EF lb/ton
B-1	Blasting Activity	67	17	2	566	0.02	0.005

Blasting Gases - ANFO Emission Rates Criteria Pollutants

ID	Emissions	CO (lb/day)	CO (TPY)	NOx (lb/day)	NOx (TPY)	SOx (lb/day)	SOx (TPY)
B-1	Blasting Activity	83.75	0.29	21.25	0.07	2.50	0.01

Blasting Gases - ANFO Emission Rates Greenhouse Gases

ID	Emissions	CO2 (lb/day)	CO2 (TPY)	CH4 (lb/day)	CH4 (TPY)	N2O (lb/day)	N2O (TPY)
B-1	Blasting Activity	707.50	2.48	0.03	0.0001	0.0063	0.0438
Total CO2e (MT per year)		15.73					

Notes:

1. Emission Factor Source: AP-42 5th Edition, Section 13.3, Table 13.3-1, February 1980, ND = no data.

Uncontrolled CO2, CH4, and N2O emissions are calculated using the emission factors of 73.96 kg/MMBtu, $3*10^{3}$ kg/MMBtu, and $6*10^{-4}$ kg/MMBtu, respectively, from 40 CFR 98, Tables C-1 and C-2 for distillate fuel oil No. 2. A diesel fuel oil to ammonium nitrate ratio of 9% and a diesel heating value of 19,300 Btu/pound of diesel fuel were used to express the CO2, CH4, and N2O emission factors in terms of lb/ton of ANFO.