Appendix A

Air Quality Technical Report

Lusk on Lusk Project

Air Quality Technical Report

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Acronyms and Abbreviations

ADT	average daily trips
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
City	City of San Diego
CO	carbon monoxide
County	County of San Diego
CY	cubic yard(s)
DPM	diesel particulate matter
hp	horsepower
I-	Interstate
LLG	Linscott, Law, & Greenspan Engineers
LOS	level of service
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NO	nitrogen monoxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	ozone
PM	particulate matter
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
RAQS	Regional Air Quality Strategy
ROG	reactive organic gas
SANDAG	San Diego Association of Governments
SDAB	San Diego Air Basin
SDAPCD	San Diego County Air Pollution Control District
SF	square feet

Acronyms and Abbreviations (cont.)

SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
TAC	toxic air contaminant
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality impacts during construction and operation of the proposed Lusk on Lusk Project (Project), which proposes to demolish existing office buildings and construct four research and development buildings with a food service building and two parking structures in the City of San Diego.

The Project would result in emissions of air pollutants during both construction and operations. Construction best management practices would be implemented as part of the Project, including measures to minimize fugitive dust control emissions, such as watering twice per day during grading and stabilizing storage piles. The Project would comply with San Diego County Air Pollution Control District (SDAPCD) Rule 55, which requires that no visible dust 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. Emissions of all criteria pollutants would be below the daily thresholds during construction, and short-term construction air quality impacts would be less than significant.

Operationally, the Project would replace existing uses and would not result in a net increase in emissions that would exceed thresholds from area, energy, mobile, and stationary sources. Operational air quality impacts would be less than significant.

Development of the Project would be consistent with SDAPCD's 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County and the 2022 Regional Air Quality Strategy developed to achieve the California Ambient Air Quality Standards. In addition, the Project would not result in cumulatively considerable emissions of nonattainment air pollutants that would exceed the screening level thresholds.

The Project would not result in an increase in traffic that would result in a carbon monoxide hot spot. Construction and operation of the Project also would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants. In addition, evaluation of potential odors from the Project indicated that associated impacts would be less than significant.

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1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report analyzes potential air quality impacts associated with the proposed Lusk on Lusk Project (Project) and includes an evaluation of existing conditions in the Project vicinity and assessment of potential impacts associated with Project construction and operations.

1.2 PROJECT LOCATION

The Project site includes four parcels, approximately 15.07 acres in total, located within the Mira Mesa Community Plan area of the City of San Diego (City), south of Los Peñasquitos Lagoon and east of Interstate 5 (I-5) (Figure 1, *Regional Location*). The proposed Project parcels are situated south and west of Lusk Boulevard, south of the intersection of Lusk Boulevard and Pacific Center Boulevard, within Assessor's Parcel Numbers 341-033-01-00 to -04-00 (Figure 2, *Aerial Photograph*).

1.3 PROJECT DESCRIPTION

The Project proposes to redevelop the existing 15.07-acre property into multi-story, lab and office buildings as part of an interconnected science campus (Figure 3, *Site Plan*). The Project proposes the construction of approximately 1,283,190 square feet (SF) of research and development use, 30,000 SF of tenant-serving amenity space for food services, and 1,083,080 SF of parking structures. Access to the site would be provided by five driveways along Lusk Boulevard. The Project site is currently occupied by 278,491 SF of office and light industrial uses split among six buildings. All existing buildings will be removed as a part of the Project. Grading is estimated to require 211,000 cubic yards (CY) of cut and 37,000 CY of fill, resulting in the export of 174,000 CY.

1.3.1 Construction Best Management Practices

The Project would incorporate best management practices (BMPs) during construction to reduce emissions of fugitive dust. San Diego County Air Pollution Control District (SDAPCD) Rule 55 – Fugitive Dust Control states that no dust and/or dirt shall leave the property line. SDAPCD Rule 55 requires the following:

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

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

    a) be minimized using any of the following or equally effective track-out/carry-out and erosion control measures that apply to the Project or operation:

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

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

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

b) be removed at the conclusion of each 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 PM_{10}-efficient (particulate 10 microns or less in diameter) street sweepers certified to meet the most current South Coast Air Quality Management District Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

The Project would implement the BMP control measures listed below:

- A minimum of two applications of water during grading between dozer/scraper passes;
- Paving, chip sealing, or chemical stabilization of internal roadways after completion of grading;
- Termination of grading if winds exceed 25 miles per hour (mph);
- Maintenance of a minimum soil moisture of 12 percent in all exposed surfaces;
- Stabilization of dirt storage piles by chemical binders, tarps, fencing, or other erosion control; and
- Vehicle speeds would be limited on unpaved roads to 15 mph.

2.0 REGULATORY SETTING

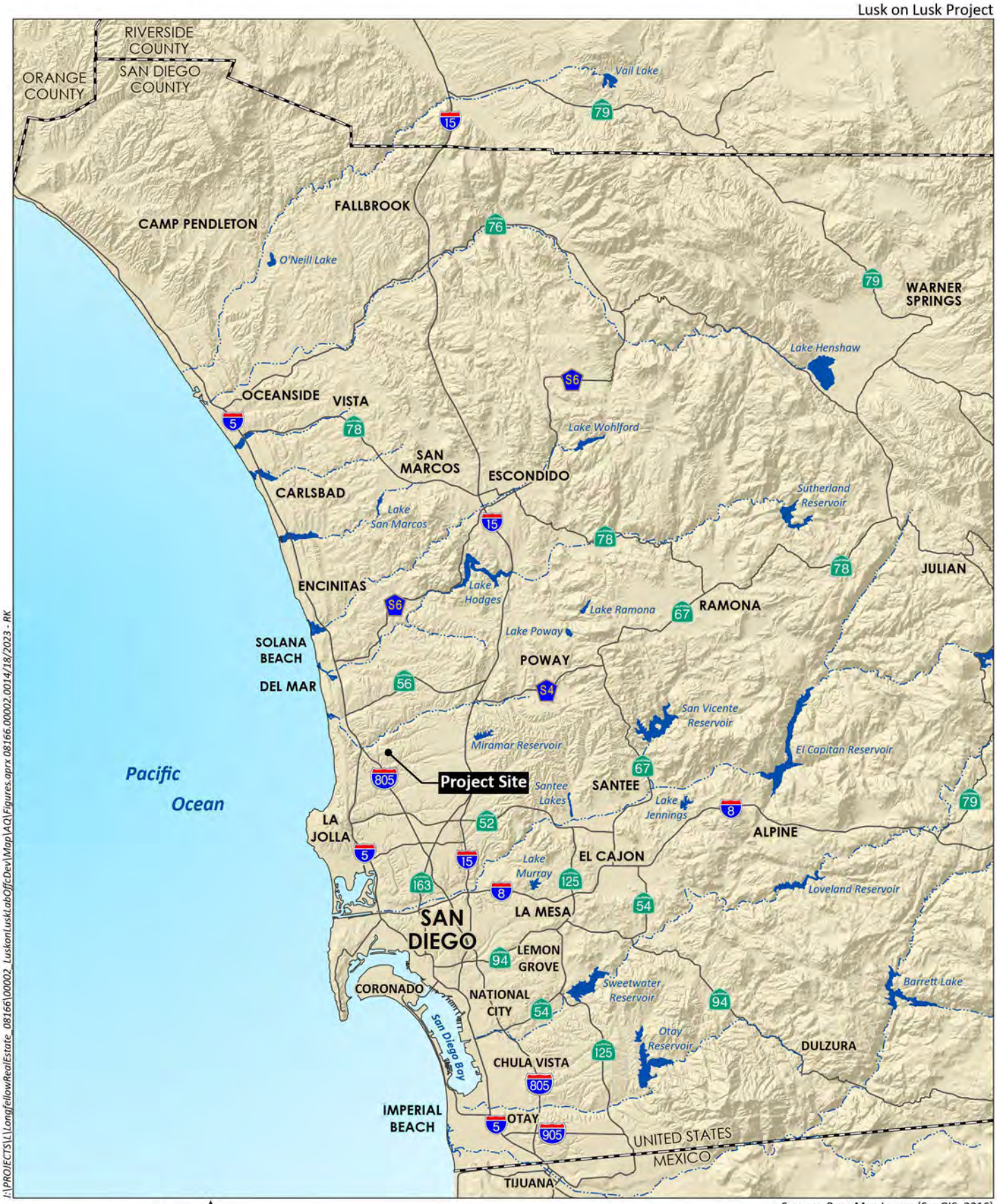
2.1 CRITERIA POLLUTANTS

2.1.1 Pollutants of Concern

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. In general, air pollutants include the following compounds:

- Ozone (O_3)
- Reactive Organic Gases (ROGs) or Volatile Organic Compounds (VOCs)
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO_2)
- Respirable Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)
- Sulfur Dioxide (SO_2)
- Lead (Pb)

The following specific descriptions of health effects for each air pollutant associated with Project construction and operation are based on information available through U.S. Environmental Protection Agency (USEPA; 2023a) and California Air Resources Board (CARB; 2023a).



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0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

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Regional Location

Figure 1

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0 400 Feet

Source: Aerial (SanGIS, 2019)

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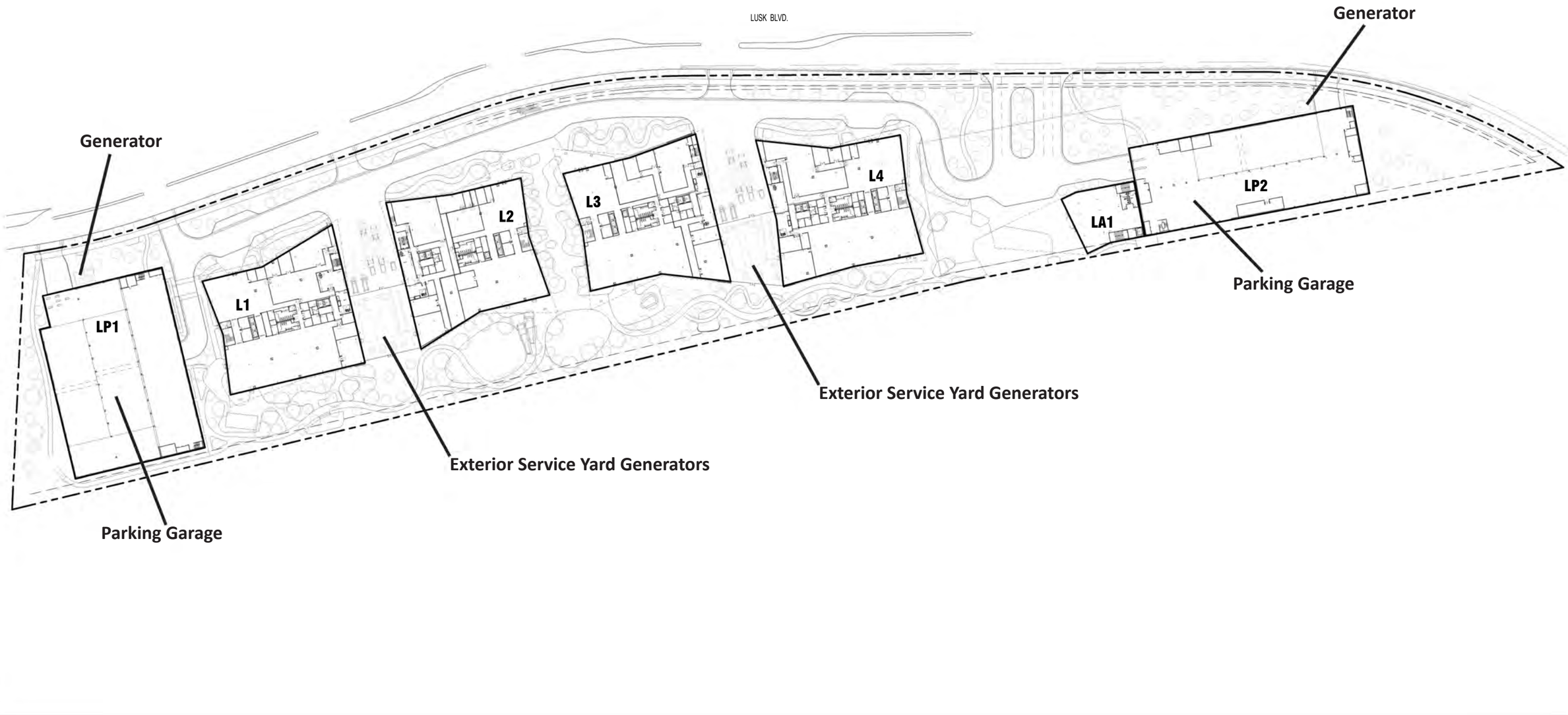
Aerial Photograph

Figure 2



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Source: Longfellow 2023

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Site Plan

Figure 3

Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when VOCs and nitrogen oxides (NO_X), both by-products of fuel combustion, react in the presence of ultraviolet light. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Reactive Organic Gases. ROGs (also known as VOCs) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as ozone.

Carbon Monoxide. CO is a product of fuel combustion. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease and can also affect mental alertness and vision.

Nitrogen Dioxide. NO_2 is also a by-product of fuel combustion and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen monoxide with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter. PM_{10} refers to particulate matter (PM) with an aerodynamic diameter of 10 microns or less. $PM_{2.5}$ refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in these size ranges has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations, and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs. Diesel particulate matter (DPM) is classified a carcinogen by CARB.

Sulfur Dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead in the atmosphere occurs as particulate matter. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Lead has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen. Because emissions of lead are found only in projects that are permitted by the local air district, lead is not an air pollutant of concern for the proposed Project.

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 Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required

the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for the criteria pollutants, which are discussed above. Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. Table 1, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988, and has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered "nonattainment areas" for that pollutant. On July 2, 2021, the San Diego Air Basin (SDAB) was classified as a severe-15 nonattainment area for the 8-hour NAAQS for ozone (USEPA 2023b). 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 for the NAAQS and CAAQS for all other criteria pollutants (SDAPCD 2023a).

Table 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	–	–

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
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	**No Federal Standards**	**No Federal Standards**
Sulfates	24 Hour	25 µg/m^3	**No Federal Standards**	**No Federal Standards**
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	**No Federal Standards**	**No Federal Standards**
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	**No Federal Standards**	**No Federal Standards**

Source: CARB 2016

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

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

Note: More detailed information of the data presented in this table can be found at the CARB website (www.arb.ca.gov).
O_3 = ozone; ppm = parts per million; µg/m^3 = micrograms per cubic meter; PM_{10} = large particulate matter; AAM = Annual Arithmetic Mean; $PM_{2.5}$ = fine particulate matter; CO = carbon monoxide; mg/m^3 = milligrams per cubic meter; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide; km= kilometer; – = No Standard.

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 of San Diego (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 current 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 NAAQS for ozone. The regional air quality plan to achieve the CAAQS for ozone is SDAPCD's 2022 Regional Air Quality Strategy (RAQS; SDAPCD 2023b). 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 RAQS.

The Attainment Plan and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County as part of the development of their respective general plans. Projects which are consistent with the growth

assumptions used in the Attainment Plan and RAQS and do not conflict with the control measures in the Attainment Plan or RAQS, and which do not result in criteria pollutant and precursor emissions in excess of the thresholds adopted by the City (as described in Section 4.2, below), would not hinder the goal of the Attainment Plan or RAQS to bring the SDAB into compliance with the NAAQS and CAAQS for the protection of public health.

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin.

The current federal and state attainment status for San Diego County is presented in Table 2, *San Diego Air Basin Attainment Status*.

Table 2
SAN DIEGO AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State of California Designation
Ozone (1-hour)	No Federal Standard	Nonattainment
Ozone (8-hour)	Nonattainment	Nonattainment
Coarse Particulate Matter (PM_{10})	Unclassifiable[1]	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Attainment	Nonattainment[2]
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Lead	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: SDAPCD 2023a

[1] At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

[2] While data collected does meet the requirements for designation of attainment with federal $PM_{2.5}$ standards, the data completeness requirements for state $PM_{2.5}$ standards substantially exceed federal requirements and mandates, and have historically not been feasible for most air districts to adhere to given local resources.

2.2 TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. Air toxics are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as farms, landfills, construction sites, and residential areas. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic. Public exposure to TACs is a significant environmental health issue in California.

2.3 ODORS

The State of California Health and Safety Code Sections 41700 and 41705 and SDAPCD Rule 51 (commonly referred to as public nuisance law) prohibits emissions from any source whatsoever in such

quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a "considerable" number of persons or businesses in the area will be considered a significant, adverse odor impact.

The San Diego Municipal Code also addresses odor impacts in Section 142.0710, "Air Contaminant Regulations," which states:

Air contaminants including smoke, charred paper, dust, soot, grime, carbon, noxious acids, toxic fumes, gases, odors, and particulate matter, or any emissions that endanger human health, cause damage to vegetation or property, or cause soiling, shall not be permitted to emanate beyond the boundaries of the premises upon which the use emitting the contaminants is located.

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

The climate in southern California, including the SDAB, is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity.

The predominant wind direction in the vicinity of Project site is from the northwest and the average wind speed is 4.7 mph (Iowa Environmental Mesonet 2023). The annual average maximum temperature in the Project area is approximately 67°F, and the annual average minimum temperature is approximately 56°F. Total precipitation in the Project area averages approximately 10 inches annually. Precipitation occurs primarily during the winter and infrequently during the summer (Western Regional Climate Center 2016).

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

3.2 EXISTING AIR QUALITY

3.2.1 Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in Section 2.1.1 and shown in Table 2. The SDAB is classified as a nonattainment area under the NAAQS for 8-hour ozone and as a nonattainment area under the CAAQS for 1-hour ozone, 8-hour ozone, PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area for all other criteria pollutants.

3.2.1.2 Monitored Air Quality

The SDAPCD operates a network of ambient air monitoring stations throughout the County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest ambient monitoring station to the Project site for which recent data is available is the San Diego-Kearny Villa Road monitoring station located near Marine Corps Air Station Miramar, approximately 5.7 miles southeast of the Project site. The closest monitoring station with data for PM_{10} is the El Cajon – Lexington Elementary School monitoring station, approximately 16.5 miles southeast of the project site. Air quality data for these monitoring stations are shown in Table 3, *Air Quality Monitoring Data.*

Table 3
AIR QUALITY MONITORING DATA

Pollutant	2019	2020	2021
Ozone (O_3) – *Marine Corps Air Station Miramar Station*			
Maximum 1-hour concentration (ppm)	0.083	0.123	0.095
Days above 1-hour state standard (>0.09 ppm)	0	2	1
Maximum 8-hour concentration (ppm)	0.075	0.102	0.071
Days above 8-hour state standard (>0.070 ppm)	1	10	1
Days above 8-hour federal standard (>0.070 ppm)	1	10	1
Carbon Monoxide (CO) – *None Available*			
Maximum 8-hour concentration (ppm)	*	*	*
Days above state or federal standard (>9.0 ppm)	*	*	*
Respirable Particulate Matter (PM_{10}) – *El Cajon Station*			
Maximum 24-hour concentration (µg/m^3)	38.7	*	*
Days above state standard (>50 µg/m^3)	0	*	*
Days above federal standard (>150 µg/m^3)	0	*	*
Fine Particulate Matter ($PM_{2.5}$) – *Marine Corps Air Station Miramar Station*			
Maximum 24-hour concentration (µg/m^3)	16.2	47.5	20.9
Days above federal standard (>35 µg/m^3)	0	2	0
Nitrogen Dioxide (NO_2) – *Marine Corps Air Station Miramar Station*			
Maximum 1-hour concentration (ppm)	0.046	0.052	0.060
Days above state 1-hour standard (>0.18 ppm)	0	0	0

Source: CARB 2023b
ppm = parts per million, µg/m^3 = micrograms per cubic meter
* Insufficient data available

From 2019 to 2021, monitoring data at the San Diego-Kearny Villa Road station show acceptable levels of NO_2 and the data available from the El Cajon – Lexington Elementary School station showed acceptable levels of PM_{10} for 2019. Insufficient data were available for CO concentrations. The state and federal 8-hour ozone standards were violated once in 2019, ten times in 2020, and one time in 2021. The state 1-hour ozone standard was violated twice in 2020 and once in 2021. The federal 24-hour $PM_{2.5}$ standard was violated twice in 2020.

3.2.1.3 Existing Project Site Emissions

The Project site is currently developed with six structures that total 278,491 SF of office space and approximately 5 acres of landscaping. Existing emissions at the Project site occur in association with the on-site uses, specifically mobile source emissions from vehicle trips to and from the site; area source emissions generated by maintenance equipment, landscape equipment, and use of products that contain solvents; and energy source emissions from natural gas usage. According to the Local Mobility Analysis prepared for the Project by Linscott, Law & Greenspan Engineers (LLG; 2023), the existing on-site uses generate 1,080 average daily trips (ADT). Emissions associated with the existing development on the Project site were estimated using the California Emissions Estimator Model (CalEEMod) and the ADT estimated in the Local Mobility Analysis for mobile sources. CalEEMod defaults for area sources, energy sources, and trip distances were used to estimate associated existing emissions. Table 4, *Estimated Existing Daily Operational Emissions,* shows the model-calculated emissions associated with the existing uses at the Project site.

Table 4
ESTIMATED EXISTING DAILY OPERATIONAL EMISSIONS

Category	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	6.3	--	--	--	--	--
Energy	0.1	2.4	2.0	<0.1	0.2	0.2
Mobile	4.2	3.4	33.9	0.1	3.2	0.6
Maximum Daily Emissions	**10.6**	**5.8**	**35.9**	**0.1**	**3.4**	**0.8**

Source: CalEEMod (output data is provided 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

3.3 SENSITIVE RECEPTORS

The City's California Environmental Quality Act (CEQA) Significance Determination Thresholds (City 2022a) indicate that a sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant compared to the population at large. Sensitive receptors in proximity to localized CO sources, TACs, or odors are of particular concern. Examples of sensitive receptors include long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, childcare centers, and athletic facilities. The nearest sensitive receptors to the Project site are the multi-family residences located west of the Project site.

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant emissions were calculated using CalEEMod, Version 2022.1 (California Air Pollution Control Officers Association [CAPCOA] 2022). CalEEMod is a computer model used to estimate criteria air pollutant emissions resulting from construction and operation of land development projects throughout the state of California. CalEEMod was developed by the CAPCOA with the input of several air quality management and pollution control districts. The input data and subsequent construction and operation emission estimates for the proposed Project are discussed below. CalEEMod output files are included in Appendix A.

4.1.1 Construction Emissions

As described above, construction emissions are assessed using the CalEEMod, Version 2022.1. CalEEMod contains OFFROAD2011 and EMFAC2021 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. The construction analysis included modeling of the projected construction equipment that would be used during each construction activity and quantities of earth and debris to be moved. The model calculates emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, and the ozone precursors VOC and NO_X.

Construction input data for CalEEMod include, but are not limited to, (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the Project area. The analysis assessed maximum daily emissions from individual construction activities associated with Project implementation, which are expected to include site preparation, demolition, grading, utility undergrounding, building construction, architectural coating, and paving.

Construction would require heavy equipment during these various construction activities. Construction equipment estimates are based on assumptions provided by the construction contractor and model defaults. Table 5, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each stage of construction.

Table 5
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Activity	Equipment	Number	Usage Hours	Horsepower
Site Preparation	Excavators	1	8	36
	Off-Highway Trucks	1	4	376
	Rubber Tired Loaders	1	8	150
	Skid-Steer Loaders	2	8	71
Demolition	Crushing Equipment	1	8	12
	Excavators	3	8	36
	Off-Highway Trucks	1	4	376
	Rough Terrain Forklifts	2	8	96
	Rubber Tired Loaders	2	8	150
	Skid-Steer Loaders	2	8	71
	Welders	1	8	46

Construction Activity	Equipment	Number	Usage Hours	Horsepower
Grading	Excavators	1	8	36
	Graders	1	8	148
	Off-Highway Trucks	1	4	376
	Rollers	1	8	36
	Rubber Tired Dozers	2	8	367
	Scrapers	6	8	423
	Skid Steer Loaders	1	8	71
	Tractors/Loaders/Backhoes	1	8	84
Utility Undergrounding	Excavators	1	8	36
	Off-Highway Trucks	1	8	376
	Rubber Tired Loaders	1	8	150
	Skid Steer Loaders	1	8	71
	Rollers	1	8	36
Building Construction	Aerial Lifts	9	2	46
	Air Compressors	12	6	37
	Cement and Mortar Mixers	3	8	10
	Concrete/Industrial Saws	1	8	33
	Cranes	3	7	367
	Generator Sets	2	8	14
	Off-Highway Trucks	2	4	376
	Other Construction Equipment	1	8	82
	Pumps	1	8	11
	Rough Terrain Forklifts	2	8	82
	Sweepers/Scrubbers	3	4	36
Architectural Coating	Air Compressors	1	6	37
Paving	Aerial Lifts	1	2	46
	Air Compressors	1	8	37
	Cement and Mortar Mixers	1	8	10
	Cranes	1	8	367
	Off-Highway Trucks	2	4	376
	Plate Compactors	1	8	11
	Pumps	1	8	11
	Rough Terrain Forklifts	2	8	96
	Skid Steer Loaders	2	8	71
	Sweepers/Scrubbers	1	4	36

Source: CalEEMod (complete model input provided in Appendix A)

The construction schedule was determined by input provided by the construction contractor. Table 6, *Anticipated Construction Schedule*, shows the anticipated construction schedule that was assumed for modeling purposes.

Table 6
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period Start	Construction Period End	Number of Working Days
Site Preparation	12/3/2024	12/30/2024	20
Demolition	12/31/2024	2/24/2025	40
Grading	2/25/2025	5/12/2025	55
Utility Undergrounding	2/25/2025	8/25/2025	130
Building Construction	5/13/2025	9/13/2027	610
Architectural Coating	5/11/2027	10/25/2027	120
Paving	9/14/2027	10/25/2027	30

Project construction would involve the demolition of 278,491 SF of existing structures, 302,727 SF of asphalt area, and 41,913 SF of concrete area. According to the Project's Waste Management Plan (HELIX 2023), this equates to 30,023 tons of building debris and 10,003 tons of asphalt and concrete demolition material. In addition, approximately 18,553 CY of vegetation material would be removed from the site to prepare for grading. Grading of the project site would require 211,000 CY of cut, 37,000 CY of fill, resulting in a net export of 174,000 CY of soil material. The export of demolition materials and cut soil would require the use of on-road haul trucks that would generate air pollutant emissions. According to the Project applicant, soil hauling would occur over a period of 20 days within the 55-day grading period.

The quantity, duration, and the intensity of construction activity influence the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a large amount of construction is occurring in an intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod; and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval).

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Construction emission calculations presented herein assume the implementation of standard dust control measures listed in Section 1.3.1, including watering two times daily during grading, ensuring that all exposed surfaces maintain a minimum soil moisture of 12 percent, and limiting vehicle speeds on unpaved roads to 15 mph.

The Project would also comply with the requirements of SDAPCD Rule 67 by using low-VOC coatings with a content of 50 grams per liter. The quantities of coatings that would be applied to the interior and parking areas of the new buildings were estimated according to CalEEMod default assumptions. No exterior coatings were assumed to be required, as the Project proposes the use of precast walls.

4.1.2 Operational Emissions

Operational emissions associated with the Project's development of a new research and development campus and associated parking and dining facilities were estimated using CalEEMod. Operational sources of emissions include area, energy, transportation, and stationary. Operational emissions from

area sources include engine emissions from landscape maintenance equipment and VOC emissions from repainting of buildings and consumer products. As discussed above, the Project would use low-VOC coatings during maintenance in accordance with SDAPCD Rule 67. Energy source emissions include the combustion of natural gas for heating and hot water. The model-calculated default for natural gas usage was used for the emissions estimates.

Operational emissions from mobile sources are associated with Project-generated vehicle trips. According to the Local Mobility Analysis prepared for the Project by LLG (2023), the Project would generate a total of 10,266 ADT, resulting in a net increase of 9,186 ADT compared to existing conditions. CalEEMod default vehicle speeds, trip purpose, and trip distances were applied to the new Project-generated trips. Model output data sheets are included in Appendix A.

The Project proposes the installation of six backup generators: two 422-horsepower (hp) generators, two 3621-hp generators, and two 4680-hp generators. Each generator would require monthly testing for 30 minutes and annual testing for 4 hours, for a total of 9.5 hours of testing time per year. Not all generators would be tested on the same day. Therefore, to provide an estimate of the maximum daily emissions resulting from generator testing, modeling assumed testing of the largest generator (4680-hp) would occur for four hours on a given day.

4.2 SIGNIFICANCE CRITERIA

The City (2022a) has approved guidelines for determining significance based on Appendix G of the CEQA Guidelines, which provide guidance that a project would have a significant air quality environmental impact if it would:

(1) Conflict with or obstruct implementation of the Attainment Plan or applicable portions of the SIP;

(2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

(3) Result in a cumulatively considerable net increase of any criteria pollutant for which the SDAB is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

(4) Expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations including air toxins such as diesel particulates;

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

(6) Release substantial quantities of air contaminants beyond the boundaries of the premises upon which the stationary source emitting the contaminants is located.

To determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, (b) result in a cumulatively considerable net increase of PM_{10}, PM_{10}, or exceed quantitative thresholds for ozone precursors (NO_X and VOCs), or (c) have an adverse effect on human health, project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD. As part of its air quality permitting

process, the SDAPCD has established thresholds in Rules 20.2 and 20.3 for the preparation of Air Quality Impact Assessments. In the absence of a SDAPCD adopted thresholds for VOC, the City's screening threshold of 137 pounds per day or 15 tons per year is used (City 2022a).

The screening criteria were developed by SDAPCD with the purpose of attaining the NAAQS and CAAQS. The NAAQS and CAAQS, as discussed in Section 2.1.1, identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. Therefore, for CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality or have an adverse effect on human health. The screening thresholds are included in Table 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 ($PM_{2.5}$)		67	
Oxides of Nitrogen (NO_X)		250	
Oxides of Sulfur (SO_X)		250	
Carbon Monoxide (CO)		550	
Volatile Organic Compounds (VOCs)		137	
Operational Emissions			
	Pounds per Hour	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	67	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOC)	---	137	15
Toxic Air Contaminant Emissions			
Excess Cancer Risk		1 in 1 million 10 in 1 million with T-BACT	
Non-Cancer Hazard		1.0	

Source: City 2022a; SDAPCD 2019
T-BACT = Toxics-Best Available Control Technology

Per the City's Significance Determination Thresholds, determining the significance of potential odor impacts should be based on what is known about the quantity of the odor compound(s) that would result from the Project's proposed use(s), the type of neighboring uses potentially affected, the distance(s) between the Project's point source(s) and the neighboring uses such as sensitive receptors, and the resultant concentrations at receptors.

5.0 IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed Project related to air pollutant emissions.

5.1 CONSISTENCY WITH AIR QUALITY PLANS

The SDAPCD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the Attainment Plan, RAQS, and SIP, prepared by the SDAPCD for the region. The Attainment Plan, RAQS, and SIP are based on SANDAG population projections, as well as land use designations and population projections included in general plans for cities located within the County. Population growth is typically associated with the construction of residential units or large employment centers.

Projects that propose development that is consistent with the growth anticipated by the local jurisdictions' general plans would be consistent with the Attainment Plan and RAQS. If a project proposes development that is less intensive than anticipated within the General Plan, the project would likewise be consistent with the Attainment Plan and RAQS. If a project proposes development that is greater than that anticipated in the General Plan and SANDAG's growth projections upon which the Attainment Plan and RAQS are based, the project would conflict with the Attainment Plan and RAQS and might have a potentially significant impact on air quality. This situation would warrant further analysis to determine whether the project and the surrounding projects exceed the growth projections used in the Attainment Plan and RAQS for the specific subregional area.

The Project site has a City General Plan land use designation of Industrial Employment and a Mira Mesa Community Plan land use designation of Technology Park (City 2008; City 2022b). The Project does not propose an amendment to the City General Plan or Mira Mesa Community Plan. Within the IL-2-1 zone, a floor-to-area ratio (FAR) of 2.0 is allowed. The project proposed to construct 1,313,190 SF of buildings on a 656,595 SF site, resulting in a FAR of 2.0. As the Project would be consistent with its zoning designation and allowable density in the City General Plan and Mira Mesa Community Plan, it would not result in development that is greater than that anticipated in the General Plan or SANDAG's growth projections upon which the Attainment Plan and RAQS are based.

Furthermore, as detailed in Section 5.2, below, the Project would not result in a significant air quality impact with regards to construction- and operation-related emissions of ozone precursors or criteria air pollutants. The Project would also comply with existing and new rules and regulations as they are implemented by the SDAPCD, CARB, and/or USEPA related to emissions generated during construction. Impacts associated with conformance to regional air quality plans would be less than significant.

5.2 CONFORMANCE TO FEDERAL AND STATE AIR QUALITY STANDARDS

The Project would generate criteria pollutants in the short-term during construction and the long-term during operation. To determine whether a project would result in emissions that would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or have an adverse effect on human health, the Project's emissions are evaluated based on the quantitative emission thresholds established by the SDAPCD (as shown in Table 7).

5.2.1 Construction

The Project's construction emissions were estimated using CalEEMod as described in Section 4.1.1. Project-specific input was based on information provided by the Project applicant and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

The results of the calculations for Project construction are shown in Table 8, *Estimated Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the thresholds provided in Table 7. Refer to Appendix A for detailed emissions calculations.

Table 8
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS

Year	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
2024	36.0	47.4	80.4	0.2	21.9	5.2
2025	35.9	131.4	97.2	0.4	21.9	8.9
2026	7.9	50.8	83.8	0.1	11.3	3.7
2027	49.8	49.1	89.8	0.2	12.7	4.0
Maximum Daily Emissions	**49.8**	**131.4**	**97.2**	**0.4**	**21.9**	**8.9**
SDAPCD Thresholds	*137*	*250*	*550*	*250*	*100*	*67*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 8, emissions of all criteria pollutants and ozone precursors from Project construction would be below the SDAPCD's significance thresholds. Therefore, direct impacts from criteria pollutants generated during Project construction would be less than significant.

5.2.2 Operation

The Project's net increase in operational emissions over existing conditions was estimated using CalEEMod and data from CARB, as described in Section 4.1.2. Operational emissions calculations and model outputs are provided in Appendix A. Table 9, *Estimated Net Daily Operational Emissions*, presents the summary of the net increase in operational emissions for the Project for comparison with the thresholds provided in Table 7.

Table 9
ESTIMATED NET DAILY OPERATIONAL EMISSIONS

Category	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	30.0	--	--	--	--	--
Energy	--	--	--	--	--	--
Mobile	49.9	32.1	322.1	0.8	76.2	19.7
Stationary	30.7	137.4	78.3	0.1	4.5	4.5
Total Daily Emissions[1]	**100.6**	**169.5**	**400.4**	**1.0**	**80.7**	**24.2**
Existing Daily Emissions (Table 4)	10.6	5.8	35.9	0.1	3.4	0.8
Net Daily Emissions[1]	**90.0**	**163.7**	**364.5**	**0.9**	**77.3**	**23.4**
SDAPCD Thresholds	*137*	*250*	*550*	*250*	*100*	*67*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
[1] Totals and differences may not compute due to rounding.
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, the net increase in emissions of all criteria pollutants and ozone precursors associated with operation of the Project would be below the daily thresholds. Therefore, operation of the Project would not result in a significant impact on air quality.

5.3 CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

The region is a federal and/or state nonattainment area for PM_{10}, $PM_{2.5}$, and ozone. The Project would contribute particulate matter and the ozone precursors VOC and NO_X to the area during Project construction and operation. As described in Section 5.2, emissions during both construction and operations would not exceed regional thresholds and would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, emissions would not be cumulatively considerable, and impacts would be less than significant.

5.4 IMPACTS TO SENSITIVE RECEPTORS

Impacts to sensitive receptors are typically analyzed for operational period CO hotspots and exposure to TACs. An analysis of the Project's potential to expose sensitive receptors to these pollutants is provided below.

5.4.1 Carbon Monoxide Hotspots

Localized air quality effects occur when emissions from vehicular traffic increase in local areas. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. If a project generates

vehicular traffic that increases average delay at signalized intersections operating at Level of Service (LOS) E or F or causes an intersection that would operate at LOS D or better without the project to operate at LOS E of F with the project, the project could result in significant CO hotspot-related effects to sensitive receptors.

According to the Local Mobility Analysis prepared for the Project (LLG 2023), 14 intersections would operate at LOS E or F under the Opening Year (2027) With Project scenario. As discussed in the Local Mobility Analysis, intersection improvements that would reduce LOS or delay times were recommended at intersections in the Project vicinity. To provide a conservative analysis related to CO hotspots, it is assumed that intersection improvements would not be implemented prior to Project opening, and the 14 intersections identified would operate at LOS E or F and experience increased delays with the Project. Therefore, consistent with the California Department of Transportation CO Protocol, these findings indicate that further screening is required.

Although the SDAPCD has not, various air quality agencies in California have developed conservative screening methods. The screening methods of the Sacramento Metropolitan Air Quality Management District (SMAQMD; 2009) are used for this Project because ambient CO concentrations within the SMAQMD jurisdiction are higher than for the project area, as measured by CARB, resulting in a more conservative analysis. The SMAQMD states that a project will not result in a significant impact to local CO concentrations if it meets the below criteria:

- The affected intersection carries less than 31,600 vehicles per hour;
- The project does not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, below-grade roadway, or other location where horizontal or vertical mixing of air would be substantially limited; and
- The affected intersection, which includes a mix of vehicle types, is not anticipated to be substantially different from the county average, as identified by EMFAC or CalEEMod models.

The highest peak hour traffic volumes at the 14 affected intersections under the Opening Year (2027) With Project scenario are provided in Table 10, *Peak Hour Intersection Traffic Volumes*.

Table 10
PEAK HOUR INTERSECTION TRAFFIC VOLUMES

Intersection	LOS E/F Peak Hour	Maximum Peak Hour Traffic Volume (AM or PM)
Carmel Mountain Road and I-5 Northbound Ramps	PM	3,370 (PM)
Roselle Street and I-5 Northbound Off-Ramp	AM	2,094 (AM)
Vista Sorrento Parkway and Sorrento Valley Boulevard	AM and PM	5,468 (PM)
Vista Sorrento Parkway and Lusk Boulevard	PM	3,435 (PM)
Lusk Boulevard and Pacific Center Boulevard/Project Driveway #3	PM	2,029 (PM)
Vista Sorrento Parkway and Mira Sorrento Place/ I-805 Northbound Ramps	AM and PM	3,857 (PM)
Barnes Canyon Road and Lusk Boulevard	AM and PM	3,194 (AM)
Mira Mesa Boulevard and Vista Sorrento Parkway/ I-805 Northbound Off-Ramp	AM and PM	6,296 (AM)
Mira Mesa Boulevard and Scranton Road	AM and PM	6,434 (AM)
Mira Mesa Boulevard and Pacific Heights Boulevard	PM	4,822 (PM)
Mira Mesa Boulevard and Camino Santa Fe	AM and PM	6,200 (AM)
Mira Mesa Boulevard and Camino Ruiz	AM and PM	6,100 (PM)
Mira Mesa Boulevard and Black Mountain Road	AM and PM	7,144 (AM)
Mira Mesa Boulevard and I-15 Southbound Ramps	AM and PM	7,983 (AM)

Source: LLG 2023
LOS = level of service

As shown in Table 10, no intersections affected by the Project are anticipated to carry more than 31,600 vehicles during the peak hour. These intersections are not located in a tunnel, urban canyon, or similar area that would limit the mixing of air, nor is the vehicle mix anticipated to be substantially different than the San Diego County average. There would be no potential for a CO hot spot or exceedance of State or Federal CO ambient air quality standard because the maximum traffic volumes would be substantially less than the 31,600 vehicles per hour screening level; because the congested intersections are located where mixing of air would not be limited; and because the vehicle mix would not be uncommon. Therefore, air quality impacts related to the exposure of sensitive receptors to substantial pollutant concentrations related to intersection operations would be less than significant.

5.4.2 Exposure to Toxic Air Contaminants

5.4.2.1 Construction

Diesel engines emit a complex mixture of air pollutants, including gaseous material and DPM. DPM emissions would be released from the on-site construction equipment associated with the Project. CARB has declared that DPM from diesel engine exhaust is a TAC. Additionally, the Office of Environmental Health Hazard Assessment has determined that chronic exposure to DPM can cause carcinogenic and non-carcinogenic health effects. For this reason, although other pollutants would be generated, DPM would be the primary TAC of concern.

The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual are higher if a

fixed exposure occurs over a longer time period. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with a project.

There would be few pieces of off-road, heavy-duty diesel equipment operating at a given time during Project construction, and the construction period would be short, especially when compared to 30 years. Further, construction equipment would not be operating in a specific location throughout the construction period with the potential to affect a given receptor for the entire duration of Project construction. As shown above in Table 8, the highest daily emission of PM_{10} (which includes equipment emissions of DPM) during construction would be approximately 21 pounds per day during the demolition phase, which would be well below the 100 pounds per day significance level threshold. As discussed above in Section 2.1.1, these significance level thresholds were developed with the purpose of attaining the NAAQS and CAAQS, which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. Combined with the highly dispersive properties of DPM, construction-related emissions would not expose sensitive receptors to substantial emissions of TACs. Impacts from construction emissions would be less than significant.

5.4.2.2 Operation

CARB siting recommendations within the *Air Quality and Land Use Handbook* suggest a detailed health risk assessment should be conducted for sensitive receptors within 1,000 feet of a warehouse distribution center, within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater), 50 feet of a typical gas dispensing facilities, or within 300 feet of a dry cleaning facility that uses perchloroethylene, among other siting recommendations (CARB 2005). The Project does not include these types of sources and would not represent a substantial source of TACs.

The Project, as a research and development facility, may include laboratory uses that could involve operations with the potential to lead to TAC vapor emissions; however, such operations would be performed under fume hoods that would function to capture emissions at the source, dilute the emissions in the hood, and then expel the emissions where they can disperse in the atmosphere. Use of the fume hoods would minimize TAC-related risk to both on-site and off-site receptors. In addition, emergency diesel generators are proposed at the Project site and have the potential to emit TACs. However, due to their limited use for testing, generators proposed by the Project would not result in a substantial source of TACs. As such, impacts are considered less than significant.

5.5 ODORS

As discussed above in Section 2.3, the State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. Any unreasonable odor discernible at the property line of the Project site will be considered a significant odor impact.

The Project could produce odors during proposed construction activities from construction equipment exhaust, application of asphalt, and/or the application of architectural coatings; however, standard construction practices would minimize the odor emissions and their associated impacts. Furthermore,

odors emitted during construction would be temporary, short-term, and intermittent in nature, and would cease upon the completion of the respective phase of construction. Accordingly, the proposed Project would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

During Project operation, the temporary storage of refuse could be a potential source of odor; however, Project-generated refuse is required to be stored in covered containers and removed at regular intervals in compliance with the City's Municipal Code solid waste regulations (Chapter 14, Article 2, Division 8), thereby precluding significant odor impacts. Furthermore, the proposed Project would be required to comply with SDAPCD Rule 51 which prohibits the discharge of odorous emissions that would create a public nuisance. As such, long-term operation of the proposed Project would not create objectionable odors affecting a substantial number of people. Impacts would be less than significant.

5.6 OFF-SITE POLLUTANTS

As described in Section 4.1.2, the Project proposes the use of six backup generators powered by diesel. The generators are assumed to be tested once per month for 30 minutes and once per year for 4 hours, for a total of 9.5 hours of operating time per year. The operational emissions calculated in CalEEMod consider the use of the largest generator for four hours in one day, as this is the maximum daily testing time. Therefore, the maximum daily operational emissions presented in Table 9 represent a conservative daily scenario for emissions resulting from stationary sources at the Project site. As shown in Table 9, air contaminants released by stationary sources and the Project as a whole, would not exceed SDAPCD thresholds. Therefore, the Project would not release substantial quantities of air contaminants beyond the boundaries of the Project site and impacts would be less than significant.

6.0 CONCLUSION

The proposed Project would not result in significant impacts related to air quality from construction or operations, and no mitigation would be required.

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8.0 REFERENCES

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emission Estimator Model (CalEEMod) Version 2022.1. Available at: https://www.caleemod.com/. Released April.

California Air Resources Board (CARB). 2023a. California Ambient Air Quality Standards. Available at: https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed January 4.

2023b. iAdam Air Quality Data Statistics: Top 4 Summary. Available at: https://www.arb.ca.gov/adam/topfour/topfourdisplay.php. Accessed January 9.

2016. Ambient Air Quality Standards. May 4. Available at: https://ww2.arb.ca.gov/resources/documents/ambient-air-quality-standards-0.

2005. Air Quality and Land Use Handbook: A Community Health Perspective. April.

HELIX Environmental Planning, Inc. (HELIX). 2023. Lusk on Lusk Project Waste Management Plan. April.

Iowa Environmental Mesonet. 2023. [NKX] Miramar NAS Windrose Plot. Available at: https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=NKX&network=CA_ASOS. Accessed January 9.

Linscott, Law & Greenspan Engineers (LLG). 2023. Local Mobility Analysis Lusk on Lusk.

Sacramento Metropolitan Air Quality Management District (SMAQMD). 2009. Guide to Air Quality Assessment in Sacramento County. Available at: https://www.airquality.org/Businesses/CEQA-Land-Use-Planning/CEQA-Guidance-Tools. December.

San Diego, City of (City). 2022a. California Environmental Quality Act Significance Determination Thresholds. September.

2022b. Mira Mesa Community Plan and Local Coastal Program. Adopted December 5.

2008. City of San Diego General Plan. Adopted March 10.

San Diego County Air Pollution Control District (SDAPCD). 2023a. Attainment Status. Available at: https://www.sdapcd.org/content/sdapcd/planning/attainment-status.html. Accessed January 9.

2023b. 2022 Regional Air Quality Strategy (RAQS). Available at: https://www.sdapcd.org/content/dam/sdapcd/documents/grants/planning/Att.%20A%20-%202022%20RAQS.pdf.

2020. 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County. October.

2019. Rule 20.2 New Source Review Non-Major Stationary Sources. Adopted June 26.

U.S. Environmental Protection Agency (USEPA). 2023a. Criteria Air Pollutants. Last updated August 9. Available at: https://www.epa.gov/criteria-air-pollutants. Accessed January 4.

2023b. Green Book 8-Hour Ozone (2015) Area Information. Available at: https://www.epa.gov/green-book/green-book-8-hour-ozone-2015-area-information. Accessed January 4.

Western Regional Climate Center. 2016. Period of Record Monthly Climate Summary, San Diego SeaWorld, California (047741). Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7741. Accessed January 9, 2023.

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Appendix A

CalEEMod Outputs

Existing Use Lusk on Lusk Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Existing Use Lusk on Lusk
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.60
Precipitation (days)	15.4
Location	32.901356926519, -117.20148194144565
County	San Diego
City	San Diego
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6359
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.11

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
Office Park	278	1000sqft	15.0	278,491	217,800	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.88	10.6	5.47	35.9	0.10	0.24	3.11	3.35	0.24	0.55	0.79	234	12,393	12,627	24.8	0.61	25.3	13,454
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.81	10.6	5.77	33.6	0.10	0.24	3.11	3.35	0.24	0.55	0.79	234	11,995	12,229	24.8	0.63	1.31	13,038
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.87	9.72	5.07	27.4	0.08	0.23	2.49	2.73	0.23	0.44	0.67	234	10,362	10,596	24.7	0.56	9.20	11,390
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.71	1.77	0.93	5.00	0.01	0.04	0.45	0.50	0.04	0.08	0.12	38.8	1,715	1,754	4.09	0.09	1.52	1,886

2.5. Operations Emissions by Sector, Unmitigated

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

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

Mobile	4.61	4.20	3.08	33.9	0.09	0.06	3.11	3.17	0.06	0.55	0.61	—	8,920	8,920	0.38	0.32	24.6	9,050
Area	—	6.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.26	0.13	2.40	2.01	0.01	0.18	—	0.18	0.18	—	0.18	—	3,429	3,429	0.67	0.06	—	3,463
Water	—	—	—	—	—	—	—	—	—	—	—	94.8	43.8	139	9.76	0.23	—	453
Waste	—	—	—	—	—	—	—	—	—	—	—	140	0.00	140	14.0	0.00	—	488
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.68	0.68
Total	4.88	10.6	5.47	35.9	0.10	0.24	3.11	3.35	0.24	0.55	0.79	234	12,393	12,627	24.8	0.61	25.3	13,454
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.55	4.13	3.38	31.6	0.08	0.06	3.11	3.17	0.06	0.55	0.61	—	8,522	8,522	0.39	0.34	0.64	8,634
Area	—	6.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.26	0.13	2.40	2.01	0.01	0.18	—	0.18	0.18	—	0.18	—	3,429	3,429	0.67	0.06	—	3,463
Water	—	—	—	—	—	—	—	—	—	—	—	94.8	43.8	139	9.76	0.23	—	453
Waste	—	—	—	—	—	—	—	—	—	—	—	140	0.00	140	14.0	0.00	—	488
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.68	0.68
Total	4.81	10.6	5.77	33.6	0.10	0.24	3.11	3.35	0.24	0.55	0.79	234	11,995	12,229	24.8	0.63	1.31	13,038
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.61	3.27	2.68	25.4	0.07	0.05	2.49	2.54	0.05	0.44	0.49	—	6,889	6,889	0.31	0.27	8.52	6,986
Area	—	6.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.26	0.13	2.40	2.01	0.01	0.18	—	0.18	0.18	—	0.18	—	3,429	3,429	0.67	0.06	—	3,463
Water	—	—	—	—	—	—	—	—	—	—	—	94.8	43.8	139	9.76	0.23	—	453
Waste	—	—	—	—	—	—	—	—	—	—	—	140	0.00	140	14.0	0.00	—	488
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.68	0.68
Total	3.87	9.72	5.07	27.4	0.08	0.23	2.49	2.73	0.23	0.44	0.67	234	10,362	10,596	24.7	0.56	9.20	11,390
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.66	0.60	0.49	4.63	0.01	0.01	0.45	0.46	0.01	0.08	0.09	—	1,140	1,140	0.05	0.04	1.41	1,157
Area	—	1.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	0.05	0.02	0.44	0.37	< 0.005	0.03	—	0.03	0.03	—	0.03	—	568	568	0.11	0.01	—	573
Water	—	—	—	—	—	—	—	—	—	—	—	15.7	7.25	22.9	1.62	0.04	—	74.9
Waste	—	—	—	—	—	—	—	—	—	—	—	23.1	0.00	23.1	2.31	0.00	—	80.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11	0.11
Total	0.71	1.77	0.93	5.00	0.01	0.04	0.45	0.50	0.04	0.08	0.12	38.8	1,715	1,754	4.09	0.09	1.52	1,886

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	4.61	4.20	3.08	33.9	0.09	0.06	3.11	3.17	0.06	0.55	0.61	—	8,920	8,920	0.38	0.32	24.6	9,050
Total	4.61	4.20	3.08	33.9	0.09	0.06	3.11	3.17	0.06	0.55	0.61	—	8,920	8,920	0.38	0.32	24.6	9,050
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	4.55	4.13	3.38	31.6	0.08	0.06	3.11	3.17	0.06	0.55	0.61	—	8,522	8,522	0.39	0.34	0.64	8,634
Total	4.55	4.13	3.38	31.6	0.08	0.06	3.11	3.17	0.06	0.55	0.61	—	8,522	8,522	0.39	0.34	0.64	8,634
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	0.66	0.60	0.49	4.63	0.01	0.01	0.45	0.46	0.01	0.08	0.09	—	1,140	1,140	0.05	0.04	1.41	1,157
Total	0.66	0.60	0.49	4.63	0.01	0.01	0.45	0.46	0.01	0.08	0.09	—	1,140	1,140	0.05	0.04	1.41	1,157

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	571	571	0.42	0.05	—	597
Total	—	—	—	—	—	—	—	—	—	—	—	—	571	571	0.42	0.05	—	597
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	571	571	0.42	0.05	—	597
Total	—	—	—	—	—	—	—	—	—	—	—	—	571	571	0.42	0.05	—	597
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	94.5	94.5	0.07	0.01	—	98.8
Total	—	—	—	—	—	—	—	—	—	—	—	—	94.5	94.5	0.07	0.01	—	98.8

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

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

Office Park	0.26	0.13	2.40	2.01	0.01	0.18	—	0.18	0.18	—	0.18	—	2,858	2,858	0.25	0.01	—	2,866
Total	0.26	0.13	2.40	2.01	0.01	0.18	—	0.18	0.18	—	0.18	—	2,858	2,858	0.25	0.01	—	2,866
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	0.26	0.13	2.40	2.01	0.01	0.18	—	0.18	0.18	—	0.18	—	2,858	2,858	0.25	0.01	—	2,866
Total	0.26	0.13	2.40	2.01	0.01	0.18	—	0.18	0.18	—	0.18	—	2,858	2,858	0.25	0.01	—	2,866
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	0.05	0.02	0.44	0.37	< 0.005	0.03	—	0.03	0.03	—	0.03	—	473	473	0.04	< 0.005	—	475
Total	0.05	0.02	0.44	0.37	< 0.005	0.03	—	0.03	0.03	—	0.03	—	473	473	0.04	< 0.005	—	475

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	6.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consum Products	—	5.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	6.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consum er Products	—	1.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	1.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	94.8	43.8	139	9.76	0.23	—	453
Total	—	—	—	—	—	—	—	—	—	—	—	94.8	43.8	139	9.76	0.23	—	453
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	94.8	43.8	139	9.76	0.23	—	453
Total	—	—	—	—	—	—	—	—	—	—	—	94.8	43.8	139	9.76	0.23	—	453

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	15.7	7.25	22.9	1.62	0.04	—	74.9
Total	—	—	—	—	—	—	—	—	—	—	—	15.7	7.25	22.9	1.62	0.04	—	74.9

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	140	0.00	140	14.0	0.00	—	488
Total	—	—	—	—	—	—	—	—	—	—	—	140	0.00	140	14.0	0.00	—	488
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	140	0.00	140	14.0	0.00	—	488
Total	—	—	—	—	—	—	—	—	—	—	—	140	0.00	140	14.0	0.00	—	488
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	23.1	0.00	23.1	2.31	0.00	—	80.9
Total	—	—	—	—	—	—	—	—	—	—	—	23.1	0.00	23.1	2.31	0.00	—	80.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.68	0.68
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.68	0.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.68	0.68
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.68	0.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11	0.11
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11	0.11

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

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

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

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

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

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Office Park	1,081	457	212	316,565	11,266	4,762	2,207	3,300,535

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	417,737	139,246	—

5.10.3. Landscape Equipment

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)
Office Park	4,621,437	45.1	0.0330	0.0040	8,918,125

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Office Park	49,497,249	3,254,839

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Office Park	259	—

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
Office Park	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Office Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

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	11.3	annual days of extreme heat
Extreme Precipitation	2.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	1.34	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	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	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	1	1	1	2
Wildfire	1	1	1	2
Flooding	1	1	1	2
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	47.0
AQ-PM	43.5
AQ-DPM	27.1
Drinking Water	29.0
Lead Risk Housing	1.50

Pesticides	0.00
Toxic Releases	16.7
Traffic	60.1
Effect Indicators	—
CleanUp Sites	54.6
Groundwater	47.4
Haz Waste Facilities/Generators	93.6
Impaired Water Bodies	83.0
Solid Waste	9.67
Sensitive Population	—
Asthma	2.55
Cardio-vascular	0.92
Low Birth Weights	30.1
Socioeconomic Factor Indicators	—
Education	16.8
Housing	1.29
Linguistic	22.9
Poverty	5.80
Unemployment	29.4

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	99.79468754
Employed	91.08174002
Median HI	95.85525472

Education	—
Bachelor's or higher	94.16142692
High school enrollment	100
Preschool enrollment	71.66688053
Transportation	—
Auto Access	92.6344155
Active commuting	23.61093289
Social	—
2-parent households	95.43179777
Voting	86.71885025
Neighborhood	—
Alcohol availability	93.82779417
Park access	81.35506224
Retail density	93.37867317
Supermarket access	11.44616964
Tree canopy	76.82535609
Housing	—
Homeownership	81.7400231
Housing habitability	98.92210959
Low-inc homeowner severe housing cost burden	88.0790453
Low-inc renter severe housing cost burden	99.08892596
Uncrowded housing	91.95431798
Health Outcomes	—
Insured adults	92.49326318
Arthritis	93.3
Asthma ER Admissions	97.8
High Blood Pressure	91.8

Cancer (excluding skin)	55.0
Asthma	99.2
Coronary Heart Disease	96.0
Chronic Obstructive Pulmonary Disease	98.1
Diagnosed Diabetes	92.6
Life Expectancy at Birth	84.7
Cognitively Disabled	85.7
Physically Disabled	95.1
Heart Attack ER Admissions	98.7
Mental Health Not Good	98.0
Chronic Kidney Disease	95.6
Obesity	98.2
Pedestrian Injuries	49.0
Physical Health Not Good	99.0
Stroke	96.9
Health Risk Behaviors	—
Binge Drinking	26.9
Current Smoker	97.2
No Leisure Time for Physical Activity	94.0
Climate Change Exposures	—
Wildfire Risk	96.0
SLR Inundation Area	0.0
Children	55.0
Elderly	63.3
English Speaking	61.1
Foreign-born	76.2
Outdoor Workers	87.8

Climate Change Adaptive Capacity	—
Impervious Surface Cover	86.1
Traffic Density	67.6
Traffic Access	23.0
Other Indices	—
Hardship	3.3
Other Decision Support	—
2016 Voting	91.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	5.00
Healthy Places Index Score for Project Location (b)	98.0
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	Per site plan
Operations: Vehicle Data	1,080 existing ADT per LMA provided by LLG (2023).

Proposed Use Lusk on Lusk Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Proposed Use Lusk on Lusk
Construction Start Date	12/3/2024
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.60
Precipitation (days)	15.4
Location	32.90132232062396, -117.20130418847545
County	San Diego
City	San Diego
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6359
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.16

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

Research & Development	1,283	1000sqft	29.5	1,283,190	252,150	—	—	—
Fast Food Restaurant w/o Drive Thru	30.0	1000sqft	0.69	30,000	0.00	—	—	—
Enclosed Parking with Elevator	1,083	1000sqft	24.9	1,083,080	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13.5	49.8	129	97.2	0.41	3.66	17.3	21.0	3.42	5.50	8.92	—	55,162	55,162	2.98	5.87	78.2	57,064
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	37.8	46.1	131	94.9	0.41	3.66	20.4	21.9	3.42	5.50	8.92	—	55,166	55,166	2.98	5.87	2.02	56,992
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.9	18.0	50.2	62.6	0.15	1.46	9.30	10.8	1.35	2.35	3.70	—	23,538	23,538	1.16	2.11	18.8	24,214
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.99	3.28	9.17	11.4	0.03	0.27	1.70	1.96	0.25	0.43	0.67	—	3,897	3,897	0.19	0.35	3.11	4,009

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	13.5	9.63	129	97.2	0.41	3.66	17.3	21.0	3.42	5.50	8.92	—	55,162	55,162	2.98	5.87	78.2	57,064
2026	9.68	7.85	50.0	83.8	0.15	1.39	9.94	11.3	1.29	2.44	3.72	—	25,719	25,719	1.08	1.74	52.1	26,317
2027	9.91	49.8	49.1	89.8	0.15	1.28	11.4	12.7	1.18	2.78	3.97	—	27,113	27,113	1.13	1.74	52.3	27,711
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	37.8	36.0	47.4	80.4	0.19	1.53	20.4	21.9	1.35	3.87	5.22	—	28,483	28,483	1.46	3.98	1.41	29,708
2025	37.7	35.9	131	94.9	0.41	3.66	20.4	21.9	3.42	5.50	8.92	—	55,166	55,166	2.98	5.87	2.02	56,992
2026	9.41	7.80	50.8	79.5	0.15	1.39	9.94	11.3	1.29	2.44	3.72	—	25,271	25,271	1.09	1.76	1.35	25,825
2027	9.01	46.1	48.8	77.2	0.15	1.26	9.94	11.2	1.17	2.44	3.60	—	24,935	24,935	1.09	1.70	1.22	25,470
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.14	0.12	0.77	0.80	< 0.005	0.02	0.10	0.12	0.02	0.02	0.04	—	377	377	0.02	0.04	0.25	390
2025	10.9	9.33	50.2	62.6	0.15	1.46	9.30	10.8	1.35	2.35	3.70	—	23,538	23,538	1.16	2.11	18.8	24,214
2026	6.70	5.55	36.2	56.9	0.11	0.99	7.03	8.02	0.92	1.72	2.64	—	18,097	18,097	0.78	1.26	16.1	18,508
2027	4.93	18.0	25.9	42.8	0.08	0.67	5.44	6.11	0.62	1.33	1.95	—	13,423	13,423	0.58	0.86	11.0	13,706
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.03	0.02	0.14	0.15	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62.3	62.3	< 0.005	0.01	0.04	64.6
2025	1.99	1.70	9.17	11.4	0.03	0.27	1.70	1.96	0.25	0.43	0.67	—	3,897	3,897	0.19	0.35	3.11	4,009
2026	1.22	1.01	6.61	10.4	0.02	0.18	1.28	1.46	0.17	0.31	0.48	—	2,996	2,996	0.13	0.21	2.66	3,064
2027	0.90	3.28	4.73	7.81	0.01	0.12	0.99	1.11	0.11	0.24	0.36	—	2,222	2,222	0.10	0.14	1.82	2,269

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	77.6	101	167	400	0.98	5.11	75.6	80.7	5.07	19.2	24.2	1,465	105,789	107,255	158	6.64	313	113,489
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	76.9	99.9	169	378	0.94	5.11	75.6	80.7	5.07	19.2	24.2	1,465	102,011	103,476	158	6.82	85.7	109,540
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	32.5	59.5	30.7	219	0.58	0.69	53.5	54.2	0.67	13.6	14.2	1,465	64,510	65,975	156	5.75	152	71,747
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.93	10.9	5.60	40.0	0.11	0.13	9.76	9.88	0.12	2.47	2.60	243	10,680	10,923	25.9	0.95	25.1	11,879

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	43.8	39.9	29.2	322	0.83	0.59	75.6	76.2	0.56	19.2	19.7	—	84,742	84,742	3.56	3.05	234	85,974
Area	—	30.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	4,791	4,791	3.51	0.42	—	5,005
Water	—	—	—	—	—	—	—	—	—	—	—	1,226	541	1,767	126	3.04	—	5,826
Waste	—	—	—	—	—	—	—	—	—	—	—	239	0.00	239	23.9	0.00	—	835

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79.7	79.7
Stationary	33.8	30.7	137	78.3	0.15	4.52	—	4.52	4.52	—	4.52	—	15,716	15,716	0.63	0.12	—	15,768
Total	77.6	101	167	400	0.98	5.11	75.6	80.7	5.07	19.2	24.2	1,465	105,789	107,255	158	6.64	313	113,489
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	43.2	39.2	32.1	300	0.79	0.59	75.6	76.2	0.56	19.2	19.7	—	80,963	80,963	3.75	3.23	6.06	82,026
Area	—	30.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	4,791	4,791	3.51	0.42	—	5,005
Water	—	—	—	—	—	—	—	—	—	—	—	1,226	541	1,767	126	3.04	—	5,826
Waste	—	—	—	—	—	—	—	—	—	—	—	239	0.00	239	23.9	0.00	—	835
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79.7	79.7
Stationary	33.8	30.7	137	78.3	0.15	4.52	—	4.52	4.52	—	4.52	—	15,716	15,716	0.63	0.12	—	15,768
Total	76.9	99.9	169	378	0.94	5.11	75.6	80.7	5.07	19.2	24.2	1,465	102,011	103,476	158	6.82	85.7	109,540
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	30.5	27.7	22.6	215	0.57	0.42	53.5	53.9	0.40	13.6	14.0	—	58,239	58,239	2.64	2.29	72.0	59,058
Area	—	30.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	4,791	4,791	3.51	0.42	—	5,005
Water	—	—	—	—	—	—	—	—	—	—	—	1,226	541	1,767	126	3.04	—	5,826
Waste	—	—	—	—	—	—	—	—	—	—	—	239	0.00	239	23.9	0.00	—	835
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79.7	79.7
Stationary	2.02	1.84	8.03	4.68	0.01	0.27	—	0.27	0.27	—	0.27	—	939	939	0.04	0.01	—	942
Total	32.5	59.5	30.7	219	0.58	0.69	53.5	54.2	0.67	13.6	14.2	1,465	64,510	65,975	156	5.75	152	71,747
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.57	5.05	4.13	39.2	0.10	0.08	9.76	9.83	0.07	2.47	2.55	—	9,642	9,642	0.44	0.38	11.9	9,778
Area	—	5.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	793	793	0.58	0.07	—	829
Water	—	—	—	—	—	—	—	—	—	—	—	203	89.5	293	20.9	0.50	—	965
Waste	—	—	—	—	—	—	—	—	—	—	—	39.5	0.00	39.5	3.95	0.00	—	138
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.2	13.2
Stationary	0.37	0.33	1.47	0.85	< 0.005	0.05	—	0.05	0.05	—	0.05	—	155	155	0.01	< 0.005	—	156
Total	5.93	10.9	5.60	40.0	0.11	0.13	9.76	9.88	0.12	2.47	2.60	243	10,680	10,923	25.9	0.95	25.1	11,879

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	35.9	35.4	14.2	68.0	0.04	1.08	—	1.08	0.90	—	0.90	—	3,583	3,583	0.15	0.03	—	3,596
Demolition	—	—	—	—	—	—	13.9	13.9	—	2.10	2.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	0.03	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.01	7.01	< 0.005	< 0.005	—	7.04

Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.16	1.16	< 0.005	< 0.005	—	1.16
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.11	1.30	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	274	274	0.01	0.01	0.03	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	1.77	0.45	33.1	11.1	0.15	0.45	6.26	6.71	0.45	1.71	2.16	—	24,626	24,626	1.30	3.94	1.38	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.2	48.2	< 0.005	0.01	0.05	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.98	7.98	< 0.005	< 0.005	0.01	—

3.3. Demolition (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	35.8	35.3	13.1	67.9	0.04	1.02	—	1.02	0.84	—	0.84	—	3,584	3,584	0.15	0.03	—	3,597
Demolition	—	—	—	—	—	—	13.9	13.9	—	2.10	2.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.85	3.80	1.41	7.31	< 0.005	0.11	—	0.11	0.09	—	0.09	—	386	386	0.02	< 0.005	—	387
Demolition	—	—	—	—	—	—	1.49	1.49	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	0.69	0.26	1.33	< 0.005	0.02	—	0.02	0.02	—	0.02	—	63.9	63.9	< 0.005	< 0.005	—	64.1
Demolition	—	—	—	—	—	—	0.27	0.27	—	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	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.10	1.22	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	269	269	0.01	0.01	0.03	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	1.76	0.45	31.6	11.1	0.15	0.45	6.26	6.71	0.45	1.71	2.16	—	24,123	24,123	1.30	3.79	1.37	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.2	29.2	< 0.005	< 0.005	0.05	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.19	0.05	3.41	1.18	0.02	0.05	0.67	0.72	0.05	0.18	0.23	—	2,596	2,596	0.14	0.41	2.45	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.83	4.83	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.03	0.01	0.62	0.22	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	430	430	0.02	0.07	0.41	—

3.5. Site Preparation (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.70	5.99	8.67	0.02	0.24	—	0.24	0.22	—	0.22	—	1,797	1,797	0.07	0.01	—	1,804

Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.33	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.5	98.5	< 0.005	< 0.005	—	98.8
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.4
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.54	0.00	0.00	0.11	0.11	0.00	0.02	0.02	—	114	114	0.01	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.36	0.12	6.34	2.55	0.03	0.07	0.97	1.04	0.07	0.26	0.33	—	3,944	3,944	0.24	0.63	0.21	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.31	6.31	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.02	0.01	0.35	0.14	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	216	216	0.01	0.03	0.19	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.05	1.05	< 0.005	< 0.005	< 0.005	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	0.01	0.03	—

3.7. Grading (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	8.69	7.31	67.3	59.5	0.15	2.74	—	2.74	2.52	—	2.52	—	16,174	16,174	0.66	0.13	—	16,229
Dust From Material Movement	—	—	—	—	—	—	7.87	7.87	—	2.93	2.93	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	8.69	7.31	67.3	59.5	0.15	2.74	—	2.74	2.52	—	2.52	—	16,174	16,174	0.66	0.13	—	16,229

Dust From Material Movement	—	—	—	—	—	—	7.87	7.87	—	2.93	2.93	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.31	1.10	10.1	8.96	0.02	0.41	—	0.41	0.38	—	0.38	—	2,437	2,437	0.10	0.02	—	2,445
Dust From Material Movement	—	—	—	—	—	—	1.19	1.19	—	0.44	0.44	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.85	1.63	< 0.005	0.08	—	0.08	0.07	—	0.07	—	403	403	0.02	< 0.005	—	405
Dust From Material Movement	—	—	—	—	—	—	0.22	0.22	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.11	1.62	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	332	332	0.02	0.01	1.25	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	3.45	1.17	55.0	23.5	0.24	0.65	9.07	9.72	0.65	2.48	3.13	—	36,177	36,177	2.20	5.70	76.5	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.15	0.14	0.12	1.42	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	314	314	0.02	0.01	0.03	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	3.35	1.08	57.1	23.9	0.24	0.65	9.07	9.72	0.65	2.48	3.13	—	36,205	36,205	2.20	5.70	1.98	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	47.7	47.7	< 0.005	< 0.005	0.08	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.51	0.17	8.57	3.57	0.04	0.10	1.36	1.45	0.10	0.37	0.47	—	5,453	5,453	0.33	0.86	4.97	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.89	7.89	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.09	0.03	1.56	0.65	0.01	0.02	0.25	0.27	0.02	0.07	0.09	—	903	903	0.06	0.14	0.82	—

3.9. Building Construction (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.44	4.53	36.7	40.3	0.08	1.39	—	1.39	1.28	—	1.28	—	7,909	7,909	0.32	0.06	—	7,936
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.44	4.53	36.7	40.3	0.08	1.39	—	1.39	1.28	—	1.28	—	7,909	7,909	0.32	0.06	—	7,936

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.48	2.07	16.7	18.4	0.04	0.64	—	0.64	0.58	—	0.58	—	3,606	3,606	0.15	0.03	—	3,618
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.38	3.05	3.35	0.01	0.12	—	0.12	0.11	—	0.11	—	597	597	0.02	< 0.005	—	599
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.85	3.54	2.69	40.7	0.00	0.00	7.43	7.43	0.00	1.74	1.74	—	8,331	8,331	0.39	0.29	31.2	—
Vendor	0.84	0.40	13.1	6.07	0.07	0.13	2.51	2.65	0.13	0.69	0.83	—	9,829	9,829	0.43	1.39	25.5	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.79	3.48	2.99	35.6	0.00	0.00	7.43	7.43	0.00	1.74	1.74	—	7,867	7,867	0.43	0.31	0.81	—
Vendor	0.82	0.38	13.6	6.25	0.07	0.13	2.51	2.65	0.13	0.69	0.83	—	9,835	9,835	0.43	1.39	0.66	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.71	1.57	1.36	16.5	0.00	0.00	3.35	3.35	0.00	0.79	0.79	—	3,619	3,619	0.19	0.14	6.15	—
Vendor	0.38	0.18	6.15	2.81	0.03	0.06	1.14	1.20	0.06	0.31	0.37	—	4,483	4,483	0.20	0.63	5.04	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.31	0.29	0.25	3.01	0.00	0.00	0.61	0.61	0.00	0.14	0.14	—	599	599	0.03	0.02	1.02	—
Vendor	0.07	0.03	1.12	0.51	0.01	0.01	0.21	0.22	0.01	0.06	0.07	—	742	742	0.03	0.10	0.83	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.11. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.21	4.35	35.1	40.0	0.08	1.26	—	1.26	1.16	—	1.16	—	7,909	7,909	0.32	0.06	—	7,936
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.21	4.35	35.1	40.0	0.08	1.26	—	1.26	1.16	—	1.16	—	7,909	7,909	0.32	0.06	—	7,936
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.72	3.11	25.1	28.6	0.06	0.90	—	0.90	0.83	—	0.83	—	5,649	5,649	0.23	0.05	—	5,668
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.68	0.57	4.58	5.22	0.01	0.16	—	0.16	0.15	—	0.15	—	935	935	0.04	0.01	—	938

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.70	3.17	2.43	38.0	0.00	0.00	7.43	7.43	0.00	1.74	1.74	—	8,162	8,162	0.39	0.29	28.6	—
Vendor	0.77	0.33	12.4	5.85	0.07	0.13	2.51	2.65	0.13	0.69	0.83	—	9,648	9,648	0.37	1.39	23.5	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.44	3.14	2.74	33.5	0.00	0.00	7.43	7.43	0.00	1.74	1.74	—	7,708	7,708	0.41	0.31	0.74	—
Vendor	0.75	0.31	12.9	5.95	0.07	0.13	2.51	2.65	0.13	0.69	0.83	—	9,654	9,654	0.37	1.39	0.61	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.43	2.21	1.95	24.2	0.00	0.00	5.25	5.25	0.00	1.23	1.23	—	5,555	5,555	0.29	0.22	8.81	—
Vendor	0.54	0.23	9.16	4.19	0.05	0.09	1.78	1.87	0.09	0.49	0.59	—	6,893	6,893	0.26	0.99	7.29	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.44	0.40	0.36	4.41	0.00	0.00	0.96	0.96	0.00	0.22	0.22	—	920	920	0.05	0.04	1.46	—
Vendor	0.10	0.04	1.67	0.76	0.01	0.02	0.32	0.34	0.02	0.09	0.11	—	1,141	1,141	0.04	0.16	1.21	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.13. Building Construction (2027) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.01	4.18	33.8	39.8	0.08	1.13	—	1.13	1.04	—	1.04	—	7,908	7,908	0.32	0.06	—	7,935
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.01	4.18	33.8	39.8	0.08	1.13	—	1.13	1.04	—	1.04	—	7,908	7,908	0.32	0.06	—	7,935
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.51	2.09	16.9	20.0	0.04	0.56	—	0.56	0.52	—	0.52	—	3,962	3,962	0.16	0.03	—	3,975
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.46	0.38	3.09	3.64	0.01	0.10	—	0.10	0.09	—	0.09	—	656	656	0.03	0.01	—	658
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.39	3.10	2.16	36.0	0.00	0.00	7.43	7.43	0.00	1.74	1.74	—	8,024	8,024	0.37	0.29	26.0	—
Vendor	0.70	0.33	11.9	5.62	0.07	0.13	2.51	2.65	0.13	0.69	0.83	—	9,443	9,443	0.36	1.32	21.1	—
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	0.00	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.33	3.02	2.71	31.6	0.00	0.00	7.43	7.43	0.00	1.74	1.74	—	7,578	7,578	0.41	0.31	0.67	—
Vendor	0.67	0.31	12.3	5.71	0.07	0.13	2.51	2.65	0.13	0.69	0.83	—	9,449	9,449	0.37	1.32	0.55	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.66	1.50	1.35	16.0	0.00	0.00	3.68	3.68	0.00	0.86	0.86	—	3,830	3,830	0.19	0.15	5.63	—
Vendor	0.34	0.16	6.14	2.86	0.03	0.07	1.25	1.31	0.07	0.35	0.41	—	4,732	4,732	0.18	0.66	4.56	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.30	0.27	0.25	2.93	0.00	0.00	0.67	0.67	0.00	0.16	0.16	—	634	634	0.03	0.02	0.93	—
Vendor	0.06	0.03	1.12	0.52	0.01	0.01	0.23	0.24	0.01	0.06	0.08	—	783	783	0.03	0.11	0.76	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.15. Paving (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	12.6	16.7	0.04	0.41	—	0.41	0.37	—	0.37	—	4,002	4,002	0.16	0.03	—	4,016
Paving	—	2.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	12.6	16.7	0.04	0.41	—	0.41	0.37	—	0.37	—	4,002	4,002	0.16	0.03	—	4,016
Paving	—	2.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.04	1.37	< 0.005	0.03	—	0.03	0.03	—	0.03	—	329	329	0.01	< 0.005	—	330
Paving	—	0.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.19	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	54.5	54.5	< 0.005	< 0.005	—	54.6
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	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.08	1.33	0.00	0.00	0.27	0.27	0.00	0.06	0.06	—	297	297	0.01	0.01	0.96	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.10	1.17	0.00	0.00	0.27	0.27	0.00	0.06	0.06	—	280	280	0.02	0.01	0.02	—

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.3	23.3	< 0.005	< 0.005	0.03	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.85	3.85	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.17. Architectural Coating (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	41.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134

Architect Coatings	—	41.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.27	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	43.9	43.9	< 0.005	< 0.005	—	44.0
Architectural Coatings	—	13.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.27	7.27	< 0.005	< 0.005	—	7.29
Architectural Coatings	—	2.49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.68	0.62	0.43	7.20	0.00	0.00	1.49	1.49	0.00	0.35	0.35	—	1,605	1,605	0.07	0.06	5.20	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.67	0.60	0.54	6.32	0.00	0.00	1.49	1.49	0.00	0.35	0.35	—	1,516	1,516	0.08	0.06	0.13	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.18	2.10	0.00	0.00	0.48	0.48	0.00	0.11	0.11	—	503	503	0.03	0.02	0.74	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.38	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	83.2	83.2	< 0.005	< 0.005	0.12	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

3.19. Trenching (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.14	0.96	6.84	9.60	0.02	0.27	—	0.27	0.25	—	0.25	—	2,361	2,361	0.10	0.02	—	2,369
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.14	0.96	6.84	9.60	0.02	0.27	—	0.27	0.25	—	0.25	—	2,361	2,361	0.10	0.02	—	2,369
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.41	0.34	2.44	3.42	0.01	0.10	—	0.10	0.09	—	0.09	—	841	841	0.03	0.01	—	844
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.44	0.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	139	139	0.01	< 0.005	—	140
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.58	0.00	0.00	0.11	0.11	0.00	0.02	0.02	—	119	119	0.01	< 0.005	0.44	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.51	0.00	0.00	0.11	0.11	0.00	0.02	0.02	—	112	112	0.01	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.2	40.2	< 0.005	< 0.005	0.07	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.66	6.66	< 0.005	< 0.005	0.01	—
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	—

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	43.8	39.9	29.2	322	0.83	0.59	75.6	76.2	0.56	19.2	19.7	—	84,742	84,742	3.56	3.05	234	85,974
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	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	43.8	39.9	29.2	322	0.83	0.59	75.6	76.2	0.56	19.2	19.7	—	84,742	84,742	3.56	3.05	234	85,974
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	43.2	39.2	32.1	300	0.79	0.59	75.6	76.2	0.56	19.2	19.7	—	80,963	80,963	3.75	3.23	6.06	82,026

Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	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	43.2	39.2	32.1	300	0.79	0.59	75.6	76.2	0.56	19.2	19.7	—	80,963	80,963	3.75	3.23	6.06	82,026
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	5.57	5.05	4.13	39.2	0.10	0.08	9.76	9.83	0.07	2.47	2.55	—	9,642	9,642	0.44	0.38	11.9	9,778
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	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	5.57	5.05	4.13	39.2	0.10	0.08	9.76	9.83	0.07	2.47	2.55	—	9,642	9,642	0.44	0.38	11.9	9,778

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

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

Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	4,167	4,167	3.05	0.37	—	4,353
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	130	130	0.10	0.01	—	136
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	494	494	0.36	0.04	—	516
Total	—	—	—	—	—	—	—	—	—	—	—	—	4,791	4,791	3.51	0.42	—	5,005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	4,167	4,167	3.05	0.37	—	4,353
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	130	130	0.10	0.01	—	136
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	494	494	0.36	0.04	—	516
Total	—	—	—	—	—	—	—	—	—	—	—	—	4,791	4,791	3.51	0.42	—	5,005
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	690	690	0.50	0.06	—	721

Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	21.6	21.6	0.02	< 0.005	—	22.6
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	81.8	81.8	0.06	0.01	—	85.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	793	793	0.58	0.07	—	829

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Researc & Development	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Researc h & Development	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	28.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	30.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	28.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	30.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	5.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—	—	—	—	1,209	533	1,742	124	2.99	—	5,743
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	17.4	7.66	25.1	1.79	0.04	—	82.8
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1,226	541	1,767	126	3.04	—	5,826
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—	—	—	—	1,209	533	1,742	124	2.99	—	5,743
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	17.4	7.66	25.1	1.79	0.04	—	82.8
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1,226	541	1,767	126	3.04	—	5,826
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Research & Development	—	—	—	—	—	—	—	—	—	—	—	200	88.3	288	20.6	0.50	—	951
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	2.89	1.27	4.16	0.30	0.01	—	13.7
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	203	89.5	293	20.9	0.50	—	965

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—	—	—	—	52.6	0.00	52.6	5.25	0.00	—	184
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	186	0.00	186	18.6	0.00	—	652
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	239	0.00	239	23.9	0.00	—	835
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—	—	—	—	52.6	0.00	52.6	5.25	0.00	—	184
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	186	0.00	186	18.6	0.00	—	652
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	239	0.00	239	23.9	0.00	—	835
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—	—	—	—	8.70	0.00	8.70	0.87	0.00	—	30.4
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	30.8	0.00	30.8	3.08	0.00	—	108
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	39.5	0.00	39.5	3.95	0.00	—	138

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.8	32.8
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46.9	46.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79.7	79.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.8	32.8
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46.9	46.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79.7	79.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.43	5.43

Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.76	7.76
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.2	13.2

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	33.8	30.7	137	78.3	0.15	4.52	—	4.52	4.52	—	4.52	—	15,716	15,716	0.63	0.12	—	—
undefined	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15,768
Total	33.8	30.7	137	78.3	0.15	4.52	—	4.52	4.52	—	4.52	—	15,716	15,716	0.63	0.12	—	15,768
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	33.8	30.7	137	78.3	0.15	4.52	—	4.52	4.52	—	4.52	—	15,716	15,716	0.63	0.12	—	—
undefined	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15,768
Total	33.8	30.7	137	78.3	0.15	4.52	—	4.52	4.52	—	4.52	—	15,716	15,716	0.63	0.12	—	15,768
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.37	0.33	1.47	0.85	< 0.005	0.05	—	0.05	0.05	—	0.05	—	155	155	0.01	< 0.005	—	—
undefined	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	156
Total	0.37	0.33	1.47	0.85	< 0.005	0.05	—	0.05	0.05	—	0.05	—	155	155	0.01	< 0.005	—	156

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)

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

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

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

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

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	12/31/2024	2/24/2025	5.00	40.0	—
Site Preparation	Site Preparation	12/3/2024	12/30/2024	5.00	20.0	—

Grading	Grading	2/25/2025	5/12/2025	5.00	55.0	—
Building Construction	Building Construction	5/13/2025	9/13/2027	5.00	610	—
Paving	Paving	9/14/2027	10/25/2027	5.00	30.0	—
Architectural Coating	Architectural Coating	5/11/2027	10/25/2027	5.00	120	—
Utility Undergrounding	Trenching	2/25/2025	8/25/2025	5.00	130	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Crushing/Proc. Equipment	Gasoline	Average	1.00	8.00	12.0	0.85
Demolition	Off-Highway Trucks	Diesel	Average	1.00	4.00	376	0.38
Demolition	Rough Terrain Forklifts	Diesel	Average	2.00	8.00	96.0	0.40
Demolition	Rubber Tired Loaders	Diesel	Average	2.00	8.00	150	0.36
Demolition	Skid Steer Loaders	Diesel	Average	2.00	8.00	71.0	0.37
Demolition	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Site Preparation	Skid Steer Loaders	Diesel	Average	2.00	8.00	71.0	0.37
Site Preparation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Site Preparation	Off-Highway Trucks	Diesel	Average	1.00	4.00	376	0.38
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	6.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37

Grading	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Grading	Off-Highway Trucks	Diesel	Average	1.00	4.00	376	0.38
Grading	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Building Construction	Cranes	Diesel	Average	3.00	7.00	367	0.29
Building Construction	Rough Terrain Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	2.00	8.00	14.0	0.74
Building Construction	Air Compressors	Diesel	Average	12.0	6.00	37.0	0.48
Building Construction	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Building Construction	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Building Construction	Cement and Mortar Mixers	Diesel	Average	2.00	8.00	10.0	0.56
Building Construction	Sweepers/Scrubbers	Diesel	Average	3.00	4.00	36.0	0.46
Building Construction	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Building Construction	Aerial Lifts	Diesel	Average	9.00	2.00	46.0	0.31
Building Construction	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
Building Construction	Off-Highway Trucks	Diesel	Average	2.00	4.00	376	0.38
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Paving	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Paving	Aerial Lifts	Diesel	Average	1.00	2.00	46.0	0.31
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Paving	Cranes	Diesel	Average	1.00	8.00	367	0.29
Paving	Off-Highway Trucks	Diesel	Average	2.00	4.00	376	0.38
Paving	Sweepers/Scrubbers	Diesel	Average	1.00	4.00	36.0	0.46
Paving	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Paving	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43

Paving	Rough Terrain Forklifts	Diesel	Average	2.00	8.00	96.0	0.40
Paving	Skid Steer Loaders	Diesel	Average	2.00	8.00	71.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Utility Undergrounding	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Utility Undergrounding	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Utility Undergrounding	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Utility Undergrounding	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Utility Undergrounding	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	30.0	12.0	LDA,LDT1,LDT2
Demolition	Vendor	—	7.63	HHDT,MHDT
Demolition	Hauling	250	27.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	12.5	12.0	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.63	HHDT,MHDT
Site Preparation	Hauling	116	9.00	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	35.0	12.0	LDA,LDT1,LDT2
Grading	Vendor	—	7.63	HHDT,MHDT
Grading	Hauling	1,087	9.00	HHDT

Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	878	12.0	LDA,LDT1,LDT2
Building Construction	Vendor	393	7.63	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	32.5	12.0	LDA,LDT1,LDT2
Paving	Vendor	—	7.63	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	176	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
Utility Undergrounding	—	—	—	—
Utility Undergrounding	Worker	12.5	12.0	LDA,LDT1,LDT2
Utility Undergrounding	Vendor	—	7.63	HHDT,MHDT
Utility Undergrounding	Hauling	0.00	20.0	HHDT
Utility Undergrounding	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

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	0.00	0.00	2,018,835	0.00	64,980

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	40,026	—
Site Preparation	0.00	18,553	0.00	0.00	—
Grading	0.00	174,000	413	0.00	—
Paving	0.00	0.00	0.00	0.00	30.4

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Research & Development	5.50	22%
Fast Food Restaurant w/o Drive Thru	0.00	0%
Enclosed Parking with Elevator	24.9	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	540	0.03	< 0.005
2025	0.00	540	0.03	< 0.005
2026	0.00	45.1	0.03	< 0.005
2027	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
Research & Development	10,266	0.00	0.00	2,676,368	107,029	0.00	0.00	27,904,075
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	2,018,524	662,010	64,985

5.10.3. Landscape Equipment

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)
Research & Development	33,721,507	45.1	0.0330	0.0040	0.00
Fast Food Restaurant w/o Drive Thru	1,055,911	45.1	0.0330	0.0040	0.00
Enclosed Parking with Elevator	3,998,116	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)
Research & Development	630,936,756	3,768,171
Fast Food Restaurant w/o Drive Thru	9,106,011	0.00
Enclosed Parking with Elevator	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)

Research & Development	97.5	—
Fast Food Restaurant w/o Drive Thru	346	—
Enclosed Parking with Elevator	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Research & Development	Household refrigerators and/or freezers	R-134a	1,430	0.45	0.60	0.00	1.00
Research & Development	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Fast Food Restaurant w/o Drive Thru	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Fast Food Restaurant w/o Drive Thru	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Fast Food Restaurant w/o Drive Thru	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	4.00	9.50	4,680	0.73

Emergency Generator	Diesel	1.00	0.00	9.50	4,681	0.73
Emergency Generator	Diesel	1.00	0.00	9.50	3,621	0.73
Emergency Generator	Diesel	1.00	0.00	9.50	3,621	0.73
Emergency Generator	Diesel	1.00	0.00	9.50	422	0.73
Emergency Generator	Diesel	1.00	0.00	9.50	422	0.73

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

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	11.3	annual days of extreme heat
Extreme Precipitation	2.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	1.34	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	1	0	0	N/A

Wildfire	1	0	0	N/A
Flooding	0	0	0	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	1	1	1	2
Wildfire	1	1	1	2
Flooding	1	1	1	2
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	47.0
AQ-PM	43.5
AQ-DPM	27.1
Drinking Water	29.0
Lead Risk Housing	1.50
Pesticides	0.00
Toxic Releases	16.7
Traffic	60.1
Effect Indicators	—
CleanUp Sites	54.6
Groundwater	47.4
Haz Waste Facilities/Generators	93.6
Impaired Water Bodies	83.0
Solid Waste	9.67
Sensitive Population	—
Asthma	2.55
Cardio-vascular	0.92
Low Birth Weights	30.1
Socioeconomic Factor Indicators	—
Education	16.8
Housing	1.29
Linguistic	22.9
Poverty	5.80

Unemployment	29.4

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	99.79468754
Employed	91.08174002
Median HI	95.85525472
Education	—
Bachelor's or higher	94.16142692
High school enrollment	100
Preschool enrollment	71.66688053
Transportation	—
Auto Access	92.6344155
Active commuting	23.61093289
Social	—
2-parent households	95.43179777
Voting	86.71885025
Neighborhood	—
Alcohol availability	93.82779417
Park access	81.35506224
Retail density	93.37867317
Supermarket access	11.44616964
Tree canopy	76.82535609
Housing	—
Homeownership	81.7400231

Housing habitability	98.92210959
Low-inc homeowner severe housing cost burden	88.0790453
Low-inc renter severe housing cost burden	99.08892596
Uncrowded housing	91.95431798
Health Outcomes	—
Insured adults	92.49326318
Arthritis	93.3
Asthma ER Admissions	97.8
High Blood Pressure	91.8
Cancer (excluding skin)	55.0
Asthma	99.2
Coronary Heart Disease	96.0
Chronic Obstructive Pulmonary Disease	98.1
Diagnosed Diabetes	92.6
Life Expectancy at Birth	84.7
Cognitively Disabled	85.7
Physically Disabled	95.1
Heart Attack ER Admissions	98.7
Mental Health Not Good	98.0
Chronic Kidney Disease	95.6
Obesity	98.2
Pedestrian Injuries	49.0
Physical Health Not Good	99.0
Stroke	96.9
Health Risk Behaviors	—
Binge Drinking	26.9
Current Smoker	97.2

No Leisure Time for Physical Activity	94.0
Climate Change Exposures	—
Wildfire Risk	96.0
SLR Inundation Area	0.0
Children	55.0
Elderly	63.3
English Speaking	61.1
Foreign-born	76.2
Outdoor Workers	87.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	86.1
Traffic Density	67.6
Traffic Access	23.0
Other Indices	—
Hardship	3.3
Other Decision Support	—
2016 Voting	91.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	5.00
Healthy Places Index Score for Project Location (b)	98.0
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
Construction: Construction Phases	Construction schedule provided by client
Construction: Off-Road Equipment	Construction equipment list provided by client
Construction: Trips and VMT	Per client, demolition material would be hauled to Otay Landfill 27 miles away and soil/vegetation would be hauled to Miramar Greenery 9 miles away. Soil hauling would occur over 20 days of the 55-day grading period and the associated max. daily trips were increased.
Construction: Architectural Coatings	Exterior walls will be precast
Construction: Paving	5.49 acres paving, including 1.22 acres asphalt per client. 24.9 acres within parking area
Operations: Vehicle Data	Per traffic report, project to generate 8 trips per KSF of R&D use, totaling 10,266 trips (LLG 2023)
Operations: Energy Use	All electric buildings proposed, natural gas energy requirements added to electric consumption assumptions.
Operations: Emergency Generators and Fire Pumps	Per client/manufacturer, generators would be tested for 4 hours once per year and 30 minutes once per month.