Stantec

Air Quality, Greenhouse Gas, and Energy Impact Assessment

Lancaster 70th Residential Development Project

September 25, 2023

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ABBREVIATIONS

$\mu g/m^3$	Micrograms Per Cubic Meter
AB	Assembly Bill
ACBMs	Asbestos-Containing Building Materials
AVAQMD	Antelope Valley Air Quality Management District
AVTA	Antelope Valley Transit Authority
C. immitis	Coccidiodes immitis
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CPUC	California Public Utilities Commission
DPM	Diesel Particulate Matter
DRRP	Diesel Risk Reduction Plan
EISA	Energy Independence and Security Act
EO	Executive Order
EPCA	Energy Policy and Conservation Act
FCAA	Federal Clean Air Act
GHG	Greenhouse Gases
GWP	Global Warming Potential
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons
LCE	Lancaster Energy
LCFS	Low Carbon Fuel Standard
LEV	Low-Emission Vehicle
MDAB	Mojave Desert Air Basin
MMT	Million Metric Tons
$MTCO_2e$	Metric Tons of Carbon Dioxide Equivalents
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHTSA	National Highway Traffic Safety Administration
NOA	Naturally Occurring Asbestos
NF_3	Nitrogen Trifluoride
NO_X	Oxides of Nitrogen
NO_2	Nitrogen Dioxide

O_3	Ozone
Pb	Lead
PFCs	Perfluorocarbons
PM	Particulate Matter
$PM_{2.5}$	Fine particulate matter; particulate matter 2.5 microns or smaller
PM_{10}	Particulate matter; particulate matter 10 microns or smaller
ppb	parts per billion
ppm	parts per million
Project	Lancaster 70th Residential Development Project
R-10,000	Urban Residential, Transitional Density
RACT	Reasonable Available Control Technologies
REC	Renewable Energy Credit
RFS	Renewable Fuel Standard
ROG	Reactive Organic Gases
RPS	Renewable Portfolio Standard
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SF_6	Sulfur Hexafluoride
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SoCalGas	Southern California Gas Company
TAC	Toxic Air Contaminant
UR	Urban Residential
USEIA	United States Energy Information Administration
USEPA	United States Environmental Protection Agency
USC	United States Code
USGS	United States Geological Survey
VMT	Vehicle Miles Traveled
ZEV	Zero Emission Vehicle

1.0 EXECUTIVE SUMMARY

This purpose of the Air Quality, Greenhouse Gas, and Energy Impact Assessment is to evaluate the existing conditions and potential impacts to air quality, greenhouse gas (GHG) emissions, and energy resource areas from the Lancaster 70th Residential Development Project (Project). This analysis is intended to support preparation of a California Environmental Quality Act (CEQA) document.

1.1 PROJECT UNDERSTANDING

The 17.8-acre Project site consists of a vacant parcel (Assessor's Parcel Number 3204-004-024) located southeast of the intersection of West Avenue L and 70th Street West in the City of Lancaster, California. The Project would entail development of the Project site with 56 single-family residential units and associated improvements.

1.2 SUMMARY OF ANALYSIS

Impact AIR-1:	The Project would not conflict with or obstruct implementation of the applicable air quality plan. **Less Than Significant Impact.**
Impact AIR-2:	The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. **Less Than Significant Impact.**
Impact AIR-3:	The Project would not expose sensitive receptors to substantial pollutant concentrations. **Less Than Significant Impact.**
Impact AIR-4:	The Project would not result in other emissions (such as those leading to odors) affecting a substantial number of people. **Less Than Significant Impact.**
Impact GHG-1:	The Project would not generate direct and indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less Than Significant Impact.**
Impact GHG-2:	The Project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less Than Significant Impact.**
Impact ENR-1:	The Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. **Less Than Significant Impact.**

Impact ENR-2: The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **Less Than Significant Impact.**

2.0 INTRODUCTION

2.1 PURPOSE OF ANALYSIS

The purpose of this Air Quality, Greenhouse Gas, and Energy Impact Assessment is to analyze potential air quality, GHG, and energy impacts that could occur from the construction and operation of the Project. This assessment was conducted within the context of CEQA. This evaluation relies on guidance and thresholds established by the United States Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the Antelope Valley Air Quality Management District (AVAQMD).

2.2 PROJECT DESCRIPTION

The Project would involve subdivision of the approximately 17.8-acre site, identified as Assessor's Parcel Number 3204-004-024, and construction of 56 single-family residential units and associated improvements. The proposed units would not include natural gas infrastructure. Access to the site would be provided by a new driveway from 70th Street West. In addition, the Project would provide internal roadways that are stubbed for eventual connection to the planned residential development immediately east of the site.

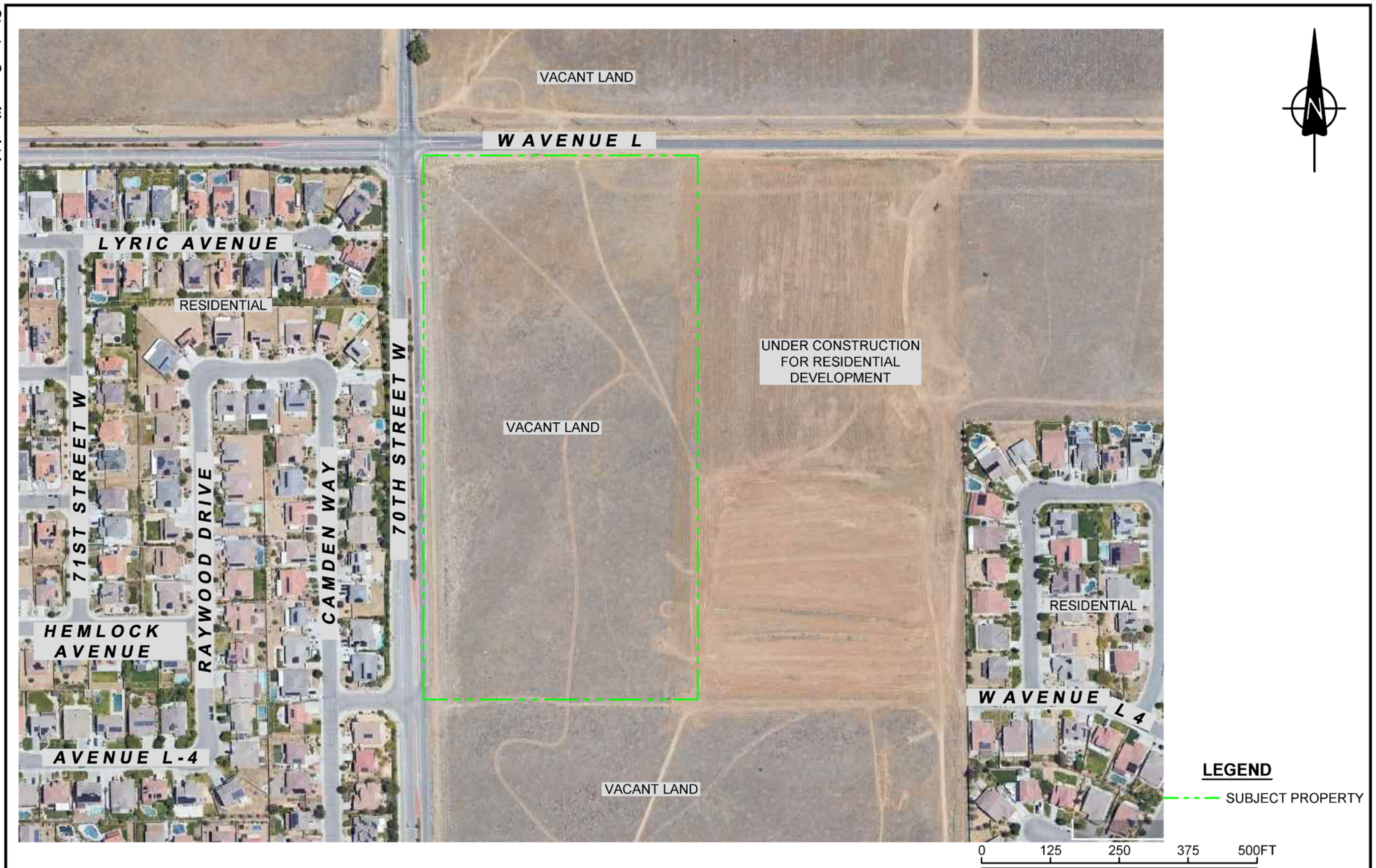
Project construction activities would include grading, utility installation, paving, building construction, and architectural coating. Construction is anticipated to begin in August 2025 and end in May 2027, resulting in one construction period of approximately 1.75 years. For purposes of this analysis, it is assumed that the entire 17.8-acre site would be disturbed with graded soil balanced across the site.

2.2.1 Surrounding Land Uses and Existing Conditions

The Project site is bound by 70th Street West to the west and West Avenue L to the north (see Figure 1). Surrounding land uses include vacant land to the south, single-family residential to the west, vacant land to the north, and vacant land that is planned for residential development to the east.

The Project site is currently vacant and covered in ruderal grasses. There are no structures on site. The site is zoned as Urban Residential, Transitional Density (R-10,000), and the Lancaster General Plan designates the site as Urban Residential (UR). The land to the west, south, and east of the Project site is also zoned R-10,000, and the parcel to the north of the site is zoned Specific Plan (SP).

Figure 1: Project Site



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SUBJECT PROPERTY DETAILS SOUTHEAST OF THE INTERSECTION OF 70TH STREET W AND AVENUE L, LANCASTER, CA 93536	Project No.:	185806035	Fig. No.: 1	Stantec
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	Date:	23/07/13		
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Client: KB HOMES	App'd By:	KE		

3.0 AIR QUALITY

3.1 ENVIRONMENTAL SETTING

The Project site lies within the northern, desert portion of Los Angeles County which is under the jurisdiction of the AVAQMD. The AVAQMD covers an approximately 1,300-square mile area in the western portion of the Mojave Desert Air Basin (MDAB) and includes the incorporated cities of Lancaster and Palmdale, as well as Air Force Plant 42 and a portion of Edwards Air Force Base. Air quality in this area is determined by natural factors including topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.

3.1.1 Climate and Meteorology

Climate and meteorology are important considerations for air quality. Local dispersion and regional transport of air pollutants directly relate to prevailing meteorological factors. Wind directions and speeds, and vertical temperature structure (inversions) are the primary determinants of transport and dispersion effects.

The topography of the MDAB consists of mountain ranges interspersed with long, broad valleys that often contain dry lakes. Many of the lower mountains reach elevations from 1,000 to 4,000 feet above the valley floor. The prevailing winds in the MDAB are from the west and southwest, due to the proximity to coastal and central regions of the state and the Sierra Nevada mountain range to the north. Air masses are pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountain ranges, whose passes form the main channels for these air masses. The Antelope Valley is bordered in the northwest by the Tehachapi Mountains and in the south by the San Gabriel Mountains.

During the summer, the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems diffuse by the time the reach the desert. Average annual precipitation in the MDAB ranges from 3.77 to 22.61 inches. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate at least three months have maximum average temperatures over 100.4° F (AVAQMD 2016).

3.1.2 Criteria Air Pollutants

Criteria air pollutants includes ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (measured both in units of smaller than 2.5 microns in diameter [$PM_{2.5}$] and in units of particulate matter smaller than 10 microns in diameter [PM_{10}]), and lead (Pb).

Ozone. Most ground-level ozone is formed as a result of complex photochemical reactions in the atmosphere between reactive organic gases (ROG), nitrogen oxides (NOx), and oxygen. ROG and NOx are considered precursors to the formation of ozone, a highly reactive gas that can damage lung tissue and affect respiratory function. While ozone in the lower atmosphere is considered a damaging air pollutant, ozone in the upper atmosphere is beneficial, as it protects the Earth from harmful ultraviolet radiation. However, atmospheric processes preclude ground-level ozone from reaching the upper atmosphere (USEPA 2022a).

Carbon Monoxide. CO is a colorless, odorless, poisonous gas produced by the incomplete combustion of fossil fuels. Elevated levels of CO can result in harmful health effects, especially for the young and elderly, and can also contribute to global climate change (USEPA 2022a).

Nitrogen Dioxide. NO_2 is a brownish, highly reactive gas primarily produced as a result of the burning of fossil fuels. NO_2 can also lead to the formation of ozone in the lower atmosphere. NO_2 can cause respiratory ailments, especially in the young and elderly, and can lead to degradations in the health of aquatic and terrestrial ecosystems (USEPA 2022a).

Sulfur Dioxide. SO_2 is primarily emitted from the combustion of coal and oil by steel mills, pulp and paper mills, and non-ferrous smelters. High concentrations of SO_2 can aggravate existing respiratory and cardiovascular diseases in asthmatics and others who suffer from emphysema or bronchitis. SO_2 also contributes to acid rain, which in turn, can lead to the acidification of lakes and streams (USEPA 2022a).

Particulate Matter. Airborne PM is not a single pollutant, but rather is a mixture of many chemical species. PM is a complex mixture of solids and aerosols composed of small droplets of liquid, dry solid fragments, and solid cores with liquid coatings. Particles vary widely in size, shape, and chemical composition, and may contain inorganic ions, metallic compounds, elemental carbon, organic compounds, and compounds from the earth's crust. Particles are defined by their diameter for air quality regulatory purposes. Those with a diameter of 10 microns or less (PM_{10}) are inhalable into the lungs and can induce adverse health effects. Fine particulate matter is defined as particles that are 2.5 microns or less in diameter ($PM_{2.5}$). Therefore, $PM_{2.5}$ compromises a portion of PM_{10}. Emissions from combustion of gasoline, oil, diesel fuel or wood produce much of the $PM_{2.5}$ pollution found in outdoor air, as well as significant proportion of PM_{10}. PM_{10} also includes dust from construction sites, landfills and agriculture, wildfires and brush/waste burning, industrial sources, wind-blown dust from open lands, pollen, and fragments of bacteria.

PM may be either directly emitted from sources (primarily particles) or formed in the atmosphere through chemical reactions of gases (secondary particles) such as SO_2, NOx, and certain organic compounds (USEPA 2022a).

Lead. Sources of Pb include pipes, fuel, and paint, although the use of Pb in these materials has declined dramatically over the years. Historically, a main source of Pb was automobile emissions. Pb can be inhaled directly or ingested by consuming Pb-contaminated food, water, or dust. Fetuses and children are most susceptible to Pb poisoning, which can result in heart disease and nervous system damage (USEPA 2022b). Through regulations, USEPA has gradually reduced the Pb content of gasoline. This program has essentially eliminated violations of the Pb standard in urban areas except those areas with Pb point sources.

3.1.3 Attainment Status

The USEPA and CARB designate air basins where ambient air quality standards are exceeded as “non-attainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” National non-attainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Attainment status is based on the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). Each standard has a different definition, or “form” of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring value exceeds the threshold per year. In contrast, the federal annual standard for $PM_{2.5}$ is met if the 3-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The Federal Clean Air Act (FCAA) identifies two types of NAAQS. Primary standards provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings (USEPA 2022a). The CAAQS are equal to or more stringent than the NAAQS and include pollutants for which national standards do not exist. Table 1 presents the applicable CAAQS and NAAQS. The AVAQMD is designated as nonattainment for the federal and state ozone standards and the state standard for PM_{10} (AVAQMD 2016).

Table 1. California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
			Primary	Secondary
Ozone (O_3)	8-hour	0.070 ppm (137 $\mu g/m^3$)	0.070 ppm (137 $\mu g/m^3$)	Same as Primary Standards
	1-hour	0.09 ppm (180 $\mu g/m^3$)	--	
Carbon monoxide (CO)	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	--
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
Nitrogen dioxide (NO_2)	Annual arithmetic mean	0.030 ppm (57 $\mu g/m^3$)	0.053 ppm (100 $\mu g/m^3$)	Same as Primary Standard
	1-hour	0.18 ppm (339 $\mu g/m^3$)	100 ppb (188 $\mu g/m^3$)	
Sulfur dioxide (SO_2)	Annual arithmetic mean	--	0.030 ppm (80 $\mu g/m^3$)	--

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
			Primary	Secondary
	24-hour	0.04 ppm (105 μg/m^3)	0.14 ppm (80 μg/m^3)	--
	3-hour	--	--	0.5 ppm (1300 μg/m^3)
	1-hour	0.25 ppm (655 μg/m^3)	--	--
Respirable Particulate Matter Smaller than 10 Microns in Diameter (PM_{10})	Annual arithmetic mean	20 μg/m^3	--	Same as Primary Standards
	24-hour	50 μg/m^3	150 μg/m^3	
Respirable Particulate Matter Smaller than 2.5 Microns in Diameter ($PM_{2.5}$)	Annual arithmetic mean	12 μg/m^3	12.0 μg/m^3	15 μg/m^3
	24-hour	No separate standard	35 μg/m^3	Same as Primary Standards
Sulfates	24-hour	25 μg/m^3	--	--
Lead (Pb)	30-day average	1.5 μg/m^3	--	--
	Calendar quarter	--	1.5 μg/m^3	Same as Primary Standard
	Rolling 3-month average	--	0.15 μg/m^3	
Hydrogen sulfide (H_2S)	1-hour	0.03 ppm (42 μg/m^3)	--	--
Vinyl chloride (chloroethene)	24-hour	0.01 ppm (26 μg/m^3)	--	--
Visibility reducing particles	8-hour	In 1989, the Air Resources Board converted the general statewide 10-mile visibility standard to instrumental equivalents, which are extinction of 0.23 per kilometer.	--	--

Notes:
1. CO, SO_2 (1- and 24-hour), NO_2, O_3, PM_{10}, and visibility reducing particles standards are not to be exceeded.
2. Not to be exceeded more than once a year except for annual standards.
-- = no standard established
μg/m^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
ppm = parts per million
Source: CARB 2016.

3.1.4 Ambient Air Quality

The nearest air quality monitoring station to the Project site is the Lancaster – 43301 Division Street Monitoring Station, located approximately 6.75 miles east of the site. The Lancaster – 43301 Division Street Monitoring Station monitors O_3, N_2O, $PM_{2.5}$, and PM_{10}. Table 2 includes a summary of the air quality monitoring data for the years 2020 through 2022.

The table shows the number of times the station recorded pollutant concentrations above federal and state air quality standards and the highest annual reading for each pollutant. Based on the monitoring results, the Project area has exceeded the state 1-hour ozone standard, both the state and federal 8-hour ozone standard, and the federal $PM_{2.5}$ and PM_{10} standards.

Table 2. Lancaster – 43301 Division Street Monitoring Station Data (2020-2022)

Pollutant	Air Pollutant, Averaging Time (Units)	2020	2021	2022
Ozone (ppm)	Maximum 1-hour	0.099	0.086	0.098
	California 1-hour number of days over standard	4	0	3
	Maximum 8-hour	0.084	0.080	0.083
	National 8-hour number of days over standard	8	3	33
	California 8-hour number of days over standard	8	4	36
Nitrogen Dioxide (ppb)	Maximum 1-hour	51	46	43
	Annual average	8	8	8
	National 1-hour number of days over standard	0	0	0
	California 1-hour number of days over standard	0	0	0
$PM_{2.5}$ ($\mu g/m^3$)	Maximum 24-hour	74.7	35.7	15.1
	National 24-hour number of days over standard	9	1	0
	Annual average	9.3	8.1	*
PM_{10} ($\mu g/m^3$)	Maximum 24-hour	192.3	411.2	76.2
	National 24-hour number of days over standard	1	1	0
	California 24-hour number of days over standard	*	*	*
	Annual average	30.6	29.6	26.0

Source: CARB 2023a.

Notes: ppm = parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms per liter

* indicates that insufficient data was available to determine the value.

3.1.5 Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e., irritation, anger, or anxiety) to the physiological (i.e., circulatory and respiratory effects, nausea, vomiting, and headache).

The ability to detect odors varies considerably among the population and is subjective. Some individuals can smell very minute quantities of specific substances; others have varying sensitivities to odors; and people may have different reactions to the same odor (e.g., bakery, gasoline). It is important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience (e.g., a description of flowery or sweet). Intensity refers to the strength of the odor and depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases, the odor intensity weakens, and it eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant drops below a human's detection threshold.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. Potential odors would be subject to AVAQMD Rule 402, Nuisance (AVAQMD 2002).

3.1.6 Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air but, due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered "criteria pollutants" under either the FCAA or the California Clean Air Act (CCAA) and are not subject to NAAQS or CAAQS ambient air quality standards. Instead, USEPA and CARB regulate hazardous air pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with YSAQMD rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national level, USEPA has established national emission standards for hazardous air pollutants (NESHAP) in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based, source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. The following provides a summary of the primary TACs of concern within the State of California and related health effects.

Diesel Particulate Matter

Diesel particulate matter (DPM) was identified as a TAC by the CARB in August 1998. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 42 percent of the statewide total, with an additional 55 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about three percent of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report DPM emissions also include heavy construction, manufacturers of asphalt paving materials and blocks, and diesel-fueled electrical generation facilities (CARB 2023b).

In October 2000, CARB issued a report entitled Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, which is commonly referred to as the Diesel Risk Reduction Plan (DRRP). The DRRP provides a mechanism for combating the DPM problem. The goal of the DRRP is to reduce concentrations of DPM. The key elements of the DRRP are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, and to lower the sulfur content of diesel fuel through advanced technology emission control devices on diesel engines. When fully implemented, the DRRP will significantly reduce emissions from both old and new diesel-fueled motor vehicles and from stationary sources that burn diesel fuel. In addition to these strategies, CARB continues to promote the use of alternative fuels and electrification. As a result of these actions, DPM concentrations and associated health risks in future years are projected to decline (CARB 2023b). In comparison to year 2010 inventory of statewide DPM emissions, CARB estimates that emissions of DPM in 2035 will be reduced by more than 50 percent.

DPM is typically composed of carbon particles (also called “soot” or “black carbon”) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. Diesel exhaust also contains gaseous pollutants, including volatile organic compounds and NOx. NOx emissions from diesel engines are important because they can undergo chemical reactions in the atmosphere leading to formation of $PM_{2.5}$ and O_3.

In California, diesel exhaust particles have been identified as a carcinogen accounting for an estimated 70 percent of the total known cancer risks in California. DPM is estimated to increase statewide cancer risk by 520 cancer occurrences per million residents exposed over an estimated 70-year lifetime. Non-cancer health effects associated with exposure to DPM include premature death, exacerbated chronic heart and lung disease, including asthma, and decreased lung function in children. Short-term exposure to diesel exhaust can also have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks (CARB 2023b).

Individuals most vulnerable to non-cancer health effects of DPM are children whose lungs are still developing and the elderly who often have chronic health problems. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to DPM (CARB 2023b). In addition to its health effects, DPM significantly contributes to haze and reduced visibility.

Valley Fever

Valley fever is an infection caused by a fungus that lives in the soil. The fungus that causes Valley fever, Coccidiodes immitis (C. immitis), is found in the southwestern United States, parts of Mexico and Central America, and parts of South America. The fungus grows naturally and is endemic in many areas within the Central Valley. People can get this infection by breathing in fungal spores from the air, especially when the wind blows the soil with the fungal spores into the air, or the dirt is moved by human activity. About 10,000 cases in the United States are reported each year, mostly from Arizona and California. Valley fever can be misdiagnosed because its symptoms are like those of other illnesses. For most people, the symptoms of Valley fever will go away within a few months without any treatment. Some people may develop a more severe infection, especially those with compromised immune systems (Centers for Disease Control and Prevention 2020).

In California, the number of reported Valley fever cases has greatly increased in recent years. Since 2000, the number of reported cases from increased from 1,000 to more than 9,000 cases reported in 2019 (California Department of Public Health 2021). In 2021, 1,447 cases of Valley fever were recorded within Los Angeles County (California Department of Public Health 2023).

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals with useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings constructed prior to 1977 when it was banned for use in buildings. Exposure to naturally occurring asbestos can occur during soil disturbing activities in areas with deposits present (USEPA 2023d).

3.1.7 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiovascular diseases. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools.

The nearest sensitive receptors to the Project site are the single-family residences located approximately 150 feet to the west, across 70th Street West.

3.2 REGULATORY SETTING

Air quality within the Project area is regulated by several jurisdictions, including the USEPA, CARB, and AVAQMD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although USEPA regulations may not be superseded, both state and local regulations may be more stringent.

3.2.1 Federal

U.S. Environmental Protection Agency

At the federal level, the USEPA has been charged with implementing national air quality programs. The USEPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the USEPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in Table 1.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA of 1970, the USEPA established the National Emission Standards for Hazardous Air Pollutants (NESHAPs). These are technology-based source-specific regulations that limit allowable emissions of HAPs. Among these sources include asbestos-containing building materials (ACBMs). NESHAPs include requirements pertaining to the inspection, notification, handling, and disposal of ACBMs associated with the demolition and renovation of structures.

Non-Road Diesel Rule

The USEPA has established a series of increasingly strict emissions standards for new off-road diesel equipment, on-road diesel trucks, and locomotives. New construction equipment used for the Project, including heavy-duty trucks and off-road construction equipment, would be required to comply with the emissions standards.

3.2.2 State

California Air Resources Board

The CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA of 1988. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts), establishing CAAQS, which in many cases are more stringent than the

NAAQS, and setting emissions standards for new motor vehicles. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used. The CAAQS are summarized in Table 1.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for O_3, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC.

Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

Assembly Bill 617

In response to AB 617 (C. Garcia, Chapter 136, Statutes of 2017), the CARB established the Community Air Protection Program. The Community Air Protection Program includes community air monitoring and community emissions reduction program's focus is to reduce exposure in communities most impacted by air pollution. The Legislature has appropriated funding to support early actions to address localized air pollution through targeted incentive funding to deploy cleaner technologies in these communities, as well as grants to support community participation in the AB 617 process. AB 617 also includes new requirements for accelerated retrofit of pollution controls on industrial sources, increased penalty fees, and greater transparency and availability of air quality and emissions data, which will help advance air pollution control efforts throughout the State.

Regulatory Attainment Designations

Under the CCAA, CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The USEPA designates areas for O_3, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The USEPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, USEPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

As noted previously, the YSAQMD region is designated as nonattainment for the federal and state ozone standards, the state standard for PM_{10}, and the federal standard for $PM_{2.5}$ (YSAQMD 2022a).

Low-Emission Vehicle Program

The CARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan (SIP). In 2012, CARB adopted the LEV III amendments to California's LEV regulations. These amendments include more stringent emission standards for both criteria pollutants and greenhouse gases for new passenger vehicles.

On-Road Heavy-Duty Vehicle Program

The CARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, and test procedures. CARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others.

In addition, the CARB's Truck and Bus regulation was established to meet federal attainment standards. This regulation requires heavy-duty diesel vehicles that operate in California to reduce TAC emissions from their exhaust. Diesel exhaust is responsible for 70 percent of the cancer risk from airborne toxics.

Therefore, by January 1, 2023, nearly all trucks and buses will be required to have 2010 or newer model year engines to reduce PM and NOx emissions. To help ensure that the benefits of this regulation are achieved, starting in 2020, only vehicles compliant with this regulation will be registered by the California Department of Motor Vehicles.

3.2.3 Regional

Antelope Valley Air Quality Management District

The AVAQMD is the public agency entrusted with regulating stationary sources of air pollution in the western portion of the MDAB. The YSAQMD has prepared their own guidance document to provide procedures for addressing air quality impacts in environmental documents (AVAQMD 2016). The AVAQMD CEQA and Federal Conformity Guidelines includes thresholds of significance for criteria pollutants, health risks from TACs, and guidance for siting sensitive receptor land uses.

Current Air Quality Plans

The AVAQMD is designated as nonattainment for the federal and state ozone standards and the state standard for PM_{10} (AVAQMD 2016). As a non-attainment area for the federal ozone standard, the region is required to prepare various planning documents on an ongoing basis. Each time a new standard is adopted by USEPA, local air districts must prepare plans to show how the standard will be achieved by the appropriate deadline. The most recent ozone plan, adopted in January 2023, is the Federal 70 ppb [parts per billion] Ozone Attainment Plan, Western Mojave Desert Nonattainment Area (2023 Ozone Plan). The purpose of the 2023 Ozone Plan is to demonstrate how the AVAQMD will achieve attainment of the 8-hour ozone NAAQS by 2033. In addition, the 2023 Ozone Plan presents the progress that the AVAQMD will make towards meeting all other required ozone planning milestones. The plan also includes an updated emissions inventory, establishes reasonably available control measure requirements, and documents the modeling approach used to support the attainment demonstration (AVAQMD 2023a).

In 2020, the ACAQMD prepared the 70 ppb Ozone Standard Implementation Evaluation (70 ppb O_3 Evaluation): RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification, which reviews the Reasonably Available Control Technologies (RACT) that are applicable to the AVAQMD and addresses the actions that the AVAQMD must take to address the federal RACT requirements for the 2005 ozone NAAQS (AVAQMD 2020).

In 2005, the AVAQMD adopted the List and Implementation Schedule for District Measures to Reduce PM Pursuant to Health & Safety Code Section 39614(d), which evaluates each of the CARB's Local PM Measures for applicability in the AVAQMD and establishes an implementation schedule for such measures. The implementation schedule is intended to reduce PM within the AVAQMD (AVAQMD 2005).

Rules and Regulations

All projects under the jurisdiction of the AVAQMD are required to comply with all applicable AVAQMD rules and regulations. Applicable AVAQMD regulations and rules include, but are not limited to, the following (AVAQMD 2023b):

- Regulation II: Permits
    - Rule 201: Permit to Construct
    - Rule 204: Permit Conditions
    - Rule 205: Expiration of Permits to Construct
- Regulation III: Fees
    - Rule 301: Permit Fees
- Regulation IV: Prohibitions
    - Rule 401: Visible Emissions
    - Rule 402: Nuisance
    - Rule 403: Fugitive Dust
    - Rule 404: Particulate Matter – Concentration
- Regulation XIV: Toxics and Other Non-Criteria Pollutants
    - Rule 1401: New Source Review for Toxic Air Contaminants

3.2.4 Local

City of Lancaster General Plan

The City of Lancaster General Plan is the long-term plan for growth within the City through the horizon year 2030. The Air Resources Element of the General Plan includes the following goals or policies related to air quality that may be applicable to the Project (City of Lancaster 2009):

- **Policy 3.3.3:** Minimize air pollutant emissions generated by new and existing development.

    - **Specific Action 3.3.3(a).** Through the environmental review process, evaluate proposed land uses which could contribute significantly to air quality degradation (heavy manufacturing, e.g.), and require mitigation measures to reduce their emissions.

    - **Specific Action 3.3.3(b).** Through the environmental review process, evaluate the air emissions of industrial uses to ensure that they will not negatively affect adjacent or surrounding uses. If impacts are identified, require that appropriate mitigation measures be implemented.

- **Policy 3.3.4.** Protect sensitive uses such as homes, schools and medical facilities, from the impacts of air pollution.

  - **Specific Action 3.3.4(a).** Through the development review process, ensure that potential stationary air pollution sources that conflict with residential areas and other sensitive receptors are mitigated.

- **Policy 3.3.5.** Cooperate with the AVAQMD and other agencies to protect air quality in the Antelope Valley.

  - **Specific Action 3.3.5(d).** Consult with the AVAQMD in reviewing the air quality analysis in environmental impact reports, developing ordinances, and obtaining smog episode information.

4.0 GREENHOUSE GAS

4.1 ENVIRONMENTAL SETTING

To fully understand global climate change, it is important to recognize the naturally occurring “greenhouse effect” and to define the GHGs that contribute to this phenomenon. Various gases in the earth’s atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth’s surface temperature. Solar radiation enters the earth’s atmosphere from space and a portion of the radiation is absorbed by the earth’s surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect.

4.1.1 Greenhouse Gases

Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF_3), and sulfur hexafluoride (SF_6). Primary GHGs attributed to global climate change are discussed in the following subsections.

Carbon Dioxide. CO_2 is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere (USEPA 2023a).

Methane. CH_4 is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. CH_4 is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about 12 years (USEPA 2023a).

Nitrous Oxide. N_2O is a clear, colorless gas with a slightly sweet odor. N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years (USEPA 2023a).

Hydrofluorocarbons. HFCs are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (USEPA 2023a).

Perfluorocarbons. PFCs are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF_4), perfluoroethane (C_2F_6), perfluoropropane (C_3F_8), perfluorobutane (C_4F_{10}), perfluorocyclobutane (C_4F_8), perfluoropentane (C_5F_{12}), and perfluorohexane (C_6F_{14}). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF_4 and C_2F_6 as byproducts. The estimated atmospheric lifetimes for CF_4 and C_2F_6 are 50,000 and 10,000 years, respectively (USEPA 2023a).

Nitrogen Trifluoride. NF_3 is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. NF_3 is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. In 2009, NF_3 was listed by California as a potential GHG to be listed and regulated under AB 32 (Section 38505 Health and Safety Code).

Sulfur Hexafluoride. SF_6 is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80percent of all SF_6 produced worldwide. Leaks of SF_6 occur from aging equipment and during equipment maintenance and servicing. SF_6 has an atmospheric life of 3,200 years (USEPA 2023b).

Black Carbon. Black carbon is the most strongly light-absorbing component of PM emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands). California has been an international leader in reducing emissions of black carbon, including programs that target reducing PM from diesel engines and burning activities (CARB 2013).

4.1.2 Global Warming Potential

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential (GWP).

Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. Based on a 100-year time horizon, Methane traps over 25 times more heat per molecule than CO_2, and N_2O absorbs roughly 298 times more heat per molecule than CO_2. Additional GHGs with high GWP include NF_3, SF_6, PFCs, and black carbon.

4.1.3 Sources of Greenhouse Gas Emissions

On a global scale, GHG emissions are predominantly associated with activities related to energy production; changes in land use, such as deforestation and land clearing; industrial sources; agricultural activities; transportation; waste and wastewater generation; and commercial and residential land uses. World-wide, energy production including the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global GHG emissions.

United States of America

In 2021, GHG emissions in the U.S. totaled 6,340.2 million metric tons (MMT) of CO_2e. Within the U.S., the largest contributor to GHG emissions is the transportation sector (28 percent). The next largest contributors are from electricity production (25 percent) and industry (23 percent), followed by the commercial and residential sector (13 percent) and the agricultural sector (10 percent). Transportation emissions primarily come from burning fossil fuels for our cars, trucks, ships, trains, and planes. Over 90 percent of the fuel used for transportation is petroleum-based, which includes primarily gasoline and diesel. The bulk of emissions generated from energy production come from burning fossil fuels, mostly coal and natural gas. Industry emissions are also primarily generated from fossil fuels burned for heat, the use of certain products that contain GHGs, and the handling of waste. Similar to industry sector emissions, commercial and residential uses arise primarily from fossil fuels for heat, the use of certain products that contain GHGs, and the handling of waste. Agricultural emissions come from livestock such as cows, agricultural soil, and rice production. The land use and forestry sector within the U.S. serves as a carbon sink. Carbon sinks absorb CO_2 from the atmosphere. Land areas across the U.S. absorbed approximately 12 percent of the 2021 GHG emissions (USEPA 2023c).

California

In 2020, GHG emissions within California totaled 369.2 MMT of CO_2e. Similar to national emissions, in California, the transportation sector is the largest contributor. Transportation emissions account for approximately 37 percent of the total statewide GHG emissions. The majority of transportation emissions are derived from passenger vehicles and heavy-duty trucks. Emissions associated with industrial uses are the second largest contributor, totaling roughly 20 percent. Industrial emissions are driven by fuel combustion from sources that include refineries, oil and gas extraction, cement plants, and the portion of cogeneration emissions attribution to thermal energy output. Electricity generation (in state and imports) totaled roughly 16 percent. Emissions from the electricity generation sector have declined over the years due to the increase in renewable generation that continues to replace fossil power (CARB 2022a).

4.1.4 Effects of Global Climate Change

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snowpack is a principal supply of water for the state, providing roughly 50 percent of state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. An earlier snowmelt would also impact the state's energy resources. An early exhaustion of the Sierra snowpack may force electricity producers to switch to more costly or non-renewable forms of electricity generation during spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, resultant changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry.

4.2 REGULATORY SETTING

There are considerable regulatory actions regarding GHGs and climate change at the state and local level. The following includes the key state and regional regulations applicable to the Project.

4.2.1 State

Assembly Bill 32 and Senate Bill 32

AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. GHGs, as defined under AB 32, include CO_2, CH_4, NO_X, HFCs, PFCs, and SF_6. Since AB 32 was enacted, a seventh chemical, NF_3, has also been added to the list of GHGs. CARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> *Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to*

> *the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.*

CARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007. Therefore, to meet the state's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. In order to set a framework for the state to meet this target, CARB was tasked with creating a Scoping Plan (as described below). California announced in July 2018 that the state emitted 427 $MMTCO_2e$ in 2016 and achieved AB 32 goals (CARB 2018a).

Senate Bill (SB) 32 was signed into law on September 8, 2016. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit no later than December 31, 2030."

Assembly Bill 1279: The California Climate Crisis

AB 1279 was signed into law in 2022 and establishes the policy of the State to achieve carbon neutrality as soon as possible, but no later than 2045 and maintain net negative GHG emissions thereafter. AB 1279 would also ensure that by 2045 the statewide anthropogenic GHG emissions are reduced by at least 85percent below 1990 levels. The bill would require CARB to ensure that an updated Scoping Plan identifies and recommends measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable carbon dioxide removal and carbon capture, utilization, and storage technologies to complement AB 1279's emissions reduction requirements.

2022 Climate Change Scoping Plan

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

Cap-and-Trade Program

CARB administers the state's cap-and-trade program, which covers GHG sources that emit more than 25,000 metric tons of carbon dioxide equivalent per year ($MTCO_2e$/year), such as refineries, power plants, and industrial facilities. This market-based approach to reducing GHG emissions provides economic incentives for achieving GHG emission reductions.

Senate Bill 375: The Sustainable Communities and Climate Protection Act of 2008

SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits more than 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

CARB has prepared a Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets in 2018 which set updated GHG reduction targets for metropolitan planning organizations for 2020 and 2035. Pursuant to SB 375, the reduction targets for per capita vehicular emissions in the Southern California region were 8 percent by 2020 and 19 percent by 2035 (CARB 2023c).

Assembly Bill 1493: Pavley Regulations and Fuel Efficiency Standards

AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations and fuel efficiency standards that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by USEPA's denial of an implementation waiver. USEPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011.

The standards were phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards resulted in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards resulted in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation, rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.

The second phase of the implementation for AB 1493 was incorporated into Amendments to the Low-Emission Vehicle Program, referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Cars program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation would reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The rules would reduce pollutants from gasoline and diesel-powered cars and would deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations would also provide adequate fueling infrastructure for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.

Senate Bill 1368: Emission Performance Standards

Enacted in 2006, SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than five years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant.

Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the state. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 pounds of CO_2 per megawatt-hour.

Senate Bill 1078: Renewable Electricity Standards

SB 1078 (September 12, 2002) required California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, the governor signed Executive Order (EO) S-14-08, which established the Renewable Portfolio Standard (RPS) target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. EO S-21-09 directed CARB to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010, by Resolution 10-23. In 2011, the state legislature adopted this higher standard in SB X1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

SB 350 (October 7, 2015) reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies toward a regional electricity grid, and improved infrastructure for electric vehicle charging stations.

Senate Bill 100: California Renewables Portfolio Standard Program

SB 100 (September 10, 2018) revised the RPS goals to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. The bill requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; and 60 percent by December 31, 2030. The bill also establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order S-01-07: Low Carbon Fuel Standard

EO S-01-07 was signed on January 18, 2007. The EO mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the EO established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in an implementation plan for the State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007, and was submitted to CARB for consideration as an "early action" item under AB 32. CARB adopted the LCFS on April 23, 2009.

The LCFS was subject to legal challenge in 2011. Ultimately, CARB was required to bring a new LCFS regulation for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS and new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law approved the regulation on November 16, 2015. The regulation was last amended in 2018. The 2018 amendments strengthen the carbon intensive fuel reduction targets beyond 2020 to support SB 32. Other major changes to the 2018 amendments include expanding the fuel types and eligible activities to participate in the LCFS (CARB 2018b).

Executive Order S-13-08: Climate Adaptation Strategy

EO S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in this EO, the 2009 California Climate Adaptation Strategy was adopted, which is the "… first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order B-48-18

In January 2018, Governor Brown signed EO B-48-18 requiring all State entities to work with the private sector to have at least 5 million zero emission vehicles (ZEVs) on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the electric-vehicle charging stations should be direct current fast chargers. This order also requires all State entities to continue to partner with local and regional governments to streamline the installation of

ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a Plug-in Charging Station Design Guidebook and update the 2015 Hydrogen Station Permitting Guidebook to aid in these efforts. All State entities are required to participate in updating the 2016 Zero-Emissions Vehicle Action Plan to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all state entities are to support and recommend policies and actions to expand ZEV infrastructure at residential land uses, through the LCFS Program and recommend how to ensure affordability and accessibility for all drivers.

Executive Order N-79-20

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

4.2.2 Regional

SCAG Regional Transportation Plan/Sustainable Communities Strategy

The Southern California Association of Governments (SCAG) is the designated Metropolitan Planning Organization for the following six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The SCAG develops long-range regional transportation plans and sustainable communities strategies pursuant to SB 375, growth forecast components, regional transportation improvement programs, regional housing needs allocations, and a portion of the SCAQMD air quality plans (SCAG 2023).

In September 2020, the SCAG Regional Council approved the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which is entitled Connect SoCal. Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies to increase mobility options and achieve a more sustainable growth pattern. Implementation of Connect SoCal is projected to achieve a 19 percent reduction in GHG emissions per capita by 2035 compared to the year 2005. Some of the specific goals of Connect SoCal which are applicable to the Project include reducing GHG emissions and improving air quality (Goal 5), supporting healthy and equitable communities (Goal 6), and encouraging development of diverse housing types in areas that are supported by multiple transportation options (Goal 9) (SCAG 2020).

4.2.3 Local

City of Lancaster General Plan

The City of Lancaster General Plan is the long-term plan for growth within the City through the horizon year 2030. The Air Resources Element of the General Plan includes the following goals or policies related to GHG emissions that may be applicable to the Project (City of Lancaster 2009):

- **Policy 3.3.1.** Minimize the amount of vehicular miles traveled.
- **Policy 3.3.2.** Facilitate the development and use of public transportation and travel modes such as bicycle riding and walking.
- **Policy 3.3.3:** Minimize air pollutant emissions generated by new and existing development.
    - **Specific Action 3.3.3(c).** Consider the development of an action plan to address the requirements of the Global Warming Solution Act of 2006 (AB 32) regarding the reduction of greenhouse gas emissions.

City of Lancaster Climate Action Plan

The City of Lancaster Climate Action Plan (CAP) was prepared in 2016. The CAP includes an inventory of City-wide GHG emissions in baseline year 2010, establishes a GHG reduction target, and includes a projection of forecasted GHG emissions up to the year 2050. The CAP identifies 61 GHG reduction measures, which are divided into the following categories: Transportation; Energy; Municipal Operations; Water; Waste; Built Environment; Community; and Land Use. Each measure is evaluated for its cost, timing of implementation, expected CO_2 reduction, and other benefits (i.e., creates local jobs, improves public health, etc.). It is noted in the CAP that projects are not expected to implement all 61 measures simultaneously; rather, the GHG reduction measures are intended to provide a menu of options available to reduce emissions (City of Lancaster 2017).

The City's CAP is qualified for reducing GHG emissions pursuant to CEQA Guidelines Section 15183.5(b)(1). Pursuant to CEQA Guidelines Sections 15064(h)(3) and 15130(d), if a proposed project is consistent with the requirements of an adopted plan, such as a qualified GHG reduction plan that is prepared consistent with CEQA Guidelines Section 15183.5(b), as described in 15183.5(b)(2), the lead agency may determine that the project GHG impacts are less than significant if the project incorporates the applicable GHG reduction measures in the plan or the measures are otherwise required as mitigation measures.

5.0 ENERGY

5.1 ENVIRONMENTAL SETTING

Electricity is provided to the City of Lancaster by both Lancaster Energy (LCE) and Southern California Edison (SCE). Natural gas service is provided to the City by the Southern California Gas Company (SoCalGas); however, the Project would not include natural gas connections.

LCE is a Community Choice Aggregation electricity provider that became available to residential customers within the City in 2015. Community Choice Aggregations are programs that allow local governments to generate or provide purchased electricity for their residents, rather than rely on investor-owned utility companies. LCE electricity is provided through existing SCE infrastructure, and SCE provides all metering, billing, and customer service to customers. New customers in the LCE service area are automatically enrolled in service with LCE, but may opt out and receive their electricity from SCE instead. LCE offers two packages: Clear Choice and Smart Choice. In 2021, 27.2 and 32.2 percent of electricity from RPS-eligible renewable sources for the Clear Choice and Smart Choice packages, respectively (CEC 2023). A greater proportion of the electricity is considered to be renewable when accounting for LCE's purchase of renewable energy credits (RECs).

5.2 REGULATORY SETTING

The following includes the key federal, state, and local regulations related to energy resources that are applicable to the Project.

5.2.1 Federal

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. The Federal Energy Regulatory Commission also reviews proposals to build liquefied natural gas terminals and interstate natural gas pipelines as well as licensing hydropower projects. Licensing of hydroelectric facilities under the authority of the Federal Energy Regulatory Commission includes input from state and federal energy and power generation, environmental protection, fish and wildlife, and water quality agencies.

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (42 U.S. Code [USC] §8201 et seq.) serves as the underlying authority for federal energy management goals and requirements and is the foundation of most federal energy requirements. The National Energy Conservation Policy Act also established fuel economy standards for on-road motor vehicles in the United States. The National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards and for revising existing standards. NHTSA and the USEPA are taking coordinated steps to enable the production of clean energy vehicles with improved fuel efficiency. NHTSA sets the Corporate Average Fuel Economy (CAFE) levels, which are rapidly increasing over the next several years to improve energy security and reduce fuel consumption. In March 2022, the NHTSA finalized CAFE standards for model years 2024 to 2026. The standards require an industry-wide fleet average of approximately 49 miles per gallon for passenger cars and light trucks by model year 2026. The NHTSA projects that the foregoing standards will avoid the consumption of approximately 234 billion gallons of gasoline between model years 2030 to 2050 (NHTSA 2022).

Energy Independence and Security Act of 2007

The Energy Independence and Security Act (EISA) aimed to increase U.S. energy security, increased CAFE standards for motor vehicles, and included provisions related to energy efficiency, such as renewable fuel standards (RFS), appliance and lighting efficiency standards; and building energy efficiency standards. The EISA required increasing levels of renewable fuels to replace petroleum. The USEPA is responsible for developing and implementing regulations to ensure transportation fuel sold into the U.S. contains a minimum volume of renewable fuel.

The RFS programs regulations were developed in collaboration with refiners, renewable fuel products, and other stakeholders and were created under the Energy Policy Act of 2005. The RFS program established the first renewable fuel volume mandate in the U.S. As required under the EISA, the original RFS program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. The RFS program was expanded in several ways that laid the foundation for achieving significant reductions of GHG emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the nation’s renewable fuels sector. The updated program is referred to as RFS2, and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline;
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- EISA established new categories of renewable fuel and set separate volume requirements for each one; and
- EISA required by the USEPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternate energy, additional research in carbon capture, international energy programs, and the creation of “green jobs.”

Federal Vehicle Standards

The Energy Policy and Conservation Act of 1975 (EPCA) mandated that the NHTSA establish and implement a regulatory program for motor vehicle fuel economy, known as the CAFE program, to reduce national energy consumption. As codified in Chapter 329 of Title 49 of the USC, as amended by the

EISA, EPCA sets forth specific requirements concerning the establishment of average fuel economy standards for passenger cars and light trucks. The EISA, discussed above, amended the EPCA CAFE program requirements by providing the Department of Transportation additional rulemaking authority and responsibilities.

Consistent with its statutory authority in rulemaking to establish CAFE standards for model year 2017 and beyond, NHTSA developed two phases of standards. The first phase included final standards for model years 2017–2021. The second phase, covering model years 2022–2025, included standards that were not final, due to the statutory requirement that NHTSA set average fuel economy standards not more than five model years at a time. Rather, NHTSA wrote that those standards were augural, meaning that they represented its best estimate, based on the information available at that time, of what levels of stringency might be maximum feasible in those model years. In 2012, the agencies jointly adopted more stringent Phase 2 standards for light duty cars and trucks, which would cover model years 2017 through 2025. In August of 2016, the agencies adopted more stringent Phase 2 standards for medium- and heavy-duty vehicles, which would cover model years 2018 through 2027 for certain trailers and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks.

On March 31, 2020, NHTSA and the USEPA released a new rule, the final Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, setting CAFE and carbon dioxide emissions standards for model years 2021 through 2026 passenger cars and light trucks. The rule rolls back the 2012 standards for model years 2021 through 2026 for passenger cars and light trucks, which had required an average fleetwide fuel economy equivalent of 54.5 miles per gallon in model year 2025 with a 5 percent annual increase to an average fuel economy of about 40 miles per gallon in model year 2025 with annual increases of 1.5 percent starting in 2021. As a part of issuing the new SAFE rule, NHTSA issued a Final Environmental Impact Statement which found that the relaxed standards would result in increased petroleum consumption which in turn would result in increases to GHG and criteria pollutant emissions known to contribute to adverse health impacts (NHTSA 2020). The estimated increases from the roll back of the 2012 standards are expected to result in more than a billion metric tons additional climate pollution through 2040 as determined by calculating the difference from the reduction of 2 billion metric tons the 2012 rule was expected to accomplish compared to the standards of the 2020 rule (NHTSA 2020). On January 20, 2021, an EO was issued on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, which includes review of the Part One Rule by April 2021 and review of the Part Two Rule by July 2021. In response to the Part One Rule, in December 2021, the Department of Transportation withdrew its portions of the SAFE rule. As a result, states are now allowed to issue their own GHG emissions standards and zero-emissions vehicle mandates. In addition, the Part Two Rule was adopted to revise the existing national GHG emission standards for passenger cars and light trucks through model year 2026. These standards are the strongest vehicle emissions standards ever established for the light-duty vehicle sector and will result in avoiding more than three billion tons of GHG emissions through 2050.

5.2.2 State

California Public Utilities Commission

The California Public Utilities Commission (CPUC) is a state agency created by a constitutional amendment to regulate privately-owned utilities providing telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation services and in-state moving companies. The CPUC is responsible for ensuring that California utility customers have safe, reliable utility services at reasonable rates, while protecting utility customers from fraud. The CPUC regulates the planning and approval for the physical construction of electric generation, transmission, or distribution facilities, and local distribution pipelines of natural gas.

California Energy Code

Compliance with the California Energy Code (CCR Title 24, Part 6, California's Energy Efficiency Standards) and Title 20, Public Utilities and Energy, standards must occur for all new buildings constructed in California. These efficiency standards apply to new construction of both residential and nonresidential (i.e., maintenance buildings and pump station buildings associated with the Program) buildings, and they regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit processes, and local government agencies may adopt and enforce energy standards for new buildings provided that these standards meet or exceed those provided in the Title 24 guidelines.

Warren-Alquist Energy Resources Conservation and Development Act

Initially passed in 1974 and amended since, the Warren-Alquist Energy Resources Conservation and Development Act (Warren-Alquist Act) created the California Energy Commission (CEC), California's primary energy and planning agency. The seven responsibilities of the CEC are forecasting future energy needs, promoting energy efficiency and conservation through setting standards, supporting energy-related research, developing renewable energy resources, advancing alternative and renewable transportation fuels and technologies, certifying thermal power plants 50 megawatts or larger, and planning for and directing state response to energy emergencies. The CEC regulates energy resources by encouraging and coordinating research into energy supply and demand problems to reduce the rate of growth of energy consumption. Additionally, the Warren-Alquist Act acknowledges the need for renewable energy resources and encourages the CEC to explore renewable energy options that would be in line with environmental and public safety goals (Warren-Alquist Act Public Resources Code (PRC) section 25000 et seq.)

California Integrated Energy Policy

SB 1389 requires the CEC to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety." (PRC Section 25301(a)). The CEC adopts an Integrated Energy Policy Report every two years and an update every other year. The most recent version is the 2022 Integrated Energy Policy Report Update (CEC 2022).

California Renewables Portfolio Standard

California's RPS was initially established in 2002 by SB 1078, with the initial requirement that 20 percent of electricity retail sales be served by renewable resources by 2017. The program was accelerated in 2006 under SB 107, which required that the 20 percent mandate be met by 2010. In April 2011, SB 2 was signed into law, requiring electricity retailers in the state to procure 33 percent of their energy sources from renewable energy sources by the end of 2020 (CPUC 2021). In addition, SB 350, passed in 2015, directs California utilities to further increase the amount of renewable energy delivered to customers to 50 percent by 2030.

CPUC implements and administers RPS compliance rules for California's retail sellers of electricity, which include large and small investor-owned utilities, publicly owned utilities, electric service providers, and community choice aggregators. The CEC is responsible for the certification of electrical generation facilities as eligible renewable energy resources and adopting regulations for the enforcement of RPS procurement requirements of public owned utilities.

5.2.1 Local

City of Lancaster General Plan

The City of Lancaster General Plan is the long-term plan for growth within the City through the horizon year 2030. The Energy Resources Element of the General Plan includes the following goals or policies related to energy resources that may be applicable to the Project (City of Lancaster 2009):

- **Policy 3.6.1.** Reduce energy consumption by establishing land use patterns which would decrease automobile travel and increase the use of energy efficient modes of transportation.
    - **Specific Action 3.6.1(a).** Require the inclusion, where feasible, of provisions for energy efficient modes of transportation and fixed facilities which establish transit, bicycle, equestrian, and pedestrian modes as desirable alternatives.
- **Policy 3.6.2.** Encourage innovative building, site design, and orientation techniques which minimize energy use.
- **Policy 3.6.3.** Encourage the incorporation of energy conservation measures in existing and new structures.
- **Policy 3.6.4.** Support state and federal legislation that would eliminate wasteful energy consumption in an appropriate manner.

- **Policy 3.6.5.** Reduce the amount of energy consumed by City operations and assist residents and businesses in reducing their energy consumption rates.
- **Policy 3.6.6.** Consider and promote the use of alternative energy such as wind energy and solar energy.

6.0 METHODOLOGY AND MODELING PARAMETERS

The following discussion explains the methodology and modeling parameters that will be used to estimate air quality and GHG emissions and energy demand associated with construction and operations of the Project.

6.1 CRITERIA POLLUTANT AND GHG EMISSION METHODS

The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod quantifies direct GHG emissions, such as construction and operational activities and vehicle use, and indirect emissions, such as energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, CalEEMod identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user.

CalEEMod was developed for the California Air Pollution Control Officers Association in collaboration with the California Air Districts. Default data (e.g., emission factors, trip lengths, meteorology, source inventory) have been provided by the various California Air Districts to account for local requirements and conditions. CalEEMod is a comprehensive tool for quantifying air quality impacts from land use projects located throughout California. The model can be used for a variety of situations where an air quality analysis is necessary or desirable, such as preparing CEQA or National Environmental Policy Act documents, conducting pre-project planning, and, verifying compliance with local air quality rules and regulations, etc.

CalEEMod Version 2022.1.1.19 was used to estimate construction and operational impacts of the Project.

6.1.1 Modeling Assumptions

Project construction is anticipated to include site grading, utility installation, paving, building construction, and architectural coating. The timing for the grading, utility installation, and paving phases were provided by the Project applicant, and the timing for building construction and architectural coating was left as CalEEMod default values. Table 3 shows the anticipated construction schedule. Construction was modeled to commence in August 2025 and conclude in May 2027, resulting in a construction duration of approximately 1.75 years. The grading activities would not require any soil import or export and would be balanced across the site.

Table 3. Construction Schedule

Construction Task	Start Date	End Date	Workdays
Grading	8/1/2025	9/11/2025	30
Utility Installation	9/12/2025	1/1/2026	80
Paving	1/2/2026	2/12/2026	30
Building Construction	2/13/2026	4/8/2027	300
Architectural Coating	4/9/2027	5/6/2027	20

Note: Workdays refers to working days only, excluding holidays and weekends.

The off-road equipment fleet for construction was developed in coordination with the Project applicant (see Appendix A for full equipment list). CalEEMod default values were used to estimate the number of worker trips. Vendor trips were added to the grading, utility installation, and paving phases to account for water trucks.

The operational vehicle trip rates and lengths were left as default values. As noted previously, the Project would not include natural gas. Operational emissions from all sources were estimated at full buildout of the Project, which is anticipated to occur in 2027.

The CalEEMod results are included as Appendix A.

6.2 ENERGY CALCULATION METHODS

Project energy demand during construction and operation was determined based on the CalEEMod modeling and vehicle and equipment emission factors from CARB's EMFAC2021 (v1.0.2) and EMFAC OFFROAD2021 (v1.0.4). The energy calculations are included as Appendix B.

7.0 AIR QUALITY IMPACT ANALYSIS

7.1 CEQA GUIDELINES

According to the CEQA Guidelines' Appendix G Environmental Checklist, the following questions are analyzed and evaluated to determine whether impacts related to air quality are considered to be significant environmental effects.

Where available, the significance criteria established by the applicable air quality management or air pollution district may be relied upon to make the following determinations.

Where the Project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

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

c) Expose sensitive receptors to substantial pollutant concentrations?

d) Result in other emissions (such as those leading to odors) affecting a substantial number of people?

7.1.1 Thresholds of Significance

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, the AVAQMD has adopted thresholds of significance for individual development projects, as presented in Table 4 (AVAQMD 2016).

Table 4. AVAQMD Significance Thresholds for Criteria Pollutants

Pollutant	Threshold of Significance	
	Pounds/Day	Tons/Year
ROG	137	25
NO_X	137	25
CO	548	100
SO_X	137	25
PM_{10}	82	15
$PM_{2.5}$	65	12
H_2S	54	10
Pb	3	0.6

Note: The AVAQMD CEQA & Conformity Guidelines uses the term "volatile organic compounds (VOC)" rather than ROG. VOC and ROG refer to the same category of gases.

Source: AVAQMD 2016.

The thresholds apply to both construction and operational impacts. If the Lead Agency finds that a project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts.

7.2 AIR IMPACT ANALYSIS

Impact AIR-1	Conflict with or obstruct implementation of the applicable air quality plan?

Impact Analysis

Air districts are required to prepared air quality plans to identify strategies to bring regional emissions into compliance with federal and state air quality standards. Air districts establish emissions thresholds for individual projects to demonstrate the point at which a project would be considered to increase the air quality violations. A project would conflict with the applicable air quality plan if they exceeded any emissions thresholds for which the region is in nonattainment for.

As noted previously, the AVAQMD region is designated as nonattainment for the federal and state ozone standards, the state standard for PM_{10} (AVAQMD 2016). Accordingly, AVAQMD has prepared air quality plans, including the 2023 Ozone Plan, to achieve attainment of the applicable ozone standards. The AVAQMD's adopted thresholds of significance indicate the levels of emissions that projects may emit while the region still moves towards attainments of the CAAQS and NAAQS. Projects that exceed thresholds would be considered to conflict with the 2023 Ozone Plan.

As described under Impact AIR-2, the Project would not exceed the thresholds established by the AVAQMD. As a result, the Project would not conflict with or obstruct implementation of the applicable air quality plan.

Conclusion

The Project would not conflict with or obstruct implementation of the applicable air quality plan, and the impact is less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None Required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?

Impact Analysis

In developing thresholds of significance for air pollutants, the AVAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions are considered to result in significant adverse air quality impacts to the region's existing air quality conditions.

Construction Emissions

Construction emissions associated with the Project are shown in Table 5. As shown in the table, the emissions from construction would be below the applicable AVAQMD thresholds.

Table 5. Construction Criteria Pollutant Emissions

Year	Maximum Daily Emissions (lbs per day)						Total Annual Emissions (tons per year)					
	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
2025	7.27	66.4	61.6	0.14	10.9	5.5	0.21	1.91	1.86	0.00	0.21	0.12
2026	2.39	21.2	23.1	0.04	1.14	0.9	0.15	1.29	1.84	0.00	0.09	0.05
2027	42.9	9.68	14.8	0.02	0.65	0.39	0.47	0.35	0.52	0.00	0.02	0.01
AVAQMD Thresholds	**137**	**137**	**548**	**137**	**82**	**64**	**25**	**25**	**100**	**25**	**15**	**12**
Exceed Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***

Source: Appendix A.

Operational Emissions

Emissions during operation of the Project would be generated primarily from resident vehicle trips to and from the site, as well as from area sources, such as consumer products and landscaping equipment. Operational emissions are presented in Table 6. As shown therein, the emissions would be below the applicable thresholds of significance.

Table 6. Operational Criteria Pollutant Emissions

Source	Maximum Daily Emissions (lbs/day)						Total Annual Emissions (tons/year)					
	ROG	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**	**ROG**	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Mobile	2.61	1.93	18.6	0.04	3.29	0.85	0.42	0.35	2.85	0.01	0.58	0.15
Area	88.5	1.67	109	0.19	14.6	14.5	4.01	0.07	4.62	0.01	0.60	0.59
Project Total	*91.1*	*3.6*	*128*	*0.23*	*17.9*	*15.4*	*4.42*	*0.42*	*7.48*	*0.01*	*1.18*	*0.75*
AVAQMD Thresholds	**137**	**137**	**548**	**137**	**82**	**64**	**25**	**25**	**100**	**25**	**15**	**12**
Exceed Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***

Note: Totals may not appear to sum due to rounding.
Source: Appendix A.

Conclusion

As shown in Table 5 and Table 6, criteria pollutant emissions would not exceed any threshold of significance during Project construction or operation. Therefore, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or state ambient air quality standard, and the impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None Required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-3 Expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis

This discussion addresses whether the Project would expose sensitive receptors to construction-generated fugitive dust (PM_{10}), Valley fever infection, naturally occurring asbestos (NOA), construction-generated DPM, or operational related TACs. According to CARB, some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest sensitive receptors to the Project site are the single-family residences located approximately 150 feet to the west, across 70th Street West.

Construction Emissions

During construction associated with the Project, the potential exists for emissions of fugitive dust, C. immitis spores, NOA, and DPM to be released. Each TAC is discussed separately below.

Fugitive Dust

Fugitive dust (PM_{10}) would be generated from site grading and other earth-moving activities. Most of this fugitive dust would remain localized and would be deposited near the Project site. However, the potential for impacts from fugitive dust exists unless control measures are implemented to reduce the emissions from the Project site. However, AVAQMD Rule 403, Fugitive Dust, limits the discharge of PM emissions. Additionally, during construction, water trucks would be used during phases with exposed soils to further reduce dust emissions (AVAQMD 2010). Furthermore, as demonstrated in Table 5, PM_{10} emissions from construction would not exceed the AVAQMD's threshold of significance. Thus, emissions of fugitive dust from construction of the Project would not adversely affect sensitive receptors.

Valley Fever

As noted previously, Valley fever is an infection caused by inhalation of the spores of a fungus, C. immitis, that lives in soil. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities. The California Central Coast, including parts of Los Angeles County, is considered an endemic area for Valley fever.

Construction activities would generate dust that could contain C. immitis spores. However, as noted above, the Project would minimize the generation of fugitive dust during construction activities by complying with AVAQMD Rule 403, Fugitive Dust. Additionally, during construction, water trucks would be used during phases with exposed soils to further reduce dust emissions. Overall, construction would not result in sensitive receptor exposure to C. immitis spores.

Naturally Occurring Asbestos

Construction in areas of rock formations that contain NOA could release asbestos to the air and pose a health hazard. A review of the map with areas more likely to have rock formations containing NOA in California indicates that there is no asbestos in the immediate Project area (USGS 2011). Therefore, construction of the Project would not expose sensitive receptors to NOA.

Diesel Particulate Matter

Exposure to DPM from diesel vehicles and off-road construction equipment can result in health risks to nearby sensitive receptors. While the Project would involve the use of diesel fueled vehicles and off-road equipment, construction would be temporary. In addition, the modeled Project construction emissions are well below the AVAQMD thresholds for criteria pollutant emissions, which includes diesel particulate matter.

Operational Emissions

The greatest potential for exposure to TACs during long-term operations is from the use of heavy-duty diesel trucks and stationary generators that use diesel fuel. The Project is a single-family residential development. Once operational, the majority of vehicle trips to the Project site would be from residents and, as a result, the Project would attract very few diesel truck trips. Additionally, the Project would not include any stationary generators on-site. For these reasons, once operational, the Project would not be expected to expose nearby sensitive receptors to substantial amounts of TACs.

During operations, dust emissions would be negligible because most of the Project area would be occupied by buildings, pavement, and landscaped areas. This would preclude the possibility of Project operations resulting in exposure to fugitive dust emissions and C. immitis spores that may result in Valley fever infection.

Once operational, the Project would be considered a sensitive receptor location and future residents could be exposed to TAC emissions from nearby mobile and stationary sources. In the California Building Industry Association v. Bay Area Air Quality Management District (62 Cal.4th 369 [2015] [Case No. S213478]), the California Supreme Court held that “agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project’s future users or residents. When a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project’s impact on the environment—and not the environment’s impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions.” Although the Court ruled that impacts from the existing environment on projects are not required to be addressed under CEQA, land uses such as gasoline stations, dry cleaners, distribution centers, freeways, and auto body shops can expose residents to high levels of TAC emissions if they are in proximity of the project site. The AVAQMD CEQA & Conformity Guidelines contain screening distances for siting sensitive receptor land uses. Additional analysis is required for projects that would site a sensitive use within 1,000 feet of an industrial project, distribution center, or major roadway; within 500 feet of a dry cleaner; or within 300 feet of a gas station. The Project site is not located within the screening distances for the foregoing land uses, and the nearest freeway, State Route 14, is located over 5.5 miles to the east. Therefore, future residents of the Project would not be exposed to substantial pollutant concentrations.

Conclusion

Based on the analysis above, the Project would not expose sensitive receptors to substantial pollutant concentrations, and the impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None Required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-4 Result in other emissions (such as those leading to odors) affecting a substantial number of people?

Impact Analysis

While offensive odors rarely cause any physical harm, they can still be unpleasant, leading to distress among the public and often generating citizen complaints. The occurrence and severity of odor impacts depends on numerous factors, including nature, frequency, and intensity of the source, the wind speed and direction, and the sensitivity of the receptor. The nearest sensitive receptors to the Project site are the single-family residences located approximately 150 feet to the west, across 70th Street West.

Construction activities associated with the Project could result in short-term odorous emissions from diesel exhaust associated with diesel-fueled equipment. However, these emissions would be intermittent and would dissipate rapidly from the source. Project construction would also be required to comply with all applicable AVAQMD rules and regulations, particularly associated with permitting of air pollutant sources. Compliance with the aforementioned regulations would help to minimize emissions, including emissions leading to odors.

Land uses typically considered as associated with the production of odors during operations include wastewater treatment facilities, waste disposal facilities, and agricultural operations. The Project does not include any land uses that are typically associated with emitting objectionable odors.

Finally, AVAQMD regulates objectionable odors through Rule 402, Nuisance, which dictates that emissions that cause nuisance or annoyance to the public are prohibited (AVAQMD 2002). Thus, although not anticipated, if odor complaints are made after the Project is developed, the AVAQMD would ensure that such odors are addressed, and any potential odor effects are minimized or eliminated.

Conclusion

The Project would not result in other emissions, such as those leading to odors, affecting a substantial number of people. Therefore, the impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None Required.

Level of Significance After Mitigation

Less Than Significant Impact.

8.0 GREENHOUSE GAS IMPACT ANALYSIS

8.1 CEQA GUIDELINES

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

The following GHG significance thresholds are contained in Appendix G of the CEQA Guidelines:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

8.1.1 Thresholds of Significance

The AVAQMD threshold of significance for GHGs is 548,000 pounds/day and 100,000 tons/year (AVAQMD 2016). However, it is noted that this threshold was adopted prior to SB 32 and AB 1279. Thus, pursuant to CEQA Guidelines Section 15183.5, this document also evaluates project significance through consistency with the City's CAP. The Project is considered to have a significant impact related to GHG emissions if it would exceed the AVAQMD thresholds and/or conflict with the City's CAP.

The Project is also evaluated for consistency with the following applicable plans that were adopted for the purpose of reducing GHG emissions: the CARB's 2022 Scoping Plan, SCAG's 2020-2045 RTP/SCS, and the City of Lancaster General Plan.

8.2 GHG IMPACT ANALYSIS

Impact GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

Potential impacts related to GHG emissions resulting from implementation of the Project are considered in comparison with the AVAQMD's thresholds of significance and the City's CAP below.

Construction Emission Inventory

Construction GHGs would be emitted by the off-road construction equipment and vehicle travel by workers and material deliveries to the Project site. The estimated construction GHG emissions are shown in Table 7. As shown in the table, the emissions from construction would be below the applicable AVAQMD thresholds.

Table 7. Construction Greenhouse Gas Emissions

Year	Maximum Daily Emissions (lbs CO_2e per day)	Total Annual Emissions ($MTCO_2e$ per year)
2025	16,147	400
2026	5,011	324
2027	2,872	92.1
AVAQMD Thresholds	**548,000**	**100,000**[1]
Exceed Thresholds?	***No***	***No***

Notes:

1. The AVAQMD threshold of significance for GHG emissions is presented in imperial tons, whereas the estimated GHG emissions from Project construction are presented in metric tons. Nevertheless, the Project GHG emissions are well below the threshold.

Source: Appendix A.

Operational Emission Inventory

Operational, or long-term, emissions occur over the life of the Project. Operational activities of the Project would generate GHG emissions primarily from mobile sources. Operational GHG emissions are shown in Table 8. As shown therein, the emissions would be below the applicable thresholds of significance.

Table 8. Operational Greenhouse Gas Emissions

Source	Maximum Daily Emissions (lbs CO_2e per day)	Total Annual Emissions ($MTCO_2e$ per year)
Mobile	3,834	579
Area	2,281	85.2
Energy[1]	372	61.6
Water	81.1	13.4
Waste	83.0	13.7
Refrigerants	0.78	0.13
Total	*6,652*	*754*
AVAQMD Thresholds	**548,000**	**100,000**[2]
Exceed Thresholds?	***No***	***No***

Notes

1. The energy source emissions presented above do not account for the reduction in emissions due to on-site solar panels. This is a conservative approach to analysis.
2. The AVAQMD threshold of significance for GHG emissions is presented in imperial tons, whereas the estimated GHG emissions from Project operation are presented in metric tons. Nevertheless, the Project GHG emissions are well below the threshold.

Source: Appendix A.

Consistency with City of Lancaster CAP

The Project's consistency with the applicable GHG reduction measures included in the CAP is evaluated in Table 9 below.

Table 9. Project Consistency with City of Lancaster CAP

Measure	Consistency Determination
Transportation	
Measure 4.1.2b: Bike Lanes. Installation of Class I, Class II, and Class III bike lanes to provide safe cycling facilities for residents.	**Consistent.** The Project would not include installation of bike lanes. However, the proposed driveway would provide direct access to the existing Class II bike lane along 70th Street West.
Measure 4.1.2c: Pedestrian Amenities. Provide pedestrian amenities throughout the City to encourage walking instead of driving.	**Consistent.** All internal roadways would include a paved sidewalk to support pedestrian circulation throughout the Project site.
Energy	
Measure 4.2.2a2: Energy Audit – Residential. Increase energy conservation, efficiency, and savings through community education.	**Consistent.** This measure is primarily intended for implementation at the municipal level. Nevertheless, the Project would be constructed in accordance with the efficiency standards established in the 2022 California Building Standards Code. Additionally, implementation of the Project would not preclude the City's achievement of this measure.
Measure 4.2.2c: Lancaster Choice Energy Programs. Develop energy efficiency programs that will provide opportunities for residential and commercial buildings to become more energy efficient, reduce usage, and save money.	**Consistent.** The Project would be automatically enrolled in service with LCE through SCE infrastructure. Future residents may elect to opt out of LCE and receive electricity from SCE instead.
Water	
Measure 4.4.2a: Sensor Technology. Implement installation of water sensor technologies in order to increase efficient irrigation practices.	**Consistent.** Landscaping would be irrigated using a point source directly to each plant with a smart controller and rain sensor.
Waste	
Measure 4.5.1a: Composting. Implement programs to increase composting in residential and commercial settings.	**Consistent.** This measure is primarily intended for implementation at the municipal level. Nevertheless, as required by Lancaster Municipal Code Chapter 13.18, Mandatory Organic Waste Disposal Reduction, future residents of the Project shall place organic waste in designated containers and/or manage their organic waste on-site. Further, implementation of the Project would not preclude the City's achievement of this measure.
Measure 4.5.1b: Recycling Incentives. Incentivize the residential and business community to recycle more materials by expanding recycling opportunities and providing economic benefits for recycling.	**Consistent.** This measure is primarily intended for implementation at the municipal level. Nevertheless, consistent with Lancaster Municipal Code Section 13.18.030, Requirements for Single-Family Generators, separated recyclable materials shall be places in the designated container. Further, implementation of the Project would not preclude the City's achievement of this measure.

Measure	Consistency Determination
Built Environment	
Measure 4.6.1a: Zero Net Energy Housing. Establish innovative business models encouraging the development of zero net energy housing and develop a zero net energy affordable housing project.	**Consistent.** This measure is primarily intended for implementation at the municipal level. Nevertheless, the proposed residential units would be all-electric and would include rooftops solar panels. In addition, the units would be Energy Star Certified.

Source: City of Lancaster 2016.

Based on the above, the Project would be consistent with the applicable measures from the City's CAP.

Conclusion

As demonstrated in Table 7, Table 8, and Table 9, the Project would not result in GHG emissions that would have a significant impact on the environment, and the impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None Required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis

The Project would include construction of 56 residential units on a vacant lot. The structures would include all electric buildings with solar paneling to generate renewable electricity on-site. In addition, the Project will be required to adhere to Title 24 and the latest California Building Standards.

Pursuant to Appendix G of the CEQA Guidelines, a significant GHG impact is identified if the project could conflict with applicable GHG reduction plans, policies, or regulations. The Project would be subject to complying with the City's CAP, CARB's 2022 Scoping Plan, SCAG's Connect SoCal, and the City's General Plan, each of which includes policies and regulations adopted for the purpose of reducing GHG emissions. Project consistency with the City CAP is evaluated under Impact GHG-1 and the other plans are evaluated below.

Consistency with the CARB's 2022 Scoping Plan

CARB approved the 2022 Scoping Plan in December 2022. The 2022 Scoping Plan builds upon previous iterations of state scoping plans to achieve carbon neutrality and reduce anthropogenic GHG emissions below 85 percent below 1990 no later than 2045, as directed by AB 1279 (CARB 2022). Table 10 identifies the Scoping Plan policies that are applicable to the proposed Project.

Table 10. Project Consistency with 2022 Scoping Plan Greenhouse Gas Reduction Strategies

Measure	Consistency Determination
Deploy ZEVs and reduce driving demand	**Consistent.** While the Project would not deploy ZEVs, the Project would include pedestrian infrastructure and would provide connections to existing bicycle infrastructure. In addition, consistent with the 2022 California Building Standards Code, all units would include EV-capable infrastructure to accommodate future installation of a Level 2 EV charger.
Coordinate supply of liquid fossil fuels with declining CA fuel demand	**Not Applicable.** This measure is aimed at petroleum refineries and fossil fuel extraction operations. The Project would not interfere with this goal.
Generate clean electricity	**Consistent.** The Project would include rooftop solar panels to generate clean electricity.
Decarbonize Buildings	**Consistent.** The Project would not include any natural gas infrastructure and would include rooftop solar panels to generate clean electricity.
Decarbonize Industrial Energy Supply	**Not Applicable.** The Project is a residential land use and would not affect the greater industrial sector.
Reduce non-combustion emissions (Methane)	**Consistent.** The Project would not include any land uses that generate significant levels of methane, such as landfills or dairy farms.
Reduce non-combustion emissions (Hydrofluorocarbons [HFCs])	**Consistent.** The Project would comply with all state regulations governing SLCPs, including HFCs.
Compensate for remaining emissions	**Not Applicable.** This measure is aimed at the state government to reduce statewide emissions to meet AB 1279 goals.

Source: CARB 2022.

This analysis finds the Project would be consistent with the applicable strategies recommended in the 2022 Scoping Plan.

Consistency with the SCAG's Connect SoCal

In September 2020, the SCAG Regional Council approved the 2020-2045 Connect SoCal RTP/SCS. The primary goal of Connect SoCal is to achieve sustainable regional growth while reducing GHG emissions through transportation and land use planning. Project consistency with the specific goals of Connect SoCal which are applicable to the Project are evaluated in Table 11.

Table 11. Project Consistency with Connect SoCal Greenhouse Gas Reduction Strategies

Goal	Consistency Determination
Goal 5: Reduce greenhouse gas emissions and improve air quality.	**Consistent.** The Project would be all-electric and include rooftop solar panels to generate clean electricity and, as a result, the structures would not generate substantial air quality or GHG emissions during operations.
Goal 6: Support healthy and equitable communities.	**Consistent.** See discussion above.
Goal 9: Encourage development of diverse housing types in areas that are supported by multiple transportation options.	**Consistent.** The Project would include paved sidewalks and direct access to the existing bike lanes in the Project area. The Antelope Valley Transit Authority (AVTA) provides public transit services in the Project area. The nearest AVTA stop to the Project site is the 60th Street W & Avenue L stop, which services Routes 9 and 97. Thus, public transit would be accessible to future residents of the Project. Therefore, consistent with Goal 9, future residents of the Project would have access to alternative modes of transportation.

Source: SCAG 2020.

Connect SoCal identifies areas throughout Southern California that should be prioritized for residential growth. Such areas are located in close proximity to public transit and, therefore, residents in these areas are expected to generate reduced mobile emissions. Although the Project site was not identified as a Priority Growth Area, Transit Priority Area, or High Quality Transit Area, the Project is proposed on a site that is zoned for single-family residential use. Therefore, the increase in housing units and associated increase in mobile emissions associated with the Project was accounted for in the regional growth projections included in Connect SoCal. Based on the above, the Project is considered consistent with the overarching goals of Connect SoCal.

Consistency with the City's General Plan

Table 12 evaluates the Project's consistency with the General Plan policies and actions related to GHG emissions that are applicable to the Project.

Table 12. Project Consistency with General Plan Greenhouse Gas Reduction Strategies

Measure	Consistency Determination
Policy 3.3.1. Minimize the amount of vehicular miles traveled.	**Consistent.** The Project would include paved sidewalks on all internal roadways and would provide a direct connection to the existing bike lanes along 70th Street West. In addition, future residents of the Project would have access to public transit services provided by AVTA. The nearest AVTA stop to the Project site is located at the intersection of 60th Street W and Avenue L. By providing alternative modes of transportation that

Measure	Consistency Determination
	reduce the reliance on single-passenger vehicles, the Project would reduce vehicle miles traveled (VMT).
Policy 3.3.2. Facilitate the development and use of public transportation and travel modes such as bicycle riding and walking.	**Consistent.** See discussion above.
Policy 3.3.3: Minimize air pollutant emissions generated by new and existing development.	**Consistent.** The Project would be all-electric and include solar energy generation, which would minimize air pollutant and GHG emissions. Furthermore, as demonstrated throughout this document, the Project would not result in air pollutant emissions that exceed the applicable thresholds.
Specific Action 3.3.3(c). Consider the development of an action plan to address the requirements of the Global Warming Solution Act of 2006 (AB 32) regarding the reduction of greenhouse gas emissions.	**Consistent.** Consistent with this action, the City of Lancaster prepared and adopted their CAP in 2016. Project consistency with the CAP is evaluated in Table 9. As demonstrated therein, the Project is consistent with the applicable measures in the City's CAP.

Source: City of Lancaster 2009.

This analysis finds the Project would be consistent with the applicable GHG reduction policies and actions in the General Plan.

Conclusion

The Project would not conflict with an applicable plan adopted for the purpose of reducing GHG emissions; therefore, impacts would be considered less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None Required.

Level of Significance After Mitigation

Less Than Significant Impact.

9.0 ENERGY IMPACT ANALYSIS

9.1 CEQA GUIDELINES

The CEQA Guidelines define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in the environment.” To determine whether a project would have a significant impact on energy the following must be evaluated.

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

9.2 ENERGY IMPACT ANALYSIS

Impact ENR-1	Result in potential significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact Analysis

The energy requirements for the Project were determined using the construction and operational estimates generated from the calculation worksheets for energy consumption (Appendix B). This impact addresses the energy consumption from both construction and operations, discussed separately below.

Construction Energy Demand

During construction of the Project, energy resources would be consumed in the form of diesel and gasoline fuel from the use of off-road equipment (i.e., tractors, excavators, cranes) and on-road vehicles (i.e., construction employee commutes, haul trucks). Temporary electricity may be required to provide as-necessary lighting and electric equipment; such electricity demand would be met by portable generator sets and, possibly, local distribution. Fuel demand associated with portable generators is incorporated in the off-road equipment estimate provided below. In the event local distribution is required during construction, the demand would be negligible. Natural gas is not anticipated to be required during construction of the Project.

Off-Road Equipment

Construction activities associated with the Project, including grading, utility installation, paving, building construction, and architectural coating, were estimated to consume 66,899 gallons of diesel fuel from the use of off-road equipment. For comparison, in 2021, approximately 3.7 billion gallons of diesel fuel was consumed within California (U.S. Energy Information Administration [USEIA] 2023). Thus, the diesel fuel required to power the off-road equipment during construction of the Project would represent approximately 0.002 percent of the state's annual diesel demand.

On-Road Vehicles

On-road vehicles for construction workers and vendors would require fuel for travel to and from the site during construction. Table 13 provides an estimate of the total on-road vehicle fuel usage during construction.

Table 13. Construction On-Road Vehicle Fuel Consumption

Project Component	Average Fuel Economy (miles/gallon)	Total VMT	Total Fuel Consumption (gallons)
Worker Trips	27.43	322,085	11,741
Vendor Trips	11.16	42,432	3,801
Total Construction On-Road Trips		**364,517**	**15,541**

Notes:

Calculations use unrounded numbers; totals may not appear to sum exactly due to rounding.

VMT = vehicle miles traveled

Source: Appendix B.

As shown in the table, construction of the Project was estimated to consume 15,541 gallons of fuel from on-road vehicles. For comparison, in 2021, approximately 10.2 billion gallons of gasoline for motor vehicles was consumed within California (USEIA 2023). Thus, the fuel required to power the on-road motor vehicles during construction of the Project would represent approximately 0.0002 percent of the state's annual gasoline demand.

Conclusion

Overall, construction activities associated with the Project would result in the consumption of petroleum-based fuels. However, there are no unusual Project characteristics that would necessitate the use of construction equipment or vehicles that would be less energy efficient than at comparable construction sites in other parts of the state. Therefore, it is expected that construction fuel consumption associated with the proposed Project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Operational Energy Demand

During operations of the Project, energy would be required to power the proposed residential buildings and to fuel the vehicles travelling to and from the site.

Building Energy

The proposed residences would require energy for normal operations, such as lighting and temperature controls. The Project would not consume any natural gas. Over the course of a year, operational electricity consumption would total 390,089 kilowatt-hours. It is noted that the proposed buildings would be constructed in compliance with the energy efficiency standards set forth in the 2022 California Building Standards Code. Therefore, the Project's total energy consumption and would not result in the inefficient, wasteful, or unnecessary use of energy.

Transportation Energy

Future residents of the Project would travel to and from the site during normal operations. Table 14 provides an estimate of the daily and annual fuel consumed by vehicles traveling to and from the Project site. These estimates were derived using the same assumptions used in the operational air quality and GHG analysis for the Project.

Table 14. Long-Term Operational Vehicle Fuel Consumption

Vehicle Type	Percent of Vehicle Trips	Annual VMT	Average Fuel Economy (miles/gallon)	Total Annual Fuel Consumption (gallons)
Passenger Cars (LDA)	55.62	914,736	31.29	29,235
Light Trucks and Medium Duty Vehicles (LDT1, LDT2, MDV)	35.23	579,381	24.02	24,123
Light-Heavy to Heavy-Heavy Diesel Trucks (LHD1, LHD2, MHDT, HHDT)	8.40	138,179	11.25	12,285
Motorcycles (MCY)	0.32	5,256	42.07	125
Other (OBUS, UBUS, SBUS, MH)	0.43	7,144	7.22	989
Total	**-**	**1,644,697**	**-**	**66,756**

Source: Appendix B.

As noted previously, in 2021, California consumed approximately 10.2 billion gallons of gasoline (USEIA 2023). The Project's anticipated consumption of 66,756 gallons of fuel per year represents approximately 0.001 percent of the state's annual demand for gasoline. Further, over the Project lifetime, vehicle fuel efficiency is anticipated to increase as a result of federal and state laws governing fleet standards. As such, the amount of fuel consumed as a result of vehicular trips to and from the Project site during operation would decrease over time. The Project would not be any more inefficient, wasteful, or unnecessary than other vehicle uses in the region.

Conclusion

Based on the analysis above, the Project would not result in a potential significant environmental impact due to the wasteful, inefficient, or unnecessary consumption of energy resources; therefore, the impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact ENR-2 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact Analysis

The Project would comply with the applicable federal, state, and local regulations aimed at reducing energy consumption. Local regulations have been developed in accordance with federal and state energy regulations, such as the California Building Energy Efficiency Standards (California Code of Regulations Title 24, Part 6), the CALGreen Code (California Code of Regulations Title 24, Part 11), and SB 743, which are also aimed at reducing energy consumption. Consistent with the CALGreen code, the single-family residences would include solar paneling. Additionally, the residential homes would be Energy Star Certified, which is an energy efficiency program run by the USEPA and Department of Energy. Energy Star Certification demonstrates that the Project would be at least 75 percent more efficient than similar buildings nationwide as verified by a third-party (Energy Star 2023). The Project would also support the state's RPS requirements by automatically enrolling residents in LCE electricity service.

Conclusion

The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, the impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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APPENDIX A

CALEEMOD MODELING RESULTS

Lancaster Residential Development Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lancaster Residential Development
Construction Start Date	8/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	5.00
Precipitation (days)	13.0
Location	34.658244963897076, -118.25199283023412
County	Los Angeles-Mojave Desert
City	Lancaster
Air District	Antelope Valley AQMD
Air Basin	Mojave Desert
TAZ	3624
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.19

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

Single Family Housing	56.0	Dwelling Unit	17.8	109,200	655,920	—	166	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

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

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	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.	8.64	42.9	66.4	61.6	0.14	2.69	8.24	10.9	2.48	3.02	5.50	—	16,083	16,083	0.65	0.15	2.07	16,147
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.01	2.53	23.1	23.8	0.04	1.02	0.31	1.24	0.94	0.08	0.99	—	4,995	4,995	0.20	0.05	0.04	5,016
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.36	2.56	10.5	10.2	0.02	0.44	0.72	1.17	0.41	0.26	0.67	—	2,405	2,405	0.10	0.04	0.46	2,415
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.47	1.91	1.86	< 0.005	0.08	0.13	0.21	0.07	0.05	0.12	—	398	398	0.02	0.01	0.08	400

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	8.64	7.27	66.4	61.6	0.14	2.69	8.24	10.9	2.48	3.02	5.50	—	16,083	16,083	0.65	0.15	2.07	16,147
2026	1.41	1.19	10.1	14.9	0.02	0.38	0.31	0.70	0.35	0.08	0.43	—	2,859	2,859	0.11	0.05	1.54	2,880
2027	1.35	42.9	9.66	14.8	0.02	0.34	0.31	0.65	0.31	0.08	0.39	—	2,851	2,851	0.11	0.05	1.40	2,872
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.01	2.53	23.1	23.8	0.04	1.02	0.21	1.24	0.94	0.05	0.99	—	4,995	4,995	0.20	0.05	0.03	5,016
2026	2.85	2.39	21.2	23.1	0.04	0.93	0.31	1.14	0.85	0.08	0.90	—	4,990	4,990	0.20	0.05	0.04	5,011
2027	1.34	1.12	9.68	14.2	0.02	0.34	0.31	0.65	0.31	0.08	0.39	—	2,820	2,820	0.11	0.05	0.04	2,839
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.36	1.15	10.5	10.2	0.02	0.44	0.72	1.17	0.41	0.26	0.67	—	2,405	2,405	0.10	0.02	0.17	2,415
2026	0.97	0.82	7.04	10.1	0.02	0.27	0.21	0.48	0.25	0.05	0.30	—	1,941	1,941	0.08	0.04	0.46	1,954
2027	0.27	2.56	1.90	2.83	< 0.005	0.07	0.06	0.13	0.06	0.02	0.08	—	552	552	0.02	0.01	0.12	556
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.25	0.21	1.91	1.86	< 0.005	0.08	0.13	0.21	0.07	0.05	0.12	—	398	398	0.02	< 0.005	0.03	400
2026	0.18	0.15	1.29	1.84	< 0.005	0.05	0.04	0.09	0.04	0.01	0.05	—	321	321	0.01	0.01	0.08	324
2027	0.05	0.47	0.35	0.52	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	91.5	91.5	< 0.005	< 0.005	0.02	92.1

2.3. Construction Emissions by Year, Mitigated

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

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

2025	8.64	7.27	66.4	61.6	0.14	2.69	8.24	10.9	2.48	3.02	5.50	—	16,083	16,083	0.65	0.15	2.07	16,147
2026	1.41	1.19	10.1	14.9	0.02	0.38	0.31	0.70	0.35	0.08	0.43	—	2,859	2,859	0.11	0.05	1.54	2,880
2027	1.35	42.9	9.66	14.8	0.02	0.34	0.31	0.65	0.31	0.08	0.39	—	2,851	2,851	0.11	0.05	1.40	2,872
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.01	2.53	23.1	23.8	0.04	1.02	0.21	1.24	0.94	0.05	0.99	—	4,995	4,995	0.20	0.05	0.03	5,016
2026	2.85	2.39	21.2	23.1	0.04	0.93	0.31	1.14	0.85	0.08	0.90	—	4,990	4,990	0.20	0.05	0.04	5,011
2027	1.34	1.12	9.68	14.2	0.02	0.34	0.31	0.65	0.31	0.08	0.39	—	2,820	2,820	0.11	0.05	0.04	2,839
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.36	1.15	10.5	10.2	0.02	0.44	0.72	1.17	0.41	0.26	0.67	—	2,405	2,405	0.10	0.02	0.17	2,415
2026	0.97	0.82	7.04	10.1	0.02	0.27	0.21	0.48	0.25	0.05	0.30	—	1,941	1,941	0.08	0.04	0.46	1,954
2027	0.27	2.56	1.90	2.83	< 0.005	0.07	0.06	0.13	0.06	0.02	0.08	—	552	552	0.02	0.01	0.12	556
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.25	0.21	1.91	1.86	< 0.005	0.08	0.13	0.21	0.07	0.05	0.12	—	398	398	0.02	< 0.005	0.03	400
2026	0.18	0.15	1.29	1.84	< 0.005	0.05	0.04	0.09	0.04	0.01	0.05	—	321	321	0.01	0.01	0.08	324
2027	0.05	0.47	0.35	0.52	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	91.5	91.5	< 0.005	< 0.005	0.02	92.1

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.	90.3	91.2	4.02	128	0.23	14.6	3.27	17.9	14.6	0.83	15.4	1,583	5,540	7,123	4.50	0.30	14.3	7,338
Mit.	90.2	91.1	3.48	128	0.23	14.6	3.27	17.9	14.5	0.83	15.4	1,583	4,856	6,439	4.44	0.30	14.3	6,652
% Reduced	< 0.5%	< 0.5%	13%	< 0.5%	1%	< 0.5%	—	< 0.5%	< 0.5%	—	< 0.5%	—	12%	10%	1%	< 0.5%	—	9%

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	89.7	90.6	4.14	121	0.23	14.6	3.27	17.9	14.6	0.83	15.4	1,583	5,207	6,790	4.51	0.30	1.13	6,995
Mit.	89.6	90.6	3.60	121	0.23	14.6	3.27	17.9	14.5	0.83	15.4	1,583	4,523	6,106	4.45	0.30	1.13	6,308
% Reduced	< 0.5%	< 0.5%	13%	< 0.5%	2%	< 0.5%	—	< 0.5%	< 0.5%	—	< 0.5%	—	13%	10%	1%	< 0.5%	—	10%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	22.2	24.3	2.86	41.2	0.08	3.34	3.17	6.51	3.33	0.80	4.13	377	4,705	5,082	3.39	0.22	6.50	5,238
Mit.	22.2	24.2	2.32	41.0	0.08	3.30	3.17	6.47	3.28	0.80	4.09	377	4,021	4,398	3.33	0.21	6.50	4,552
% Reduced	< 0.5%	< 0.5%	19%	1%	4%	1%	—	1%	1%	—	1%	—	15%	13%	2%	1%	—	13%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.06	4.43	0.52	7.52	0.01	0.61	0.58	1.19	0.61	0.15	0.75	62.4	779	841	0.56	0.04	1.08	867
Mit.	4.05	4.42	0.42	7.48	0.01	0.60	0.58	1.18	0.60	0.15	0.75	62.4	666	728	0.55	0.04	1.08	754
% Reduced	< 0.5%	< 0.5%	19%	1%	4%	1%	—	1%	1%	—	1%	—	15%	13%	2%	1%	—	13%

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	2.79	2.61	1.77	18.6	0.04	0.03	3.27	3.29	0.02	0.83	0.85	—	3,765	3,765	0.18	0.17	13.5	3,834
Area	87.4	88.5	1.70	109	0.19	14.6	—	14.6	14.5	—	14.5	1,555	657	2,212	1.44	0.11	—	2,281
Energy	0.06	0.03	0.54	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	—	1,054	1,054	0.10	0.01	—	1,058
Water	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1

Waste	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	90.3	91.2	4.02	128	0.23	14.6	3.27	17.9	14.6	0.83	15.4	1,583	5,540	7,123	4.50	0.30	14.3	7,338
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.49	2.32	1.93	14.8	0.03	0.03	3.27	3.29	0.02	0.83	0.85	—	3,441	3,441	0.19	0.18	0.35	3,498
Area	87.1	88.2	1.67	106	0.19	14.6	—	14.6	14.5	—	14.5	1,555	649	2,204	1.43	0.11	—	2,273
Energy	0.06	0.03	0.54	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	—	1,054	1,054	0.10	0.01	—	1,058
Water	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Waste	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	89.7	90.6	4.14	121	0.23	14.6	3.27	17.9	14.6	0.83	15.4	1,583	5,207	6,790	4.51	0.30	1.13	6,995
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.45	2.28	1.93	15.6	0.03	0.03	3.17	3.19	0.02	0.80	0.83	—	3,437	3,437	0.19	0.17	5.72	3,500
Area	19.7	22.0	0.39	25.3	0.04	3.28	—	3.28	3.26	—	3.26	349	150	499	0.32	0.03	—	515
Energy	0.06	0.03	0.54	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	—	1,054	1,054	0.10	0.01	—	1,058
Water	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Waste	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	22.2	24.3	2.86	41.2	0.08	3.34	3.17	6.51	3.33	0.80	4.13	377	4,705	5,082	3.39	0.22	6.50	5,238
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.45	0.42	0.35	2.85	0.01	< 0.005	0.58	0.58	< 0.005	0.15	0.15	—	569	569	0.03	0.03	0.95	579
Area	3.60	4.01	0.07	4.62	0.01	0.60	—	0.60	0.59	—	0.59	57.8	24.8	82.7	0.05	< 0.005	—	85.2
Energy	0.01	0.01	0.10	0.04	< 0.005	0.01	—	0.01	0.01	—	0.01	—	175	175	0.02	< 0.005	—	175
Water	—	—	—	—	—	—	—	—	—	—	—	0.66	10.5	11.2	0.07	< 0.005	—	13.4
Waste	—	—	—	—	—	—	—	—	—	—	—	3.93	0.00	3.93	0.39	0.00	—	13.7
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13

Total	4.06	4.43	0.52	7.52	0.01	0.61	0.58	1.19	0.61	0.15	0.75	62.4	779	841	0.56	0.04	1.08	867

2.6. Operations Emissions by Sector, Mitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.79	2.61	1.77	18.6	0.04	0.03	3.27	3.29	0.02	0.83	0.85	—	3,765	3,765	0.18	0.17	13.5	3,834
Area	87.4	88.5	1.70	109	0.19	14.6	—	14.6	14.5	—	14.5	1,555	657	2,212	1.44	0.11	—	2,281
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	370	370	0.04	< 0.005	—	372
Water	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Waste	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	90.2	91.1	3.48	128	0.23	14.6	3.27	17.9	14.5	0.83	15.4	1,583	4,856	6,439	4.44	0.30	14.3	6,652
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.49	2.32	1.93	14.8	0.03	0.03	3.27	3.29	0.02	0.83	0.85	—	3,441	3,441	0.19	0.18	0.35	3,498
Area	87.1	88.2	1.67	106	0.19	14.6	—	14.6	14.5	—	14.5	1,555	649	2,204	1.43	0.11	—	2,273
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	370	370	0.04	< 0.005	—	372
Water	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Waste	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	89.6	90.6	3.60	121	0.23	14.6	3.27	17.9	14.5	0.83	15.4	1,583	4,523	6,106	4.45	0.30	1.13	6,308
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.45	2.28	1.93	15.6	0.03	0.03	3.17	3.19	0.02	0.80	0.83	—	3,437	3,437	0.19	0.17	5.72	3,500
Area	19.7	22.0	0.39	25.3	0.04	3.28	—	3.28	3.26	—	3.26	349	150	499	0.32	0.03	—	515

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	370	370	0.04	< 0.005	—	372
Water	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Waste	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	22.2	24.2	2.32	41.0	0.08	3.30	3.17	6.47	3.28	0.80	4.09	377	4,021	4,398	3.33	0.21	6.50	4,552
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.45	0.42	0.35	2.85	0.01	< 0.005	0.58	0.58	< 0.005	0.15	0.15	—	569	569	0.03	0.03	0.95	579
Area	3.60	4.01	0.07	4.62	0.01	0.60	—	0.60	0.59	—	0.59	57.8	24.8	82.7	0.05	< 0.005	—	85.2
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	61.3	61.3	0.01	< 0.005	—	61.6
Water	—	—	—	—	—	—	—	—	—	—	—	0.66	10.5	11.2	0.07	< 0.005	—	13.4
Waste	—	—	—	—	—	—	—	—	—	—	—	3.93	0.00	3.93	0.39	0.00	—	13.7
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	4.05	4.42	0.42	7.48	0.01	0.60	0.58	1.18	0.60	0.15	0.75	62.4	666	728	0.55	0.04	1.08	754

3. Construction Emissions Details

3.1. 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	8.43	7.09	66.1	58.4	0.14	2.69	—	2.69	2.48	—	2.48	—	15,553	15,553	0.63	0.13	—	15,607
Dust From Material Movement	—	—	—	—	—	—	7.80	7.80	—	2.92	2.92	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	5.43	4.80	0.01	0.22	—	0.22	0.20	—	0.20	—	1,278	1,278	0.05	0.01	—	1,283
Dust From Material Movement	—	—	—	—	—	—	0.64	0.64	—	0.24	0.24	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.99	0.88	< 0.005	0.04	—	0.04	0.04	—	0.04	—	212	212	0.01	< 0.005	—	212
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.19	0.18	3.23	0.00	0.00	0.42	0.42	0.00	0.10	0.10	—	470	470	0.02	0.02	1.89	477
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.0	60.0	< 0.005	0.01	0.17	62.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.20	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	35.3	35.3	< 0.005	< 0.005	0.07	35.8
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.93	4.93	< 0.005	< 0.005	0.01	5.15
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.85	5.85	< 0.005	< 0.005	0.01	5.93
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Grading (2025) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	8.43	7.09	66.1	58.4	0.14	2.69	—	2.69	2.48	—	2.48	—	15,553	15,553	0.63	0.13	—	15,607
Dust From Material Movement	—	—	—	—	—	—	7.80	7.80	—	2.92	2.92	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	5.43	4.80	0.01	0.22	—	0.22	0.20	—	0.20	—	1,278	1,278	0.05	0.01	—	1,283

Dust From Material Movement	—	—	—	—	—	—	0.64	0.64	—	0.24	0.24	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.99	0.88	< 0.005	0.04	—	0.04	0.04	—	0.04	—	212	212	0.01	< 0.005	—	212
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.19	0.18	3.23	0.00	0.00	0.42	0.42	0.00	0.10	0.10	—	470	470	0.02	0.02	1.89	477
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.0	60.0	< 0.005	0.01	0.17	62.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.20	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	35.3	35.3	< 0.005	< 0.005	0.07	35.8
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.93	4.93	< 0.005	< 0.005	0.01	5.15
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.85	5.85	< 0.005	< 0.005	0.01	5.93
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.67	6.21	8.17	0.01	0.24	—	0.24	0.22	—	0.22	—	1,511	1,511	0.06	0.01	—	1,516
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.13	1.49	< 0.005	0.04	—	0.04	0.04	—	0.04	—	250	250	0.01	< 0.005	—	251
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.11	1.88	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	1.09	290
Vendor	0.01	< 0.005	0.18	0.07	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	176	176	< 0.005	0.03	0.45	184
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	0.12	1.27	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	254	254	0.01	0.01	0.03	257
Vendor	0.01	< 0.005	0.19	0.07	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	176	176	< 0.005	0.03	0.01	184
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.08	0.90	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	165	165	0.01	0.01	0.30	167
Vendor	< 0.005	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	111	111	< 0.005	0.02	0.12	116
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.3	27.3	< 0.005	< 0.005	0.05	27.7
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	0.02	19.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Building Construction (2026) - Mitigated

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

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

Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.67	6.21	8.17	0.01	0.24	—	0.24	0.22	—	0.22	—	1,511	1,511	0.06	0.01	—	1,516
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.13	1.49	< 0.005	0.04	—	0.04	0.04	—	0.04	—	250	250	0.01	< 0.005	—	251
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.11	1.88	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	286	286	0.01	0.01	1.09	290
Vendor	0.01	< 0.005	0.18	0.07	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	176	176	< 0.005	0.03	0.45	184
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.09	0.12	1.27	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	254	254	0.01	0.01	0.03	257

Vendor	0.01	< 0.005	0.19	0.07	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	176	176	< 0.005	0.03	0.01	184
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.08	0.90	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	165	165	0.01	0.01	0.30	167
Vendor	< 0.005	< 0.005	0.12	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	111	111	< 0.005	0.02	0.12	116
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.3	27.3	< 0.005	< 0.005	0.05	27.7
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	0.02	19.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.80	2.48	< 0.005	0.06	—	0.06	0.06	—	0.06	—	460	460	0.02	< 0.005	—	461
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.33	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	76.1	76.1	< 0.005	< 0.005	—	76.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.10	1.77	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	282	282	0.01	0.01	1.00	286
Vendor	0.01	< 0.005	0.17	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	173	173	< 0.005	0.03	0.40	181
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.11	1.20	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	250	250	0.01	0.01	0.03	254
Vendor	0.01	< 0.005	0.18	0.07	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	173	173	< 0.005	0.03	0.01	180
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.4	49.4	< 0.005	< 0.005	0.08	50.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.1	33.1	< 0.005	< 0.005	0.03	34.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.18	8.18	< 0.005	< 0.005	0.01	8.30

Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.48	5.48	< 0.005	< 0.005	0.01	5.73
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Building Construction (2027) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.80	2.48	< 0.005	0.06	—	0.06	0.06	—	0.06	—	460	460	0.02	< 0.005	—	461
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.33	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	76.1	76.1	< 0.005	< 0.005	—	76.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.10	1.77	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	282	282	0.01	0.01	1.00	286
Vendor	0.01	< 0.005	0.17	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	173	173	< 0.005	0.03	0.40	181
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.11	1.20	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	250	250	0.01	0.01	0.03	254
Vendor	0.01	< 0.005	0.18	0.07	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	173	173	< 0.005	0.03	0.01	180
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.4	49.4	< 0.005	< 0.005	0.08	50.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.1	33.1	< 0.005	< 0.005	0.03	34.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.18	8.18	< 0.005	< 0.005	0.01	8.30
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.48	5.48	< 0.005	< 0.005	0.01	5.73
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.59	0.82	< 0.005	0.03	—	0.03	0.02	—	0.02	—	124	124	0.01	< 0.005	—	125
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.6
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	0.94	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	189	189	0.01	0.01	0.02	192
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	58.9	58.9	< 0.005	0.01	< 0.005	61.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.0	16.0	< 0.005	< 0.005	0.03	16.2
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.84	4.84	< 0.005	< 0.005	0.01	5.05
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.65	2.65	< 0.005	< 0.005	< 0.005	2.68
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.84
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Paving (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.59	0.82	< 0.005	0.03	—	0.03	0.02	—	0.02	—	124	124	0.01	< 0.005	—	125
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.6
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	0.94	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	189	189	0.01	0.01	0.02	192
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	58.9	58.9	< 0.005	0.01	< 0.005	61.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.0	16.0	< 0.005	< 0.005	0.03	16.2
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.84	4.84	< 0.005	< 0.005	0.01	5.05
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.65	2.65	< 0.005	< 0.005	< 0.005	2.68
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.84
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. 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	—	42.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	2.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.35	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.3	56.3	< 0.005	< 0.005	0.20	57.2

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.82	2.82	< 0.005	< 0.005	< 0.005	2.86
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.47	0.47	< 0.005	< 0.005	< 0.005	0.47
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Architectural Coating (2027) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road 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	—	42.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	2.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.35	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.3	56.3	< 0.005	< 0.005	0.20	57.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.82	2.82	< 0.005	< 0.005	< 0.005	2.86

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.47	0.47	< 0.005	< 0.005	< 0.005	0.47
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Utility Installation (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	2.92	2.45	22.9	22.8	0.04	1.02	—	1.02	0.94	—	0.94	—	4,742	4,742	0.19	0.04	—	4,758
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.92	2.45	22.9	22.8	0.04	1.02	—	1.02	0.94	—	0.94	—	4,742	4,742	0.19	0.04	—	4,758
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	0.53	4.98	4.95	0.01	0.22	—	0.22	0.20	—	0.20	—	1,030	1,030	0.04	0.01	—	1,034
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.91	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	171	171	0.01	< 0.005	—	171
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.09	1.49	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	217	217	0.01	0.01	0.87	220
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.0	60.0	< 0.005	0.01	0.17	62.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	1.01	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	193	193	0.01	0.01	0.02	195
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.1	60.1	< 0.005	0.01	< 0.005	62.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.1	43.1	< 0.005	< 0.005	0.08	43.7
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.0	13.0	< 0.005	< 0.005	0.02	13.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.13	7.13	< 0.005	< 0.005	0.01	7.24
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.16	2.16	< 0.005	< 0.005	< 0.005	2.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Utility Installation (2025) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.92	2.45	22.9	22.8	0.04	1.02	—	1.02	0.94	—	0.94	—	4,742	4,742	0.19	0.04	—	4,758
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.92	2.45	22.9	22.8	0.04	1.02	—	1.02	0.94	—	0.94	—	4,742	4,742	0.19	0.04	—	4,758
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	0.53	4.98	4.95	0.01	0.22	—	0.22	0.20	—	0.20	—	1,030	1,030	0.04	0.01	—	1,034
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.91	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	171	171	0.01	< 0.005	—	171
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.09	1.49	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	217	217	0.01	0.01	0.87	220
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.0	60.0	< 0.005	0.01	0.17	62.7

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	1.01	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	193	193	0.01	0.01	0.02	195
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.1	60.1	< 0.005	0.01	< 0.005	62.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.1	43.1	< 0.005	< 0.005	0.08	43.7
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.0	13.0	< 0.005	< 0.005	0.02	13.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.13	7.13	< 0.005	< 0.005	0.01	7.24
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.16	2.16	< 0.005	< 0.005	< 0.005	2.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Utility Installation (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.76	2.32	21.0	22.2	0.04	0.93	—	0.93	0.85	—	0.85	—	4,742	4,742	0.19	0.04	—	4,758

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.28	9.28	< 0.005	< 0.005	—	9.31
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.54	1.54	< 0.005	< 0.005	—	1.54
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	0.94	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	189	189	0.01	0.01	0.02	192
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	58.9	58.9	< 0.005	0.01	< 0.005	61.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	0.38	0.38	< 0.005	< 0.005	< 0.005	0.39
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.12
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Utility Installation (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.76	2.32	21.0	22.2	0.04	0.93	—	0.93	0.85	—	0.85	—	4,742	4,742	0.19	0.04	—	4,758
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.28	9.28	< 0.005	< 0.005	—	9.31
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.54	1.54	< 0.005	< 0.005	—	1.54
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.08	0.07	0.09	0.94	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	189	189	0.01	0.01	0.02	192
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	58.9	58.9	< 0.005	0.01	< 0.005	61.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	0.38	0.38	< 0.005	< 0.005	< 0.005	0.39
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.12
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.79	2.61	1.77	18.6	0.04	0.03	3.27	3.29	0.02	0.83	0.85	—	3,765	3,765	0.18	0.17	13.5	3,834
Total	2.79	2.61	1.77	18.6	0.04	0.03	3.27	3.29	0.02	0.83	0.85	—	3,765	3,765	0.18	0.17	13.5	3,834

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.49	2.32	1.93	14.8	0.03	0.03	3.27	3.29	0.02	0.83	0.85	—	3,441	3,441	0.19	0.18	0.35	3,498
Total	2.49	2.32	1.93	14.8	0.03	0.03	3.27	3.29	0.02	0.83	0.85	—	3,441	3,441	0.19	0.18	0.35	3,498
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.45	0.42	0.35	2.85	0.01	< 0.005	0.58	0.58	< 0.005	0.15	0.15	—	569	569	0.03	0.03	0.95	579
Total	0.45	0.42	0.35	2.85	0.01	< 0.005	0.58	0.58	< 0.005	0.15	0.15	—	569	569	0.03	0.03	0.95	579

4.1.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.79	2.61	1.77	18.6	0.04	0.03	3.27	3.29	0.02	0.83	0.85	—	3,765	3,765	0.18	0.17	13.5	3,834
Total	2.79	2.61	1.77	18.6	0.04	0.03	3.27	3.29	0.02	0.83	0.85	—	3,765	3,765	0.18	0.17	13.5	3,834
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.49	2.32	1.93	14.8	0.03	0.03	3.27	3.29	0.02	0.83	0.85	—	3,441	3,441	0.19	0.18	0.35	3,498
Total	2.49	2.32	1.93	14.8	0.03	0.03	3.27	3.29	0.02	0.83	0.85	—	3,441	3,441	0.19	0.18	0.35	3,498
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.45	0.42	0.35	2.85	0.01	< 0.005	0.58	0.58	< 0.005	0.15	0.15	—	569	569	0.03	0.03	0.95	579
Total	0.45	0.42	0.35	2.85	0.01	< 0.005	0.58	0.58	< 0.005	0.15	0.15	—	569	569	0.03	0.03	0.95	579

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	366	366	0.03	< 0.005	—	368
Total	—	—	—	—	—	—	—	—	—	—	—	—	366	366	0.03	< 0.005	—	368
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	366	366	0.03	< 0.005	—	368
Total	—	—	—	—	—	—	—	—	—	—	—	—	366	366	0.03	< 0.005	—	368
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	60.6	60.6	0.01	< 0.005	—	61.0
Total	—	—	—	—	—	—	—	—	—	—	—	—	60.6	60.6	0.01	< 0.005	—	61.0

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	370	370	0.04	< 0.005	—	372
Total	—	—	—	—	—	—	—	—	—	—	—	—	370	370	0.04	< 0.005	—	372
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	370	370	0.04	< 0.005	—	372
Total	—	—	—	—	—	—	—	—	—	—	—	—	370	370	0.04	< 0.005	—	372
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	61.3	61.3	0.01	< 0.005	—	61.6
Total	—	—	—	—	—	—	—	—	—	—	—	—	61.3	61.3	0.01	< 0.005	—	61.6

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.06	0.03	0.54	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	—	688	688	0.06	< 0.005	—	690

Total	0.06	0.03	0.54	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	—	688	688	0.06	< 0.005	—	690
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.06	0.03	0.54	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	—	688	688	0.06	< 0.005	—	690
Total	0.06	0.03	0.54	0.23	< 0.005	0.04	—	0.04	0.04	—	0.04	—	688	688	0.06	< 0.005	—	690
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	0.01	0.10	0.04	< 0.005	0.01	—	0.01	0.01	—	0.01	—	114	114	0.01	< 0.005	—	114
Total	0.01	0.01	0.10	0.04	< 0.005	0.01	—	0.01	0.01	—	0.01	—	114	114	0.01	< 0.005	—	114

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	87.1	85.7	1.67	106	0.19	14.6	—	14.6	14.5	—	14.5	1,555	649	2,204	1.43	0.11	—	2,273
Consumer Products	—	2.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.29	0.28	0.03	3.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.49	8.49	< 0.005	< 0.005	—	8.52
Total	87.4	88.5	1.70	109	0.19	14.6	—	14.6	14.5	—	14.5	1,555	657	2,212	1.44	0.11	—	2,281
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	87.1	85.7	1.67	106	0.19	14.6	—	14.6	14.5	—	14.5	1,555	649	2,204	1.43	0.11	—	2,273
Consumer Products	—	2.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	87.1	88.2	1.67	106	0.19	14.6	—	14.6	14.5	—	14.5	1,555	649	2,204	1.43	0.11	—	2,273
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	3.57	3.51	0.07	4.34	0.01	0.60	—	0.60	0.59	—	0.59	57.8	24.1	82.0	0.05	< 0.005	—	84.5
Consumer Products	—	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.03	< 0.005	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.69	0.69	< 0.005	< 0.005	—	0.70
Total	3.60	4.01	0.07	4.62	0.01	0.60	—	0.60	0.59	—	0.59	57.8	24.8	82.7	0.05	< 0.005	—	85.2

4.3.2. Mitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	87.1	85.7	1.67	106	0.19	14.6	—	14.6	14.5	—	14.5	1,555	649	2,204	1.43	0.11	—	2,273
Consumer Products	—	2.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.29	0.28	0.03	3.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.49	8.49	< 0.005	< 0.005	—	8.52

Total	87.4	88.5	1.70	109	0.19	14.6	—	14.6	14.5	—	14.5	1,555	657	2,212	1.44	0.11	—	2,281
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	87.1	85.7	1.67	106	0.19	14.6	—	14.6	14.5	—	14.5	1,555	649	2,204	1.43	0.11	—	2,273
Consumer Products	—	2.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	87.1	88.2	1.67	106	0.19	14.6	—	14.6	14.5	—	14.5	1,555	649	2,204	1.43	0.11	—	2,273
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	3.57	3.51	0.07	4.34	0.01	0.60	—	0.60	0.59	—	0.59	57.8	24.1	82.0	0.05	< 0.005	—	84.5
Consumer Products	—	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.03	< 0.005	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.69	0.69	< 0.005	< 0.005	—	0.70
Total	3.60	4.01	0.07	4.62	0.01	0.60	—	0.60	0.59	—	0.59	57.8	24.8	82.7	0.05	< 0.005	—	85.2

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Total	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Total	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.66	10.5	11.2	0.07	< 0.005	—	13.4
Total	—	—	—	—	—	—	—	—	—	—	—	0.66	10.5	11.2	0.07	< 0.005	—	13.4

4.4.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Total	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Total	—	—	—	—	—	—	—	—	—	—	—	4.00	63.6	67.6	0.42	0.01	—	81.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.66	10.5	11.2	0.07	< 0.005	—	13.4
Total	—	—	—	—	—	—	—	—	—	—	—	0.66	10.5	11.2	0.07	< 0.005	—	13.4

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Total	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Total	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	3.93	0.00	3.93	0.39	0.00	—	13.7
Total	—	—	—	—	—	—	—	—	—	—	—	3.93	0.00	3.93	0.39	0.00	—	13.7

4.5.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Total	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Total	—	—	—	—	—	—	—	—	—	—	—	23.7	0.00	23.7	2.37	0.00	—	83.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	3.93	0.00	3.93	0.39	0.00	—	13.7
Total	—	—	—	—	—	—	—	—	—	—	—	3.93	0.00	3.93	0.39	0.00	—	13.7

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13

4.6.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

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

4.8.2. Mitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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

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

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	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
Grading	Grading	8/1/2025	9/11/2025	5.00	30.0	—
Building Construction	Building Construction	2/13/2026	4/8/2027	5.00	300	—
Paving	Paving	1/2/2026	2/12/2026	5.00	30.0	—
Architectural Coating	Architectural Coating	4/9/2027	5/6/2027	5.00	20.0	—
Utility Installation	Trenching	9/12/2025	1/1/2026	5.00	80.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38

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

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	6.00	8.00	423	0.48

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

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Grading	—	—	—	—
Grading	Worker	32.5	18.5	LDA,LDT1,LDT2
Grading	Vendor	2.00	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT

Building Construction	—	—	—	—
Building Construction	Worker	20.2	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	5.99	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	2.00	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.03	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Utility Installation	—	—	—	—
Utility Installation	Worker	15.0	18.5	LDA,LDT1,LDT2
Utility Installation	Vendor	2.00	10.2	HHDT,MHDT
Utility Installation	Hauling	0.00	20.0	HHDT
Utility Installation	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Grading	—	—	—	—
Grading	Worker	32.5	18.5	LDA,LDT1,LDT2
Grading	Vendor	2.00	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT

Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	20.2	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	5.99	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	2.00	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.03	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Utility Installation	—	—	—	—
Utility Installation	Worker	15.0	18.5	LDA,LDT1,LDT2
Utility Installation	Vendor	2.00	10.2	HHDT,MHDT
Utility Installation	Hauling	0.00	20.0	HHDT
Utility Installation	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	221,130	73,710	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Grading	—	—	225	0.00	—
Paving	0.00	0.00	0.00	0.00	0.62

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.62	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005
2027	0.00	532	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
Single Family Housing	529	534	479	190,647	4,561	4,609	4,131	1,644,697

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	529	534	479	190,647	4,561	4,609	4,131	1,644,697

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	20
Gas Fireplaces	31
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	6
Conventional Wood Stoves	0
Catalytic Wood Stoves	3
Non-Catalytic Wood Stoves	3
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	20
Gas Fireplaces	31
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	6
Conventional Wood Stoves	0
Catalytic Wood Stoves	3
Non-Catalytic Wood Stoves	3
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
221130	73,710	0.00	0.00	—

5.10.3. Landscape Equipment

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

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00

Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	386,128	346	0.0330	0.0040	2,146,779

5.11.2. Mitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	390,089	346	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)
Single Family Housing	2,087,333	12,974,626

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	2,087,333	12,974,626

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	44.0	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	44.0	—

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
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

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

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. Mitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

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	34.7	annual days of extreme heat
Extreme Precipitation	3.35	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	16.8	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

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

6.2. Initial Climate Risk Scores

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

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

6.3. Adjusted Climate Risk Scores

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

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	88.7
AQ-PM	5.68
AQ-DPM	4.75
Drinking Water	68.2
Lead Risk Housing	19.1
Pesticides	0.00
Toxic Releases	64.6
Traffic	3.16
Effect Indicators	—
CleanUp Sites	25.6
Groundwater	0.00

Haz Waste Facilities/Generators	19.2
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	66.5
Cardio-vascular	58.3
Low Birth Weights	41.1
Socioeconomic Factor Indicators	—
Education	32.2
Housing	21.1
Linguistic	20.6
Poverty	48.4
Unemployment	41.8

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	66.2517644
Employed	42.62799949
Median HI	70.9354549
Education	—
Bachelor's or higher	41.07532401
High school enrollment	25.75388169
Preschool enrollment	32.91415373
Transportation	—
Auto Access	37.4566919

Active commuting	5.902733222
Social	—
2-parent households	48.9285256
Voting	84.19094059
Neighborhood	—
Alcohol availability	86.48787373
Park access	8.738611574
Retail density	0.911074041
Supermarket access	2.399589375
Tree canopy	26.6521237
Housing	—
Homeownership	71.88502502
Housing habitability	81.11125369
Low-inc homeowner severe housing cost burden	78.35236751
Low-inc renter severe housing cost burden	57.85961761
Uncrowded housing	61.41408957
Health Outcomes	—
Insured adults	96.85615296
Arthritis	70.7
Asthma ER Admissions	48.5
High Blood Pressure	85.8
Cancer (excluding skin)	47.4
Asthma	55.1
Coronary Heart Disease	77.0
Chronic Obstructive Pulmonary Disease	65.3
Diagnosed Diabetes	75.2
Life Expectancy at Birth	13.3

Cognitively Disabled	64.4
Physically Disabled	78.7
Heart Attack ER Admissions	31.7
Mental Health Not Good	52.8
Chronic Kidney Disease	85.5
Obesity	51.2
Pedestrian Injuries	39.7
Physical Health Not Good	62.9
Stroke	75.8
Health Risk Behaviors	—
Binge Drinking	10.6
Current Smoker	46.7
No Leisure Time for Physical Activity	71.3
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	33.8
Elderly	61.9
English Speaking	77.4
Foreign-born	9.6
Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	81.9
Traffic Density	2.3
Traffic Access	23.0
Other Indices	—
Hardship	35.1

Other Decision Support	—
2016 Voting	53.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	22.0
Healthy Places Index Score for Project Location (b)	57.0
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	Lot acreage adjusted to match site plan.
Construction: Construction Phases	Construction schedule updated per applicant information.
Construction: Off-Road Equipment	Construction equipment for grading, paving, and utilities provided by applicant/contractor.

APPENDIX B

ENERGY CALCULATIONS

Lancaster Residential Project—Energy Consumption Summary

Date of Last Revision: September 18, 2023

Summary of Energy Use During Construction (2025)		(Annually)
Construction vehicle fuel	15,541	gallons (gasoline, diesel)
Construction equipment fuel	66,899	gallons (diesel)

Summary of Energy Use During Proposed Operations (2027)		(Annually)
Operational vehicle fuel consumption	66,756	gallons (gasoline, diesel)
Operational electricity consumption	390,089	kilowatt hours

Construction Vehicle Fuel Calculations (Page 1 of 2)

California Air Resource Board (CARB). 2023. EMFAC2021 Web Database. Website: https://arb.ca.gov/emfac/emissions-inventory/. Accessed Sept 18, 2023.

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Los Angeles (MD)
Calendar Year: 2025, 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

VMT = Vehicle Miles Traveled
FE = Fuel Economy

Given									*Calculations*	
Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT (mi/day)	Fuel Consumption (1000 gallons/day)	FE (mi/gallon)	VMT*FE
Los Angeles (MD)	2025	HHDT	Aggregate	Aggregate	Gasoline	0.04031115	21.28015	0.004139633	5.140588207	109.3925
Los Angeles (MD)	2025	HHDT	Aggregate	Aggregate	Diesel	1465.91888	251786.45	38.92306373	6.468824006	1628762
Los Angeles (MD)	2025	LDA	Aggregate	Aggregate	Gasoline	75722.5507	3936269.3	130.2601417	30.21852493	1.19E+08
Los Angeles (MD)	2025	LDA	Aggregate	Aggregate	Diesel	273.141872	12512.116	0.277660224	45.0626886	563829.6
Los Angeles (MD)	2025	LDT1	Aggregate	Aggregate	Gasoline	6165.36134	271279.55	10.83292371	25.04213605	6793419
Los Angeles (MD)	2025	LDT1	Aggregate	Aggregate	Diesel	3.529491	74.284829	0.002942352	25.24675458	1875.451
Los Angeles (MD)	2025	LDT2	Aggregate	Aggregate	Gasoline	24549.9207	1261880.6	50.93883115	24.77246912	31259899
Los Angeles (MD)	2025	LDT2	Aggregate	Aggregate	Diesel	70.8967286	4003.7589	0.112719715	35.51959715	142211.9
Los Angeles (MD)	2025	LHDT1	Aggregate	Aggregate	Gasoline	2506.12057	97180.729	7.1585057	13.57556069	1319283
Los Angeles (MD)	2025	LHDT1	Aggregate	Aggregate	Diesel	2256.99525	88167.344	4.112109805	21.44090207	1890387
Los Angeles (MD)	2025	LHDT2	Aggregate	Aggregate	Gasoline	339.500388	13313.406	1.072465694	12.41382905	165270.3
Los Angeles (MD)	2025	LHDT2	Aggregate	Aggregate	Diesel	1007.31964	40186.306	2.261073738	17.77310744	714235.5
Los Angeles (MD)	2025	MDV	Aggregate	Aggregate	Gasoline	20076.2531	946191.63	47.65395412	19.85546952	18787079
Los Angeles (MD)	2025	MDV	Aggregate	Aggregate	Diesel	326.699471	15753.052	0.629573056	25.021802	394169.8
Los Angeles (MD)	2025	MHDT	Aggregate	Aggregate	Gasoline	148.027261	15751.114	2.902113414	5.42746342	85488.6
Los Angeles (MD)	2025	MHDT	Aggregate	Aggregate	Diesel	1693.1803	86020.248	9.12631307	9.425520166	810785.6

Worker	
Sum of VMT*FE (Column BI)	**1.77E+08**
Total VMT	**6447964**
Weighted Average Fuel Economy	**27.43358**

Vendor	
Sum of VMT*FE (Column BI)	**6614322**
Total VMT	**592426.9**
Weighted Average Fuel Economy	**11.16479**

Haul	
Sum of VMT*FE (Column BI)	**1628872**
Total VMT	**251807.7**
Weighted Average Fuel Economy	**6.468712**

Construction Vehicle Fuel Calculations (Page 2 of 2)

Construction Schedule

Source: CalEEMod Output

Lancaster Residential Project

CalEEMod Phase Type	Phase Name	Start Date	End Date	Num Days Week	Num Days
Grading	Grading	8/1/2025	9/11/2025	5	30
Building Construction	Building Construction	2/13/2026	4/8/2027	5	300
Paving	Paving	1/2/2026	2/12/2026	5	30
Architectural Coating	Architectural Coating	4/9/2027	5/6/2027	5	20
Utility Installation	Trenching	9/12/2025	1/1/2026	5	80

Construction Trips and VMT

	Trips per Day			Construction Trip Length in Miles			Number of Days per Phase	Trips per Phase			VMT per Phase			Fuel Consumption (gallons)		
Phase Name	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length		Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trips	Vendor Trips	Hauling Trips	Worker Trips	Vendor Trips	Hauling Trips
Grading	65.0	4	0	18.5	10.2	20	30	1,950	120	0	36,075	1,224	0	1,314.99	109.63	0.00
Building Construction	40	12	0	18.5	10.2	20	300	12,000	3,600	0	222,000	36,720	0	8,092.27	3,288.91	0.00
Paving	30	4	0	18.5	10.2	20	30	900	120	0	16,650	1,224	0	606.92	109.63	0.00
Architectural Coating	8	0	0	18.5	10.2	20	20	160	0	0	2,960	0	0	107.90	0.00	0.00
Trenching	30	4	0	18.5	10.2	20	80	2,400	320	0	44,400	3,264	0	1,618.45	292.35	0.00
											322,085	42,432	0	11,741	3,801	0

Total Project Construction VMT (miles)
364,517

Total Project Fuel Consumption (gallons)
15,541

Construction Equipment Fuel Calculation

Lancaster Residential Project

Construction Schedule

CalEEMod Phase Type	Phase Name	Start Date	End Date	Num Days/ Week	Num Days
Grading	Grading	8/1/2025	9/11/2025	5	30
Building Construction	Building Construction	2/13/2026	4/8/2027	5	300
Paving	Paving	1/2/2026	2/12/2026	5	30
Architectural Coating	Architectural Coating	4/9/2027	5/6/2027	5	20
Utility Installation	Trenching	9/12/2025	1/1/2026	5	80

Construction Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of Days	HP Hours	HP Bin	Equipment Type + HP	Fuel (gallons/HP-hour)	Diesel Fuel Usage
Grading	Excavators	2	8	36	0.38	30	6,566.40	50	Excavators 50	0.05609785	368.36
Grading	Graders	1	8	148	0.41	30	14,563.20	175	Graders 175	0.05382880	783.92
Grading	Rubber Tired Dozers	2	8	367	0.4	30	70,464.00	600	Rubber Tired Dozers 600	0.04536070	3,196.30
Grading	Scrapers	6	8	423	0.48	30	292,377.60	600	Scrapers 600	0.04768168	13,941.05
Grading	Tractors/Loaders/Backhoes	2	8	84	0.37	30	14,918.40	100	Tractors/Loaders/Backhoes 100	0.05648827	842.71
Building Construction	Cranes	1	7	367	0.29	300	223,503.00	600	Cranes 600	0.05152933	11,516.96
Building Construction	Forklifts	3	8	82	0.2	300	118,080.00	100	Forklifts 100	0.05787522	6,833.91
Building Construction	Generator Sets	1	8	14	0.74	300	24,864.00	15	Generator Sets 15	0	0.00
Building Construction	Tractors/Loaders/Backhoes	3	7	84	0.37	300	195,804.00	100	Tractors/Loaders/Backhoes 100	0.05648827	11,060.63
Building Construction	Welders	1	8	46	0.45	300	49,680.00	50	Welders 50	0.02579528	1,281.51
Paving	Pavers	2	8	81	0.42	30	16,329.60	100	Pavers 100	0.05653635	923.22
Paving	Paving Equipment	2	8	89	0.36	30	15,379.20	100	Paving Equipment 100	0.05958651	916.39
Paving	Rollers	2	8	36	0.38	30	6,566.40	50	Rollers 50	0.05785104	379.87
Architectural Coating	Air Compressors	1	6	37	0.48	20	2,131.20	50	Air Compressors 50	0.02761632	58.86
Trenching	Rubber Tired Dozers	1	8	367	0.4	80	93,952.00	600	Rubber Tired Dozers 600	0.04536070	4,261.73
Trenching	Graders	1	8	148	0.41	80	38,835.20	175	Graders 175	0.05382880	2,090.45
Trenching	Scrapers	1	8	423	0.48	80	129,945.60	600	Scrapers 600	0.04768168	6,196.02
Trenching	Tractors/Loaders/Backhoes	2	8	84	0.37	80	39,782.40	100	Tractors/Loaders/Backhoes 100	0.05648827	2,247.24
Trenching	Other Construction Equipment	1	8	82	0.42	80	22,041.60	100	Other	0	0.00
											66,899.13

Notes:

Equipment assumptions are provided in the CalEEMod output files.

Source of usage estimates: California Air Resource Board (CARB). 2023. OFFROAD2021 (v1.0.4) Emissions Inventory

Website: https://arb.ca.gov/emfac/emissions-inventory/. Accessed September 18, 2023.

Model Output: OFFROAD2021 (v1.0.5) Emissions Inventory
Region Type: Sub-Area
Region: Los Angeles (MD)
Calendar Year: 2025
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hour

Region	CalYr	Vehicle Class + HP Bin	Model Year	Fuel
Los Angele	2025	Cranes 100	Aggregate	Diesel
Los Angele	2025	Cranes 175	Aggregate	Diesel
Los Angele	2025	Cranes 50	Aggregate	Diesel
Los Angele	2025	Cranes 600	Aggregate	Diesel
Los Angele	2025	Excavators 100	Aggregate	Diesel
Los Angele	2025	Excavators 175	Aggregate	Diesel
Los Angele	2025	Excavators 50	Aggregate	Diesel
Los Angele	2025	Excavators 600	Aggregate	Diesel
Los Angele	2025	Graders 100	Aggregate	Diesel
Los Angele	2025	Graders 175	Aggregate	Diesel
Los Angele	2025	Graders 50	Aggregate	Diesel
Los Angele	2025	Graders 600	Aggregate	Diesel
Los Angele	2025	Other	Aggregate	Diesel
Los Angele	2025	Pavers 100	Aggregate	Diesel
Los Angele	2025	Pavers 175	Aggregate	Diesel
Los Angele	2025	Pavers 50	Aggregate	Diesel
Los Angele	2025	Pavers 600	Aggregate	Diesel
Los Angele	2025	Paving Equipment 100	Aggregate	Diesel
Los Angele	2025	Paving Equipment 175	Aggregate	Diesel
Los Angele	2025	Paving Equipment 50	Aggregate	Diesel
Los Angele	2025	Paving Equipment 600	Aggregate	Diesel
Los Angele	2025	Rollers 100	Aggregate	Diesel
Los Angele	2025	Rollers 175	Aggregate	Diesel
Los Angele	2025	Rollers 50	Aggregate	Diesel
Los Angele	2025	Rollers 600	Aggregate	Diesel
Los Angele	2025	Forklifts 100	Aggregate	Diesel
Los Angele	2025	Rough Terrain Forklifts 175	Aggregate	Diesel
Los Angele	2025	Rough Terrain Forklifts 50	Aggregate	Diesel
Los Angele	2025	Rough Terrain Forklifts 600	Aggregate	Diesel
Los Angele	2025	Rubber Tired Dozers 100	Aggregate	Diesel
Los Angele	2025	Rubber Tired Dozers 175	Aggregate	Diesel
Los Angele	2025	Rubber Tired Dozers 50	Aggregate	Diesel
Los Angele	2025	Rubber Tired Dozers 600	Aggregate	Diesel
Los Angele	2025	Scrapers 100	Aggregate	Diesel
Los Angele	2025	Scrapers 175	Aggregate	Diesel
Los Angele	2025	Scrapers 50	Aggregate	Diesel
Los Angele	2025	Scrapers 600	Aggregate	Diesel

Los Angele	2025	Tractors/Loaders/Backhoes 100	Aggregate	Diesel
Los Angele	2025	Tractors/Loaders/Backhoes 175	Aggregate	Diesel
Los Angele	2025	Tractors/Loaders/Backhoes 50	Aggregate	Diesel
Los Angele	2025	Tractors/Loaders/Backhoes 600	Aggregate	Diesel
Los Angele	2025	Air Compressors 15	Aggregate	Diesel
Los Angele	2025	Air Compressors 50	Aggregate	Diesel
Los Angele	2025	Generator Sets 15	Aggregate	Diesel
Los Angele	2025	Generator Sets 50	Aggregate	Diesel
Los Angele	2025	Welders 15	Aggregate	Diesel
Los Angele	2025	Welders 50	Aggregate	Diesel

s/year for Horsepower-hours

Fuel Consumption (gallons/year)	Horsepower Hours (HP-hours/year)	Fuel (gallons/HP-hour)
267.4467758	3275.372643	0.081653847
2003.489339	33972.5462	0.058973776
22.75312411	266.6762234	0.085321158
9032.470799	175287.9624	0.051529327
7463.647766	132484.3596	0.056336067
42114.07563	834583.9807	0.05046116
12091.03881	215534.7821	0.056097854
52018.26442	1033947.895	0.050310334
308.9243267	5122.457469	0.060307836
4936.914891	91715.1147	0.053828804
37.89570123	628.0990897	0.060333953
3942.161442	78202.42645	0.050409707
9.092044238	0	0
1037.99707	18359.8162	0.056536354
3492.12008	69185.0132	0.050475095
188.5959067	3313.900885	0.056910545
750.9871338	15010.17948	0.050031856
590.4780153	9909.591424	0.059586515
3876.988437	76616.91788	0.05060225
486.9669947	8549.379564	0.056959337
4138.99276	82457.66796	0.050195365
2915.855817	50248.88672	0.058028267
16762.79657	331363.2137	0.050587379
4706.078433	81348.20229	0.057851044
1167.05116	23706.94963	0.04922823
4171.575696	72078.78639	0.057875221
26815.7764	531239.2719	0.050477775
150.0037563	2674.795141	0.056080465
65.24179431	1290.818285	0.050542973
203.6419842	3445.983319	0.059095464
633.7785679	12535.01826	0.050560642
44.29282482	480.4478563	0.092190701
4199.573597	92581.76957	0.045360697
109.0326195	1723.547951	0.063260566
881.7944411	17097.75648	0.051573693
12.58688781	107.596291	0.116982544
45413.61883	952433.3659	0.047681676

50227.91068	889174.1167	0.056488273
53221.82619	1051471.168	0.050616534
4727.16609	79985.06438	0.05910061
17180.11924	341928.6503	0.050244749
143.488515	0	0
7526.3	272530.9	0.027616318
8360.589654	0	0
20739.3	490472.4	0.042284336
3285.574102	0	0
34539.95	1339002.5	0.025795284

Operational Fuel Calculation—Project-Generated Operational Trips (Page 1 of 2)

California Air Resource Board (CARB). 2023. EMFAC2021 Web Database. Website: https://arb.ca.gov/emfac/emissions-inventory/. Accessed September 18, 2023.

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Los Angeles (MD)
Calendar Year: 2025, 2027
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

VMT = Vehicle Miles Traveled
FE = Fuel Economy

				Given						*Calculations*
Region	Calendar Year	Vehicle Class	Model Year	Speed	Fuel	Population	VMT	Fuel Consumption	FE	VMT*FE
Los Angeles (MD)	2027	LDA	Aggregate	Aggregate	Gasoline	73880.04169	3906002.232	124.9927663	31.24982628	122061891
Los Angeles (MD)	2027	LDA	Aggregate	Aggregate	Diesel	233.1322815	10749.64006	0.235551121	45.63612351	490571.901
									Sum of VMT*FE	**122552463**
									Total VMT	**3916751.87**
									Weighted Average Fuel Economy	**31.2893099**
Los Angeles (MD)	2027	LDT1	Aggregate	Aggregate	Gasoline	5698.934574	256308.2979	9.934806288	25.7990232	6612503.73
Los Angeles (MD)	2027	LDT1	Aggregate	Aggregate	Diesel	1.074633678	23.56133797	0.000884898	26.6260549	627.345479
Los Angeles (MD)	2027	LDT2	Aggregate	Aggregate	Gasoline	24443.17641	1290420.786	49.69798595	25.96525314	33506102.4
Los Angeles (MD)	2027	LDT2	Aggregate	Aggregate	Diesel	76.88990498	4365.228397	0.119107111	36.64960352	159983.89
Los Angeles (MD)	2027	MDV	Aggregate	Aggregate	Gasoline	18897.90883	915075.5993	44.23300204	20.68762139	18930737.5
Los Angeles (MD)	2027	MDV	Aggregate	Aggregate	Diesel	303.9197126	14624.26463	0.57037651	25.63966849	374961.297
									Sum of VMT*FE	**59584916.2**
									Total VMT	**2480817.74**
									Weighted Average Fuel Economy	**24.0182563**
Los Angeles (MD)	2027	LHDT1	Aggregate	Aggregate	Gasoline	2331.992338	93687.02464	6.616936839	14.15866993	1326483.66
Los Angeles (MD)	2027	LHDT1	Aggregate	Aggregate	Diesel	2133.387976	84396.81026	3.926506658	21.49412127	1814035.27
Los Angeles (MD)	2027	LHDT2	Aggregate	Aggregate	Gasoline	322.9646074	12955.28469	1.010001577	12.82699452	166177.366
Los Angeles (MD)	2027	LHDT2	Aggregate	Aggregate	Diesel	973.0148023	38924.4282	2.177327222	17.8771605	695858.25
Los Angeles (MD)	2027	MHDT	Aggregate	Aggregate	Gasoline	141.8475757	16021.30164	2.881589605	5.559883201	89076.5658
Los Angeles (MD)	2027	MHDT	Aggregate	Aggregate	Diesel	1751.084979	86920.77683	9.12428768	9.526308231	828034.112
Los Angeles (MD)	2027	HHDT	Aggregate	Aggregate	Gasoline	0.059198906	29.09291366	0.005619974	5.176698626	150.605246
Los Angeles (MD)	2027	HHDT	Aggregate	Aggregate	Diesel	1522.889694	258724.023	38.57480805	6.707072208	1735280.7
									Sum of VMT*FE	**6655096.54**
									Total VMT	**591658.742**
									Weighted Average Fuel Economy	**11.2482011**
Los Angeles (MD)	2027	MCY	Aggregate	Aggregate	Gasoline	3798.305692	22506.75852	0.534945811	42.072969	946926.153
									Weighted Average Fuel Economy	**42.072969**
Los Angeles (MD)	2027	MH	Aggregate	Aggregate	Gasoline	688.5803158	6306.690183	1.272772666	4.955079844	31250.1534
Los Angeles (MD)	2027	MH	Aggregate	Aggregate	Diesel	269.9796295	2472.80378	0.239433538	10.3277252	25538.4379
Los Angeles (MD)	2027	OBUS	Aggregate	Aggregate	Gasoline	45.83537349	3529.119655	0.67049147	5.263481807	18575.4571
Los Angeles (MD)	2027	OBUS	Aggregate	Aggregate	Diesel	47.20667994	3492.82787	0.487997866	7.157465455	24999.7948
Los Angeles (MD)	2027	SBUS	Aggregate	Aggregate	Gasoline	51.95549721	5368.808444	0.564430804	9.511898377	51067.5603
Los Angeles (MD)	2027	SBUS	Aggregate	Aggregate	Diesel	356.0704619	7990.611869	1.038592088	7.69369607	61477.3391
Los Angeles (MD)	2027	UBUS	Aggregate	Aggregate	Diesel	8.074811102	1430.192269	0.252263588	5.669435998	8108.38353
									Sum of VMT*FE	**221017.126**
									Total VMT	**30591.0541**
									Weighted Average Fuel Economy	**7.22489411**

Operational Fuel Calculation—Project-Generated Operational Trips (Page 2 of 2)

Total Operational VMT

Lancaster Residential Project

Trip Type	Annual VMT
Single-Family Residential	1,644,696.87

Fleet Mix

				Light-Heavy to Heavy-Heavy					Other				
LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	MCY	OBUS	UBUS	SBUS	MH	
0.556173029	0.036398749	0.183857717	0.132016019	0.08				0.003195927	0.004343885				1.000

Fleet mix based on the EMFAC VMT data above

Vehicle Type	Fraction of 1	Annual VMT	Average Fuel Economy (miles/gallon)	Total Annual Fuel Consumption (gallons)
Passenger Cars (LDA)	0.5562	914,736	31.29	29,235
Light Trucks and Medium Vehicles (LDT1, LDT2, anc	0.3523	579,381	24.02	24,123
Light-Heavy to Heavy-Heavy Diesel Trucks	0.0840	138,179	11.25	12,285
Motorcycles	0.0032	5,256	42.07	125
Other	0.0043	7,144	7.22	989
Total	1.0000	1644697		**66,756**