San Luis West Solar Project



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AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT

Fresno County, California
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Appendix A: CalEEMod

ACRONYMS AND ABBREVIATIONS

AAQA	Ambient Air Quality Analysis
AB	Assembly Bill
ABAG	Association of Bay Area Governments
BESS	battery energy storage system
C. immitus	Coccidioides immitus
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAP	Climate Action Plan
CCAA	California Clean Air Act
CCAP	Community Climate Action Plan
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_{2e}	CO_2 equivalent
DPM	Diesel Particulate Matter
EPA	U.S. Environmental Protection Agency
Facility	San Luis West Solar Project
gen-tie	interconnection generation tie
GHG	greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutants
HFC	hydrofluorocarbon
HRA	health risk assessment
ISR	Indirect Source Review
lbs/day	pounds per day
MT	metric tons

MW	megawatt
NAAQS	National Ambient Air Quality Standards
N_2O	nitrous oxide
NO_2	Nitrogen Dioxide
NO_X	Oxides of Nitrogen
O_3	Ozone
PFC	perfluorocarbons
PG&E	Pacific Gas and Electric
PM_{10}	Particulate Matter less than 10 microns
$PM_{2.5}$	Particulate Matter less than $_{2.5}$ microns
Project	San Luis West Solar Project
Project proponent	San Luis West Solar, LLC
PV	photovoltaic
ROG	reactive organic gases
RPS	Renewable Portfolio Standard
RTP/SCS	Regional Transportation Plan and Sustainable Communities Strategy
SB	Senate Bill
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SJCOG	San Joaquin Council of Governments
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminants

1.0 INTRODUCTION

1.1 Purpose

Tetra Tech has prepared an air quality analysis report to evaluate potential air quality and GHG impacts associated with the proposed San Luis West Solar Project (Project). This analysis was prepared in accordance with the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (SJVAPCD, 2015a). This report has been prepared to support an environmental review with San Joaquin County as lead CEQA agency for the Project. The California Air Resources Board (CARB) and the SJVAPCD's methods, standards, and significance thresholds used in this analysis are considered appropriate for determining whether impacts require mitigation measures to be implemented.

The California Emissions Estimator Model (CalEEMod) was used to calculate the emissions associated with both construction activities and operations and maintenance of the facility. The total Project construction and operational emissions were compared to the SJVAPCD threshold criteria to make a determination of significance.

For the construction phase of the Project, emissions from the combustion of fuel in grading and construction equipment were calculated based on the equipment used, length of time for a specific construction task, equipment power type (gasoline or diesel engine), horsepower, and percentage of time in use as estimated by the Project as well as equipment emission factors, and load factors. Motor vehicle exhaust and fugitive dust emissions associated with worker commutes and travel were calculated based on available information regarding these activities. Fugitive dust (particulate matter less than 10 microns [PM_{10}] and less than 2.5 microns [$PM_{2.5}$]) emissions would result from wind erosion of exposed soil and soil storage piles, grading operations, and vehicles traveling on paved and unpaved roads and surfaces. These emissions were calculated based on U.S. Environmental Protection Agency (EPA, 2006a & 2006b; EPA, 2011) emissions factors contained in CalEEMod and construction information provided to Tetra Tech by the Project.

For the Project operation and maintenance phase, motor vehicle exhaust emissions were calculated for future conditions, utilizing information on facility operations provided to Tetra Tech by the Project.

A discussion of GHGs and their potential effects on global climate change is also included. Emissions of carbon dioxide (CO_2), a key GHG identified in Assembly Bill (AB) 32, and other GHGs such as methane (CH_4) and nitrous oxide (N_2O) from direct and indirect Project-related sources were calculated. Tetra Tech calculated the construction-related GHG emissions commensurate with provided Project specific information. Standard measures for construction activities recommended by the SJVAPCD were identified and incorporated as part of the Project's standard conditions. Potential GHG impacts and benefits associated with the proposed energy storage Project were calculated and compared to the SJVAPCD threshold criteria to make a determination of significance.

1.2 Project Description

The Project consists of constructing and operating a 125 MW solar electric generation facility coupled with a 30 MW BESS Energy Storage Project to provide reliable and flexible power and deliver low-cost, clean renewable energy into the electrical grid operated by PG&E for regional consumption. Key

components of the Project would include PV modules, Collection and interconnection line systems, BESS components, a collector substation, and an interconnection gen-tie line to the PG&E Gates Substation. The Project would also include related and supporting facilities such as access roads, gates and security fencing, and temporary laydown and construction areas.

The Project would support the state policies necessary to meet the California renewable energy standards. California has proceeded to advance energy storage uses to support the grid, including the passage of AB 2514, as well as the resulting California Public Utilities Commission decision for energy procurement targets for each of the investor-owned utilities. The proposed Project would substantially increase local energy storage capacity and address the limitations of the electrical grid by the increasing demand for renewable energy. Layering energy storage systems into the energy grid improves grid reliability and makes it more resilient to disturbances and peaks in energy demand. The Project and other energy storage systems are used to supply power during brief disturbances, reduce outages and associated impacts to the community, and substitute for certain large footprint transmission and disruption upgrades.

Access onto the Project site will be provided via Interstate 5 to exit 325, West Jayne Avenue. Once constructed, the Project would operate 7 days per week, 365 days per year. The facility would be operated by San Luis West Solar, LLC (the Project proponent) or an affiliated company remotely. Only occasional, on-site maintenance is expected to be required following commissioning, including routine maintenance and repairs, periodic panel washing, and grounds maintenance (vegetation control).

1.3 Regional and Local Setting

The Project consists of a photovoltaic (PV) solar generating facility with a nameplate production capacity of 125 megawatts (MW) of alternating current (AC) renewable energy as well as a Battery Energy Storage System (BESS) capable of storing approximately 30 MW of energy with a 4-hour/120 MW-hour (MWh) storage duration. The Project is a utility-scale solar farm on seven parcels totaling approximately 1,400 acres, including solar panels, security fencing, and BESS storage modules. The Project site, which encompasses all areas of temporary and permanent impacts, is approximately 1,100 acres.

The Project site is located in an unincorporated area of southern Fresno County (County), approximately 10 miles northwest of Kettleman City and will connect to Pacific Gas and Electric Company's (PG&E's) 500-kV Gates substation (see Figure 1). The seven parcels associated with the project occupy parts of six different sections, spread among Townships 20 and 21 South, and Ranges 17 and 18 East, of the Mount Diablo Meridian (see Figure 2). The Project parcels are situated adjacent or proximal to West Jayne Avenue, from the Gates substation on the western extent to the California Aqueduct on the eastern extent. The Project site is primarily agricultural land, zoned AE-20 or AE-40 (Exclusive Agriculture with a minimum lot size) in the unincorporated areas of Fresno County. The parcels in the general vicinity of the Project site are similarly zoned.

Existing agricultural roads within the Project site will be used for access during construction. No road improvements have been proposed as a part of the Project at the time of this report. The Project site includes three subareas, shown on Figure 2 as Subareas A, B, and C. These Subareas are defined below:

- **Subarea A** would include approximately 280 acres of solar arrays and associated infrastructure (i.e., internal roads, medium voltage collection lines, substation, BESS and project O&M building) located on four parcels totaling approximately 800 acres, of which approximately 650 acres are currently leased by the Project and approximately 150 acres are owned by the Project. Subarea A is located southeast of the existing PG&E Gates Substation, immediately south of West Jayne Avenue and approximately 0.5-mile due west of SR-269. The Substation will also be located within Subarea A and it is anticipated that the BESS will be co-located with the Substation in Subarea A. Two temporary laydown areas totaling approximately 10 acres would be located in Subarea A, along West Jayne Avenue.
- **Subarea B** would include approximately 250 acres of solar arrays and associated infrastructure (i.e., internal roads and medium voltage collection lines) on one parcel, consisting of approximately 300 acres of fully leased land. Subarea B is bordered by SR-269 to the west, West Jayne Avenue to the south, and active row crops to the east.
- **Subarea C** would include approximately 240 acres of solar arrays and associated infrastructure (i.e., internal roads and medium voltage collection lines) on approximately 325 acres of land leased by the Project. Subarea C consists of two parcels located just west of the California Aqueduct. West Jayne Avenue bisects the bottom half of Subarea C.

Energy from the various solar arrays transmitted to the Substation via a series of 34.5 kilovolt (kV) "collection lines". As depicted in Figure 2, the collection line will begin in the middle section of Subarea B and run directly south along an existing agricultural road for approximately 0.75-mile before angling slightly west and undergrounding at West Jayne Avenue to connect with Subarea A. The collection line system will connect to the BESS and Substation in Subarea A, then a 230 kV gen-tie line will connect from Subarea A to the Point of Interconnection (POI) at the PG&E Gates substation.

2.0 AIR QUALITY

2.1 Environmental Setting

2.1.1 Climate and Topography

The San Joaquin Valley Air Basin (SJVAB) is comprised of eight counties, representing 16 percent of California's geographic area. It is approximately 250 miles long and 35 miles wide (average) and has a bowl-shaped topography with surrounding mountains on three sides. The Sierra Nevada Mountains are to the east, the Coast Ranges to the west, and the Tehachapi mountains to the south. At the northwest end, the SJVAB opens to the San Francisco Bay. The Sacramento Valley extends the valley topography northward beyond the San Joaquin River Delta.

The San Joaquin Valley is in a Mediterranean Climate Zone, characterized by hot and dry summers with maximum temperatures that often exceed 100 degrees Fahrenheit, and winters with sparse rainfall. High pressure events can lead to temperature inversions, inhibiting vertical mixing and trapping air pollutants. Winds in the valley most frequently blow from the northwest during summers, channeling air towards the southeastern end of the SJVAB. Marine air occasionally flows from the San Joaquin River Delta toward the south, over the Tehachapi pass. The Coastal Range and the Sierra Nevada range

restrict air movement to the west and east, respectively. During winter, weak winds can lead to limited transport of pollutants (SJVAPCD, 2015a).

2.1.2 Pollutants and Effects

The Clean Air Act (CAA) requires EPA to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants. EPA calls these "criteria" air pollutants because it regulates them by developing health-based (primary) or environmentally-based (secondary) standards. Additionally, California Ambient Air Quality Standards (CAAQS) have been established for the criteria air pollutants. California law continues to mandate CAAQS, although attainment of the NAAQS has precedence over attainment of the CAAQS due to federal penalties for failure to meet federal attainment deadlines (CARB, 2024a). California law does not require that CAAQS be met by specified dates as is the case with NAAQS. Rather, it requires incremental progress toward attainment (CARB, 2024a).

The six criteria air pollutants are summarized below.

Nitrogen Oxides (NO_X) are a group of gaseous nitrogen compounds that are precursors to the formation of ozone and particulate matter. Nitrogen dioxide (NO_2) and nitric oxide (NO) result primarily from the combustion of fossil fuels with ambient air. NAAQS and CAAQS have been established specifically for NO_2, but not for other NO_X compounds.

Ozone (O_3) is a secondary pollutant that is formed from the reaction of NO_X and volatile organic compounds (VOC) precursors in the presence of sunlight. Ozone exists naturally in the stratosphere, shielding Earth from harmful ultraviolet radiation. However, at ground-level, ozone causes adverse health effects and is a major component of smog. High concentrations have been tied to respiratory ailments and cardiovascular disease, as well as damage to natural ecosystems, agricultural crops, and materials such as rubber, paint, and plastics.

Reactive organic gases (ROG)[1] are composed of hydrocarbon compounds that contribute to the formation of smog through atmospheric chemical reactions. ROG are emitted from fuel combustion and industrial and agricultural processes. A number of ROG compounds are listed under California's AB 2588 air toxics provisions.

Particulate Matter (PM) is comprised of solid particles and liquid droplets, made up of acids, organic chemicals, metals, and soil or dust particles. Particles that are 10 micrometers in aerodynamic diameter or smaller (PM_{10}) are a potential human health concern because they can enter the lungs (i.e., inhalable PM), which can affect the heart and cause adverse health effects. They can be emitted directly to the atmosphere as well as formed in the atmosphere by chemical reactions among precursors. PM_{10} can be further categorized based on particle size:

[1] CARB defines both VOC and ROG as, "any compound of carbon excluding CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," with the exception that VOC are compounds that participate in atmospheric photochemical reactions (CARB 2009). For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions. ROG is henceforth used in this report.

Fine particles are 2.5 micrometers in aerodynamic diameter or smaller ($PM_{2.5}$) and are generally emitted by combustion sources like motor vehicles, power generation facilities, industrial processes, and wood burning.

Inhalable coarse particles ($PM_{2.5}$-PM_{10}) are between 2.5 and 10 micrometers in aerodynamic diameter. Sources of emissions include roads (both unpaved and paved), farming activities, and windblown dust as well as combustion sources.

Carbon Monoxide (CO) is an odorless, colorless gas formed by the incomplete combustion of fuels. The main source of CO in the SJVAB is on-road motor vehicles. Therefore, CO problems tend to be localized in urban areas rather than across the entire air basin. The combination of motor vehicle fleet turnover and progressively more stringent automotive emission controls over time have resulted in CO emissions declining for decades.

Sulfur Dioxide (SO_2) is a colorless gas formed by the combustion of fossil fuels that contain sulfur. The mandated use of low-sulfur fuel has reduced the emissions of this pollutant over time.

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Sources of lead emissions include ore and metals processing and piston-engine aircraft operating on leaded aviation fuel. Other sources are waste incinerators, utilities, and lead-acid battery manufacturers. Leaded motor vehicle gasoline, previously a major source of airborne lead was phased out as result of EPA's regulatory effort to reduce ambient concentrations.

2.1.3 Valley Fever

Valley Fever is an infection caused by inhalation of Coccidioides immitus (C. immitus or CI) fungus spores. The fungus grows in the soil in areas of California and the southwestern United States. It is prevalent in the San Joaquin Valley and particularly during conditions of high summer temperatures, mild winters, sparse rainfall, and alkaline, sandy soils. Fungus spores lie dormant in the soil until they are disturbed by wind, vehicles, or other ground-disturbing activities and become airborne. Agricultural workers, construction workers, and other people who are exposed to wind and dust outdoors are most prone to contracting Valley Fever. Infections can result in mild influenza-like symptoms, such as fever, cough, chest pain, muscle or joint aches, night sweats, and rash. Rarely, in more serious cases, it can infect the brain, joints, bone, skin or other organs, or cause death.

In California, the number of reported Valley Fever cases has greatly increased in recent years with the number of cases tripling from 2015 to 2019 (CDC, 2022). The number of Valley Fever cases in the United States has also been steadily increasing over the past few years with a rate of 18 cases per 100,000 people in 2020, and about 20 cases per 100,000 people in 2021 (CDPH, 2022).

Currently, no vaccine is available to prevent this infection, but antifungal medications are available for treatment, particularly for severe disease. Further, there is no effective way to detect and monitor CI growth patterns in the soil. Thus, controlling the growth of the fungus in the environment to reduce the risk to individuals is currently not a viable option. Even if the fungus is present in the soil, earth-moving activities may not result in an increased incidence of Valley Fever. Propagation of Coccidioides is dependent on climatic conditions, with the potential for growth and surface exposure highest following early seasonal rains and long dry spells.

Although Fresno County has seen a decrease in reported Valley Fever cases in recent years, it remains a hot spot for infections, ranking in the top 5 California counties for disease incidence. In 2022, there were 469 cases of Valley Fever reported in Fresno County (Fresno County, 2024).

2.1.4 Sensitive Receptors

Sensitive receptors are segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems related to respiratory distress). Land uses often identified as sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. The greatest potential for exposure to air pollutants would occur during construction, when the ground would be disturbed from grading and delivery of materials. The construction emissions presented in this analysis are based on worst-case conditions, assuming maximum construction activity would occur simultaneously. In reality, exposure to emissions would vary substantially throughout construction, and would depend on the staging of the work being conducted over time, location of work relative to receptors, and weather conditions.

As stated previously, the Project is located on privately owned lands historically used for agriculture. Therefore, land use in the area is agricultural interspersed with sparse rural residential development.

Several residences that are on land not owned by the current property owner are located on W. Jayne Ave, with the closest being approximately 60 feet west of APN 07808055 . Other residences in the Project vicinity include those belonging to the landowner, from whom the applicant will be purchasing the parcels should the Project proceed into construction. These are not considered to be sensitive receptors for the purpose of this analysis.

2.2 Air Quality Regulatory Setting

Ambient air quality standards are the levels of air quality considered safe, with an adequate margin of safety, to protect public health and welfare. They are designed to protect those people most susceptible to respiratory distress (i.e., sensitive receptors), such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The following discussion describes the regulatory authority of the federal, state, and local jurisdictions. The federal Clean Air Act (CAA), the California Clean Air Act (CCAA), and the Air Quality Management Plan (AQMP), prepared and adopted by the SJVAPCD, regulate air quality in the air basin. Federal and state standards are shown in Table 1, State and National Ambient Air Quality Standards.

2.2.1 Federal Regulations

2.2.1.1 Criteria Air Pollutants

The Federal CAA (42 United States Code Sections 7401-7675) is a comprehensive Federal law that regulates air emissions from area, stationary, and mobile sources and requires the adoption of the NAAQS to protect public health and welfare from the effects of air pollution. The Federal CAA Amendments of 1990 required that the EPA review all NAAQS with respect to health impacts and

propose modifications or new rules as appropriate. In addition, the amendments of the 1990 Federal CAA are associated with the attainment and maintenance of air quality standards, permits and enforcement, toxic air pollutants, acid deposition, stratospheric ozone protection, and motor vehicles and fuels.

NAAQS are currently assigned to SO_2, CO, NO_2, O_3, PM_{10}, $PM_{2.5}$, and Lead. These pollutants are designated criteria pollutants.

2.2.1.2 Hazardous Air Pollutants

The 1977 Federal CAA amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants (HAPs) to protect public health and welfare. HAPs include certain volatile organic compounds, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. The 1990 Federal CAA Amendments, which expanded the control program for HAPs, identified 189 substances and chemical families as HAPs. Over the years, the list has been modified. Currently, there are 187 federally regulated HAPs.

2.2.2 State Regulations

2.2.2.1 Criteria Air Pollutants

The CCAA passed by the California Legislature and signed into law by the Governor in 1988, assigns state-specific ambient air quality standards which had originally been established in part in 1959 by the California Department of Public Health. The California standards are, in most cases, more stringent than federal standards. The goal of the CCAA is to attain state air quality standards by the earliest practical date. Because California established Ambient Air Quality Standards several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology in much of California, there can be a considerable difference between CAAQS and NAAQS. Those standards currently in effect in California are shown on Table 1, State and National Ambient Air Quality Standards.

The CCAA requires each air pollution control district of an air basin designated as nonattainment of state ambient air quality standards to prepare and submit a plan for attaining and maintaining state standards (specifically, an Air Quality Management Plan [AQMP]).

After further review of the relationship between fine particulate matter and human health effects, the CARB adopted new state standards on June 20, 2002, for $PM_{2.5}$. No specific control programs are in place to achieve the more stringent standard. However, it does represent an air quality goal intended to dramatically reduce the adverse health effects from fine-particle air pollution.

Table 1. State and National Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[1]		NAAQS[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		

Pollutant	Averaging Time	CAAQS[1]		NAAQS[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	9 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10mg/m³)		9 ppm (10 mg/m³)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
Nitrogen Dioxide (NO_2)[8]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemilumine-scence	100 ppb (188 µg/m³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[9]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)[9]	—	
	Annual Arithmetic Mean	—		0.30 ppm (for certain areas)[9]	—	
Lead (Pb)[10, 11]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[9]	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates (SO_4)	24 Hour	25 µg/m³	Ion Chromatography			

Pollutant	Averaging Time	CAAQS[1]		NAAQS[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
Hydrogen Sulfide	24 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: CARB, 2016 and EPA, 2024a]

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

2 National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the EPA for further clarification and current national policies.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. The torr (symbol: Torr) is a non-SI unit of pressure with the ratio of 760 to 1 standard atmosphere, chosen to be roughly equal to the fluid pressure exerted by a millimeter of mercury, i.e., a pressure of 1 Torr is approximately equal to one millimeter of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

7 Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

8 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

9 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

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

11 The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

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

2.2.2.2 Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California Toxic Air Contaminants (TAC) list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the Federal HAPs. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, facilities are required to communicate the results to the public in the form of notices and public meetings.

Diesel Particulate Matter (DPM), a mixture of solid particles in diesel engine exhaust, is classified as a carcinogen and TAC in California. Long-term exposure to DPM poses the highest cancer risk of any toxic air contaminant evaluated by OEHHA. ARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from DPM. Exposure to DPM is highest near roads and freeways, truck loading and unloading operations, and diesel-powered machinery operations. Exposure to diesel exhaust in general can have immediate health effects such as irritation to the eyes, nose, throat, and lungs. It can also cause coughs, headaches, light-headedness, and nausea (OEHHA 2023).

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. In 2020, CARB adopted the Advanced Clean Truck Regulations that requires truck manufacturers to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, every new truck sold in California will be zero-emission.

Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, On-Road Heavy Duty (New) Vehicle Program, In-Use Off-Road Diesel Vehicle Regulation, and New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. Several Airborne Toxic Control Measures reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 California Code of Regulations [CCR] 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

California Health and Safety Code Section 41700

Section 41700 of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. Section 41700 also applies to sources of objectionable odors.

State Implementation Plans

The federal CAA requires all states to submit a State Implementation Plan (SIP) to USEPA. SIPs are not single documents. They are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. Many of California's SIPs and attainment plans rely on the same core set of control strategies described above, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law designates CARB as the lead agency for all purposes related to SIPs and attainment plans. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB forwards those revisions to USEPA for approval and publication in the Federal Register.

The law also requires submission of attainment plans for areas that are designated nonattainment with respect to the NAAQS. These attainment plans are comprehensive plans that describe how a Federal nonattainment area will attain and maintain the particular NAAQS standard(s) it does not conform to. Once the area is redesignated as attainment for the NAAQS in question, a maintenance area classification is required for a period of twenty years to provide assurance the area will continue to be in attainment, and SIPs must be submitted under this maintenance area classification.

2.2.2.3 Valley Fever

In 2019, Section 6709 was added to the AB 203 California Labor Code. This legislation requires employers to provide effective Valley Fever awareness and prevention training on an annual basis for all construction employees at risk of prolonged exposure to dust in Fresno, Kern, Kings, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, Santa Barbara, Tulare, and Ventura Counties. Additionally, the training must be provided before an employee begins work that is reasonably anticipated to cause exposure due to substantial dust disturbance.

2.2.3 Local Regulations

2.2.3.1 San Joaquin Valley Air Pollution Control District

The CARB coordinates and oversees both state and federal air pollution control programs in California and has divided the state into 15 air basins. Significant authority for air quality control within each basin has been given to local Air Pollution Control Districts (APCD) or Air Quality Management Districts (AQMD) that regulate stationary source emissions and develop local nonattainment plans. The SJVAPCD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in the SJVAB. The SJVAPCD jurisdiction includes all of Merced, San Joaquin, Stanislaus, Madera, Fresno, Kings, and Tulare counties, and the western portion of Kern County.

The SJVAPCD has developed the following plans to attain state and federal standards for ozone and particulate matter:

- **1- Hour Ozone**. The district adopted the “Extreme Ozone Attainment Plan” in October 2004 to address EPA’s 1-hour Ozone standard. The plan contained emission reductions and a timeline for attaining the federal 1-hour ozone ambient air quality standards in the SJVAB by November 15, 2010 (SJVAPCD, 2004). Although the EPA revoked the 1-hour ozone standard in 2005, the SJVAB was required to demonstrate that this standard had been met. Following this, the district adopted the 2013 Plan for the Revoked 1-Hour Ozone Standard to attain the 1-Hour Ozone Standard by 2017 (SJVAPCD, 2013). In 2015, the district submitted an Attainment Determination Request to the EPA based on 2012-2014 Ozone data. On July 18, 2016 (81 FR 46609), EPA determined that the SJVAB had achieved the 1-hour ozone NAAQS. On June 15, 2023, the district adopted the “2023 Maintenance Plan and Redesignation Request for the Revoked 1-Hour Ozone Standard” which includes a demonstration that would ensure the area remains in attainment of the 1-hour ozone NAAQS through 2036 (SJVAPCD, 2023).
- **8- Hour Ozone**. The EPA promulgated 8-hour ozone NAAQS in 1997, 2008, and 2015, with each successive rule promulgating more stringent NAAQS. The SJVAPCD has been required to

develop plans for each of the NAAQS. The SJVAPCD developed the 2016 Ozone Plan (SJVAPCD, 2016) to address EPA's 2008 8-hour ozone standard, which the air basin must attain by 2032. While substantial progress has been made to improve air quality in the SJVAB through the implementation of existing plans and clean air investments by businesses and residents, the SJVAB continues to experience unique and significant air quality challenges in attaining the increasingly stringent NAAQS. The SJVAB is classified as an "extreme" nonattainment area for the 2015 ozone standard. On June 18, 2020, the District published the 2020 RACT Demonstration for the 2015 8-Hour Ozone Standard. The 2022 attainment plan for the 2015 8-hour ozone standard was adopted in December 2022. SJVAPCD's current regulations reflect technologies and methods that are beyond control levels established under the Clean Air Act. The control strategy included in the 2022 Ozone Plan will reduce NO_X emissions by 72% between 2018 and 2037, which will help the Valley's progress toward attaining the 2015 8-hour ozone standard. The district and state's incentive programs will also reduce emissions from mobile sources in the coming years. The 2022 Plan for the 2015 8-hour Ozone Standard demonstrates that reductions being achieved will ensure expeditious attainment of the 2015 8-hour ozone standard by the 2037 attainment deadline (SJVACPD, 2022).

- **PM_{10}.** The SJVAPCD adopted the 2007 PM_{10} Maintenance Plan and Request for Redesignation (SJVAPCD 2007), which demonstrated that the SJVAB has attained and will continue to attain the PM_{10} standard. EPA approved the document in 2008 and SJVAB was redesignated to attainment/maintenance.
- **$PM_{2.5}$.** The SJVAPCD's 2008 $PM_{2.5}$ Plan demonstrated attainment of the 1997 $PM_{2.5}$ standard in 2014. EPA subsequently promulgated increasingly more stringent NAAQS in 2006, 2012, and 2024. The SJVAPCD's 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards (SJVAPCD, 2018) sets an attainment deadline of 2024. This plan was approved by EPA on June 30, 2020. Due to the SJVAB's designation as nonattainment with respect to the 2012 NAAQS, the area is likely to be designated nonattainment with respect to the 2024 NAAQS. The promulgation of the 2024 NAAQS will eventually require a plan to be developed, but the Federal CAA first requires EPA to designate the attainment status within two years (i.e., by May 2026). CARB must submit the attainment plan within 18 months of the effective designation date (i.e., no later than November 2027, but could be earlier depending on how quickly the nonattainment designations are promulgated).

The SJVAPCD's primary means of implementing air quality plans is by adopting and enforcing rules and regulations. Stationary sources within the jurisdiction are regulated by the SJVAPCD's permit authority and through its review and planning activities. Unlike stationary source projects, which encompass very specific types of equipment, process parameters, throughputs, and controls, air emissions sources from land use development projects are primarily mobile sources (i.e., construction equipment and motor vehicles) and area sources (small dispersed stationary and other non-mobile sources), including exempt sources (i.e., no permit required) such as consumer products, landscaping equipment, furnaces, and water heaters. Mixed-use land development projects may include nonexempt sources, including devices such as stationary internal combustion engines i.e., backup power generators), small to large boilers, gas stations, or asphalt batch plants.

Notwithstanding nonexempt stationary sources, which would be permitted on a case-by-case basis, the following SJVAPCD regulations generally apply to land use development projects:

Regulation IV. Prohibitions.

- Rule 4101. Visible Emissions. The purpose of this rule is to prohibit the emissions of visible air contaminants to the atmosphere.
- Rule 4102. Nuisance. Rule 4102 prohibits the discharge of air contaminants or other materials in quantities that may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or that endanger the comfort, repose, health, or safety of any such person or the public.

Regulation VIII - Fugitive PM_{10} Prohibition. Rule 8021 Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities. Pursuant to Rule 8021 Section 6.3, the Project would be required to develop, prepare, submit, obtain approval of, and implement a Dust Control Plan, which would reduce fugitive dust impacts to less than significance thresholds for all construction phases of the Project. Table 8021-1 provides control measure options for construction, excavation, extraction, and other earth moving activities.

Regulation IX - Mobile and Indirect Sources. Rule 9510 Indirect Source Review (ISR). The ISR rule went into effect March 1, 2006, and requires developers of new residential, commercial, and some industrial projects to reduce NO_X and PM_{10} emissions generated by their projects. Section 6.0 of the ISR rule outlines general mitigation requirements for developments that include reduction in construction emissions of 20 percent of the total construction NO_X emissions, and 45 percent of the total construction PM_{10} exhaust emissions. The rule also requires the Project to reduce operational NO_X emissions by 33.3 percent and operational PM_{10} emissions by 50 percent, over a period of 10 years. Section 7.0 of the ISR rule includes fee schedules for construction or operational excess emissions of NO_X or PM_{10} if those emissions are above the goals identified in Section 6.0 of the rule. Monies collected from this fee are used by the SJVAPCD to fund emission reduction projects in the SJVAB on behalf of the Project.

Rule 9610 State Implementation Plan Credit for Emission Reductions Generated through Incentive Programs. Rule 9610 provides an administrative mechanism for the SJVAPCD to receive credit towards California SIP requirements for emission reductions achieved in the SJVAB through incentive programs administered by the SJVAPCD, United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), or CARB. On April 9, 2015, EPA finalized a limited approval and limited disapproval (for a minor administrative error) of Rule 9610 as a revision to the California SIP. Additional documentation regarding the effectiveness of the SJVAPCD's incentive programs can be found in the 2015 Annual Demonstration Report SIP Credit for Emission Reductions Generated Through Incentive Programs (SJVAPCD, 2015b).

2.2.3.2 Fresno County General Plan

The Fresno County General Plan, adopted in October 2000, is a comprehensive, long-term framework for the protection of the county's agricultural, natural, and cultural resources and for development in the county (Fresno County, 2000). Goal OS-G under the Natural Resources - Air Quality element serves

to improve air quality and minimize the adverse effects of air pollution in Fresno County. The policies applicable to the Project are as follows:

Environmental Assessment and Mitigation

- Policy OS-G.1 The County shall develop standard methods for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents. The County will do this in conjunction with the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) and the cities in Fresno County.
- Policy OS-G.2 The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.

Particulate Matter/Fugitive Dust

- Policy OS-G.13 The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVUAPCD's PM_{10} regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.
- Policy OS-G.14 The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

In April 2022, the County published the 2021 General Plan Annual Process Report. The Purpose of this report is to comply with California Government Code section 65400(b)(1), which mandates that all cities and counties submit to their legislative bodies an annual report on the status of their General Plan and progress in its implementation (Fresno County, 2022).

2.3 Regional And Local Air Quality Conditions

2.3.1 San Joaquin Valley Air Basin Attainment Status

In an effort to protect human health and welfare, the CARB and EPA have established Ambient Air Quality Standards. Areas are considered in “attainment” if standards are met and “nonattainment” if they are not met. For ozone, nonattainment status is further classified as marginal, moderate, serious, severe, or extreme. For PM_{10} and $PM_{2.5}$, nonattainment status is further classified as moderate or serious.

At the federal level, the SJVAB is designated as an extreme nonattainment area for the 8-hour ozone standard, a serious nonattainment area for $PM_{2.5}$, and a maintenance area for PM_{10}. At the state level, the SJVAB is designated as a severe nonattainment area for the 1-hour ozone standard, nonattainment for the 8-hour ozone standard, and nonattainment for both the PM_{10} and $PM_{2.5}$ standards. The attainment classifications for the criteria pollutants are presented in Table 2.

Table 2. San Joaquin Valley Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone (1-Hour)	No Federal Standard	Nonattainment/Severe
Ozone (8-Hour)	Nonattainment/Extreme	Nonattainment
NO2	Attainment/Unclassified	Attainment
CO	Attainment/Unclassified	Attainment/Unclassified
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Nonattainment/Serious	Nonattainment
SO_2	Attainment/Unclassified	Attainment
Lead	Attainment/Unclassified	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Source: EPA, 2024b & CARB, 2022a.

2.3.2 Local Ambient Air Quality

An extensive air monitoring network operated by SJVAPCD, CARB, and the U.S. National Park Service measure concentrations of air pollutants to determine attainment status as well as generate air quality forecasts.

The closest monitor measuring ozone and $PM_{2.5}$ concentrations is the Tranquility monitoring station, located approximately 37 miles northwest of the Project area. For NO_2, the closest monitor is the Parlier monitoring station located approximately 45 miles northeast of the Project area. For PM_{10}, the closest monitor is the Fresno-Drummond monitoring station located approximately 43 miles northeast of the Project area. For SO_2, the closest monitor is the Fresno-Garland monitoring station located approximately 48 miles northeast of the Project area. Finally, for CO, the Fresno Foundry monitoring station is the closest, located approximately 44 miles northeast of the proposed Project. For the purposes of this analysis, these monitoring locations were considered to be conservatively representative of the air quality in the immediate vicinity of the Project. Table 3 summarizes the most recent air quality data from 2020 through 2022 with the number of days exceeding the ambient air quality standards.

Table 3. Local Ambient Air Quality Monitoring Data for the Years 2020-2022

Averaging Period	2020	2021	2022
Ozone (O_3) – Tranquility, California Monitoring Station (AQS Site ID: 06-019-2009)			
1-hour Maximum Concentration (ppm)	0.087	0.088	0.074
Number of days exceeding CAAQS = **0.09 ppm**	0	0	0
8-hour Maximum Concentration	0.079	0.080	0.066
Number of days exceeding CAAQS = **0.070 ppm**	3	5	0
Number of days exceeding NAAQS = **0.070 ppm**	3	5	0
Nitrogen Dioxide (NO2) – Parlier, California Monitoring Station (AQS Site ID: 06-019-4001)			
1-hour Maximum Concentration (ppb)	37.0	33.5	32.4

Averaging Period	2020	2021	2022
Number of days exceeding CAAQS = **180 ppb**	0	0	0
Number of days exceeding NAAQS = **100 ppb**	0	0	0
Annual Average Concentration (ppm) (**53 ppb NAAQS**)	7	6	7
Carbon Monoxide (CO) – Fresno-Foundry, California Monitoring Station (AQS Site ID: 06-019-2016)			
1-hour Maximum Concentration (ppm)	2.3	2.6	3.4
Number of days exceeding CAAQS = **20 ppm**	0	0	0
Number of days exceeding NAAQS = **35 ppm**	0	0	0
8-hour Maximum Concentration (ppm)	2.0	2.2	2.5
Number of days exceeding CAAQS = **9 ppm**	0	0	0
Number of days exceeding NAAQS = **9.0 ppm**	0	0	0
Inhalable Particulate Matter (PM10) – Fresno-Drummond, California Monitoring Station (AQS Site ID: 06-019-0007)			
24-hour Maximum Concentration (µg/m^3)	350.4	151.8	73.4
Number of days exceeding CAAQS = **50 µg/m^3**	25	20	133
Number of days exceeding NAAQS = **150 µg/m^3**	1	0	0
Annual Average Concentration (µg/m^3) (**20 µg/m^3 CAAQS**)	*	*	*
Fine Particulate Matter (PM2.5) – Tranquility, California Monitoring Station (AQS Site ID: 06-019-2009)			
24-hour Maximum Concentration (µg/m^3)	146.2	65.3	33.1
Number of days exceeding NAAQS = **35 µg/m^3**	21	7	0
Annual Average Concentration (µg/m^3) (**12 µg/m^3 NAAQS**)[1]	11.6	9.0	*
Sulfur Dioxide (SO2)2 – Fresno-Garland, California Monitoring Station (AQS Site ID: 06-019-0011)			
1-hour Maximum Concentration (ppm)	16.2	7.5	3.4
Number of days exceeding NAAQS = **75 ppb**	0	0	0
24-hour Maximum Concentration (ppm)	2.2	2.7	1.2
Number of days exceeding CAAQS = **40 ppb**	0	0	0
Annual Average Concentration (ppm) (**30 ppb CAAQS**)	0.44	0.43	0.34

Notes: µg/m3 – microgram per cubic meter; CAAQS – California ambient air quality standards; NAAQS – National ambient air quality standards; ppb – parts per billion; ppm – parts per million.

1 Revised effective May 6, 2024 (89 FR 16202, Reconsideration of the National Ambient Air Quality Standards for Particulate Matter)

2 A 3-hour average secondary SO2 NAAQS of 0.5 ppm is not to be exceeded more than once per year. 3-hour average concentrations of SO2 were not readily available for the monitor. However, because the maximum 1-hour average concentrations are less than the 3-hour NAAQS, the area is meeting the 3-hour secondary NAAQS.

* means that there was insufficient data available to determine the value

Sources: CARB, 2024b and EPA, 2024c

2.4 Significance Criteria and Methodology

2.4.1 Thresholds of Significance

2.4.1.1 California Environmental Quality Act Guidelines

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the CEQA Guidelines, which indicates that a project has significant air quality impact if it will:

- Conflict with or obstruct implementation of the applicable air quality plan.

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable federal or state ambient air quality standards.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

2.4.1.2 San Joaquin Valley Air Pollution Control District

In addition to the air quality criteria above, SJVAPCD's Guidance for Assessing and Mitigating Air Quality includes one additional criterion as follows:

- Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Criteria Pollutants

The Guidance for Assessing and Mitigating Air Quality Impacts has established emissions-based thresholds of significance for criteria pollutants (SJVAPCD, 2015a), which are shown in Table 4. The SJVAPCD has established significance thresholds for construction emissions and operational permitted and non-permitted equipment and activities, and it recommends evaluating impact significance for these categories separately. These thresholds of significance are based on a calendar-year basis, although construction emissions are assessed on a rolling 12-month period.

Table 4. SJVAPCD Air Quality Thresholds of Significance – Criteria Pollutants

Pollutant	Construction Emissions (tons per year)	Operational Emissions (tons per year)	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
ROG	10	10	10
NO_X	10	10	10
CO	100	100	100
SOx	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	10	10	10

Source: SJVAPCD, 2015a

In addition to the annual emissions mass thresholds described in Table 4, the SJVAPCD has also established screening criteria to determine whether a project would result in a CO hotspot at affected roadway intersections (SJVAPCD, 2015a). If neither of the following criteria are met at any of the intersections affected by the Project, the Project would result in no potential to create a violation of the CO standard:

- A traffic study for the project indicates that the level of service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F.
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at more intersections in the project vicinity.

An LOS E Roadway is characterized by unstable traffic flow at or near capacity levels with poor levels of comfort and convenience. An LOS F Roadway is characterized by forced traffic flow in which the amount of traffic approaching a point exceeds the amount that can be served. LOS F is characterized by stop-and-go waves, poor travel times, low comfort and convenience, and increased accident exposure. The Project is located in a sparsely populated area and is unlikely to result in challenges to traffic flow.

Ambient Air Quality Analysis

The SJVAPCD recommends that an Ambient Air Quality Analysis (AAQA) be performed when on-site emissions of any criteria pollutant would equal or exceed 100 pounds per day (lbs/day). If emissions of one criteria pollutant exceeds the threshold, then all criteria pollutants are to be modeled. In the AAQA, air pollutant concentrations are determined by conducting air dispersion modeling, adding the resulting concentrations to ambient background levels, and comparing to the applicable ambient air quality standard. A project would be considered a significant impact if its emissions are predicted to cause or contribute to a violation of an ambient air quality standard by exceeding any CAAQS or NAAQS. If an exceedance of the CAAQS or NAAQS is predicted, modeled concentrations may be compared to significant impact levels to assess whether a project's emissions would contribute significantly to an existing violation of the CAAQS or NAAQS.

Toxic Air Contaminants

The SJVAPCD has established thresholds of significance for combined TAC emissions from the operations of both permitted and non-permitted sources (SJVAPCD, 2015a). Projects that have the potential to expose the public to TACs in excess of the following thresholds would be considered to have a significant air quality impact:

- Probability of contracting cancer for the maximally exposed individual equals or exceeds 20 in 1 million people.
- Hazard Index for acute and chronic noncarcinogenic TACs equals or exceeds 1 for the maximally exposed individual.

Odors

As described in the Guidance for Assessing and Mitigating Air Quality Impacts, due to the subjective nature of odor impacts, there are no quantitative thresholds to determine if potential odors would have a significant impact (SJVAPCD, 2015a). Projects must be assessed for odor impacts on a case-by-case basis for the following two situations:

- Generators: Projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate.
- Receivers: Residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources.

2.4.2 Approach and Methodology

Air quality and global climate change impacts associated with the proposed Project are related to emissions that would occur during construction and subsequent operation of the proposed Project.

The principal sources of pollutants during construction would be earth-moving activities, construction equipment, trucks bringing materials to and from the site, and construction crew commuting vehicles. There are numerous air quality modeling tools available to assess air quality impacts of the Project. Emissions were estimated using CalEEMod (Version 2022.1.1.21). The model contains data specific to each California air basin. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. For calculation of on-road (off-site) mobile sources, CalEEMod uses the EMFAC 2021 emissions model.

2.4.2.1 Construction

The Construction processes are anticipated to occur during a period of approximately 9 months, starting in early 2025. Project construction would consist of five primary stages (Table 5. Construction Schedule), with an overlap between the third and fourth stages. The first stage would include mobilization, site preparation, fencing, trenching and installation of access corridors. Construction would begin with the installation of fencing around the perimeter of the Project site. Fencing would be designed to allow movement of sensitive wildlife. Grading would occur on the site to achieve the required surface conditions. It would be minimal and staged to minimize dust, maintain existing drainage patterns, and ensure stability of the equipment installations. The Project would comply with SJVAPCD Rule 8021 to control dust emissions generated during grading activities. Water for dust control and other construction needs would be trucked to the site. The access corridors would be built of compacted native material to provide access to the panels for maintenance.

The second stage would involve installation of the Solar Arrays and Inverters. The solar trackers would be assembled and installed, and the solar panels attached to them. Concrete slabs would be poured at the inverter locations, and the inverter components would be put in place. Alternatively, prefabricated equipment would be installed on the slab.

The third stage would consist of installation of the underground electric lines to connect the solar arrays with the inverters and the inverters to the substation. This would be followed by the final stage which would include installation of the substation and transmission interconnection. The onsite substation would be fenced and covered in gravel and the substation equipment would be installed. The substation would then be connected directly to the gen-tie line leading to the PG&E Gates Substation.

Construction would primarily occur during daylight hours, Monday through Friday between 7:00 a.m. and 6:00 p.m. as required to meet the construction schedule. Additional hours/days may be necessary to facilitate the schedule. It was assumed that construction equipment would operate for 5 days per week during Project construction.

The onsite construction workforce is expected to peak at 300 individuals who will be onsite at any given time. It is anticipated that most workers would commute to the site from nearby communities such as Huron, Coalinga, Lemoore, Visalia and other locales within commuting distance to the Project site. Workers would reach the site using existing roads. Carpooling to site will be encouraged, and therefore actual worker trips will be less than peak Projected trips. As a conservative measure, for this analysis 50 miles has been used for the workers' one-way vehicle miles traveled (VMT).

The project would also include hauling, vendor and on-site trucks that will be used for transporting materials on and/or off-site during construction. Vehicle use of area roadways resulting from Project construction activities would be limited to the 9-month construction period, as workers and materials are transported to and from the Project site.

Construction scenario assumptions, including phasing, equipment, and vehicle trips, were based on information provided by the Project proponent. CalEEMod divides the construction processes into phases, which can be modified to fit Project specifications.

During construction of the Project, water would be required for common construction-related purposes, including (but not necessarily limited to) dust suppression, soil compaction, and grading. Water for dust control may be used for ingress and egress of onsite construction vehicle equipment traffic and for the construction of the solar equipment. Approximately 120 acre-feet of water is estimated to be used for dust control. A sanitary water supply would not be required during construction, because restroom facilities would be provided by portable units to be serviced by licensed providers. Water demand during construction is expected to be the same if the project is constructed during a year with normal precipitation, a year with less-than-average precipitation, or a multiyear period of less-than-average precipitation.

Each construction phase has the potential to generate the following: (1) fugitive dust emissions resulting from soil disturbance activity; (2) emissions of air pollutants from fuel combustion in construction equipment; and (3) emissions of air pollutants from fuel combustion in vehicles used for worker commute, equipment deliveries, and material hauling.

In addition to the generators used in the Project as described in the detailed CalEEMod Report in Appendix A, an additional generator rated 300-400 kW would be used to power the trailers. Emissions from these units are provided as standalone calculations in Appendix B.

Table 5 shows the construction schedule and Table 6 shows the construction equipment and vehicle trips.

Table 5. Construction Schedule

Stage	Description	Duration (Days)
1	Site Preparation and Grading	40
2	Solar Arrays and Inverters Installation	60
3	Electrical Work	40
4	Substation Installation	40
5	Transmission Interconnection	20

Table 6. Construction Equipment and Vehicle Trips Per Phase

Construction Phase	Equipment			Daily Worker Vehicle Trips[1]	Daily Vendor Trips[1]	Total Haul Truck Trips[2]	On Site Truck Trips[1]
	Equipment Type	Quantity	Usage Hours				
Site Preparation and Grading	Tractors/Loaders/Backhoes	3	8	80	25	30	5
	Graders	4	8				
	Rollers	4	8				
	Rubber Tired Dozers	3	8				

Construction Phase	Equipment			Daily Worker Vehicle Trips[1]	Daily Vendor Trips[1]	Total Haul Truck Trips[2]	On Site Truck Trips[1]
	Equipment Type	Quantity	Usage Hours				
	Rubber Tired Loaders	4	8				
	Skid Steer Loaders	6	8				
	Trenchers	4	8				
	Dumpers/Tenders	4	8				
Solar Arrays and Inverters Installation	Bore/Drill Rigs	10	8	400	25	12	5
	Forklifts	10	8				
	Skid Steer Loaders	2	8				
	Trenchers	2	8				
	Welders	6	8				
Electrical Work	Aerial Lifts	8	8	120	4	2	--
	Bore/Drill Rigs	2	8				
	Cranes	4	8				
	Skid Steer Loaders	2	8				
	Tractors/Loaders/Backhoes	4	8				
	Trenchers	2	8				
Substation Installation	Air Compressors	4	8	120	20	20	5
	Cranes	2	8				
	Excavators	4	8				
	Generator Sets	4	8				
	Forklifts	2	8				
	Plate Compactors	2	8				
	Dumpers/Tenders	2	8				
	Rollers	2	8				
	Tractors/Loaders/Backhoes	6	8				
Transmission Interconnection	Air Compressors	2	8	40	4	20	--
	Cranes	2	8				
	Forklifts	4	8				
	Generator Sets	2	8				
	Pumps	2	8				
	Welders	2	8				
	Tractors/Loaders/Backhoes	2	8				

[1]Number reflects daily one-way trips.
[2]Number reflects round trips.

2.4.2.2 Operation

Once constructed, the Project would operate 7 days per week, 365 days per year. The Project will be outfitted with a suite of sensors, monitoring equipment, and communications gear as part of the Project's SCADA system. This allows the facility to be monitored in real time remotely by Origis Energy's remote operations center in Austin, Texas, which is a new, state-of-the-art remote monitoring center designed to provide round-the-clock operations support in accordance with National Electric Reliability

Corporation standards. The remote operators will be continually aware of plant output, voltage, and local weather conditions and will receive real-time alerts in the event of abnormal operating conditions, allowing the operators to dispatch technicians as needed.

On-site O&M activities will consist of responding to abnormal operating conditions, routine maintenance and repairs, periodic panel washing, and grounds maintenance (i.e., vegetation control). These activities are anticipated to require site visits on the order of once to twice per month, consisting of a small ground crew. Maintenance trucks would be utilized to perform routine maintenance, including but not limited to equipment testing, monitoring, repair, routine procedures to ensure service continuity, and standard preventive maintenance.

While the solar panel part of the Facility operates during daylight hours, it is anticipated that the Facility will operate 24 hours per day, 7 days per week, as certain electrical connections within the Facility may remain charged and the BESS portion of the facility, when charged, can discharge at any time during the day or night.

Operational emissions were estimated using CalEEMod to include area, energy, and mobile source emissions. Operational assumptions, including equipment, solid waste, and water usage were based on information provided by the Project proponent. Based on conservative estimates, the Project is anticipated to have up to 50 round trips per year, accounting for regular operation and maintenance activities of two full-time-equivalent staff visiting the site up to 2 times annually.

No water would be used during the operation of the Project, except for annual panel washing, which is estimated to be less than 1 acre-foot of water usage per year.

Emergency generators may be installed for use in the event that the regional transmission system fails. If deemed necessary, the generator would likely be installed at the Project substation. This emergency generator would provide emergency power until the regional transmission system restores operations. The generator would be powered by propane or diesel and is estimated to be 49 kilowatts or less in size. This analysis includes two emergency generators fueled by diesel with an annual operation of 50 hours each.

2.4.2.3 Ambient Air Quality Analysis

Per the Guidance for Assessing and Mitigating Air Quality Impacts, an AAQA should be performed if the emissions of a pollutant from equipment used for on-site construction or on-site operation exceeds 100 lbs./day (SJVAPCD, 2015a). The Project is expected to have emissions less than 100 lbs/day for all pollutants during on-site construction. Therefore, an AAQA for Project construction emissions is not required. Because operational activities would be minimal and emissions are also well below the modeling threshold, an AAQA for Project operations emissions is likewise not required.

2.4.2.4 Health Risk Assessment

SJVAPCD guidance (SJVAPCD, 2015a) cites the CARB Handbook: Air Quality and Land Use Handbook: A Community Health Perspective (CARB, 2005) and the OEHHA Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2015) for determining when and how to conduct risk assessments. Both

documents include recommendations for buffer distances for siting sensitive receptors near various types of common sources. The project type and buffer distance are as follows:

- Freeways and high traffic roads – Sensitive receptors should be sited at least 500 feet from freeways or urban roads with 100,000 vehicles per day or rural roads with 50,000 vehicles per day.
- Distribution centers – Sensitive receptors should be sited at least 1,000 feet from distribution centers accommodating more than 100 trucks per day or more than 40 trucks per day with operating transport refrigeration units.
- Railyards – Sensitive receptors should be sited at least 1,000 feet from a major service and maintenance rail yard. Sensitive receptors sited within one mile of a major service and maintenance railyard should consider mitigation and/or restrictions.
- Ports – Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones.
- Refineries – Avoid siting new sensitive land uses immediately downwind of petroleum refineries.
- Chrome Platers – Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
- Dry Cleaners using Perchloroethylene – Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
- A Gasoline Dispensing Facility – Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

The Project is an industrial project that does not fit into any of the categories above, and therefore no buffer distances are recommended.

SJVAPCD also provides significance thresholds for TACs:

Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in:

- A cancer risk greater than or equal to 20 in a million, and/or
- A Hazard Index (non-cancerous) greater than or equal to 1.

A HRA was not conducted for the Project. A qualitative discussion of Diesel Particulate Matter (DPM) risk is provided in Section 2.5.4.

2.5 Impact Analysis

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

Less than significant impact. The Project would not conflict with existing land uses or result in population growth. The Project would comply with applicable SJVAPCD rules and regulations, such as Regulation VIII (Fugitive PM_{10} Prohibitions) and IX (Mobile and Indirect Sources) which are discussed in

detail in Section 2.2.3.1. In addition, the Project would not result in a long-term increase in the number of trips or increase the overall vehicle miles traveled in the area. Worker vehicle trips, vendor trucks, and haul trucks would be generated during the proposed construction activities but would cease after construction is completed. NO_X emissions during construction would not exceed the 100lbs/day SJVAPCD significance threshold. Additionally, as discussed in Section 2.2.3.1, compliance with SJVAPCD Rule 9510 would further reduce the Project's less than significant NO_X emissions. During the longer-term operational phase, the Project would have routine inspection and maintenance activities that would result in a net increase in emissions. However, as discussed in Section 2.5.2, the increase in emissions would not exceed any significance threshold or violate any SJVAPCD rule or regulation.

The purposes of Rule 9510 are to reduce emissions of NO_X and PM_{10} associated with construction and operation of new development projects in the San Joaquin Valley. Specifically, Rule 9510 was promulgated to reduce the growth in NO_X and PM_{10} emissions associated with new development projects, including transportation and transit development projects in the San Joaquin Valley.

The rule requires at least 20 percent reduction of NO_X construction emissions and 45 percent of construction diesel exhaust particulate matter (expressed as PM_{10}). The rule assures that the Project will not interfere with SJVAPCD attainment plans. Table 7 provides NO_X and PM_{10} construction exhaust emissions with and without Rule 9510 NO_X and PM_{10} emissions reductions. Tier 4 engines for equipment greater than 50 horsepower were incorporated in CalEEMod to comply with the rule's NOx and Diesel exhaust reductions.

Table 7. Rule 9510 NO_X and PM_{10} Reductions

Exhaust Emissions	NO_X (tons per year)	Diesel Exhaust PM_{10} (tons per year)
No Reductions	4.75	0.16
Rule 9510 Reductions	2.68	0.06
Percent Reduction	43.58%	62.95%

2.5.2 Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction Emissions

Less Than Significant Impact. As stated previously, the SJVAPCD has established annual significance thresholds to address pollution sources associated with general construction activities, such as the operation of on-site construction equipment, fugitive dust from site grading activities, and travel by construction workers. In addition to the SJVAPCD annual significance thresholds, the SJVAPCD also recommends the use of daily emissions thresholds for the evaluation of project impacts on localized ambient air quality. Based on these recommended thresholds, the proposed Project would result in a significant contribution to localized ambient air quality if on-site emissions would exceed a daily average of 100 lbs./day for any of the pollutants evaluated.

The Project would comply with SJVAPCD Rule 8021 to control dust emissions generated during grading activities. Standard construction practices that would be employed to reduce fugitive dust emissions include:

- Develop a dust control plan to outline how the Project will comply with Rule 8021 and minimize fugitive dust during construction,
- Land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled utilizing application of water or by presoaking,
- Minimize and cleanup trackout onto paved roads,
- Cover haul trucks,
- Rapid cleanup of Project-related trackout or spills on paved roads,
- Minimize grading and soil movement when winds exceed 30 miles per hour, and
- Implement a speed limit of 15 miles per hour during all construction phases for vehicles travelling on un-paved roads.

Mitigation measures for dust control applied in CalEEMod for this analysis include:

- Watering of exposed surfaces up to 3 times per day,
- Watering of unpaved construction roads up to 2 times per day, and
- Implementation of vehicle speed on unpaved roads (assumes a CalEEMod default speed of 25 miles per hour)

In addition to dust control measures, the use of Tier 4 engines was employed in CalEEMod for NOx reduction. For the purpose of this assessment, it was assumed that all off-road diesel equipment greater than 50 horsepower would meet EPA Tier 4 off-road emission standards or equivalent.

Table 8 presents the estimated maximum annual emissions generated during construction of the Project. Table 9 presents the estimated on-site maximum daily emissions generated during construction of the Project. Emissions with and without Rule 9510 and dust control reductions are presented. Detailed emission calculations are provided in Appendix A and Appendix B.

The SJVAPCD has determined that projects with emissions less than the thresholds of significance for criteria pollutants would not conflict or obstruct implementation of the SJVAPCD's air quality plan (SJVAPCD 2015a).

Table 8. Estimated Maximum Annual Construction Criteria Air Pollutant Emissions

Total Project Emissions	Emissions (tons)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
No Reductions	1.47	4.75	9.14	0.80	3.12	0.72
Rule 9510 and Dust Control Reductions	1.47	2.68	9.11	0.80	1.47	0.37
SJVAPCD Threshold (tons/year)	*10*	*10*	*100*	*27*	*15*	*10*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Table 9. Estimated On-Site Maximum Daily Construction Criteria Air Pollutant Emissions

Total Project On-Site Emissions	Emissions (lbs/day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
No Reductions	18.05	66.88	93.71	8.91	50.59	15.61
Rule 9510 and Dust Control Reductions	18.05	24.99	93.71	8.91	12.93	3.96
SJVAPCD On-site Emissions Threshold	*100*	*100*	*100*	*100*	*100*	*100*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

As shown in Table 8, annual construction emissions would not exceed the SJVAPCD annual significance thresholds for any pollutants, both with and without reductions. As shown in Table 9, maximum daily on-site construction emissions would not exceed SJVAPCD's localized significance threshold of 100 lbs/day for ROG, NO_x, CO, SOx, PM_{10}, or $PM_{2.5}$ both with and without reductions. SJVAPCD recommends that an AAQA be conducted when on-site emissions from any criteria pollutant would equal or exceed applicable significance thresholds or when on-site emissions would equal or exceed 100 lbs/day for any pollutant. Therefore, an AAQA was not performed for the Project.

Operational Emissions

Less Than Significant Impact. Project operational emissions were estimated using CalEEMod to include mobile, area, stationary and off-road source emissions. This includes potential emissions from worker commutes, and heavy trucks used during maintenance. Emissions from energy use were based on estimated requirements for lighting & HVAC.

Table 10 presents the estimated maximum annual operational emissions in tons per year with a comparison to SJVAPCD thresholds. Detailed emissions calculations are provided in Appendix A.

Table 10. Estimated Maximum Annual Operational Criteria Air Pollutant Emissions

Emission Source	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	Emissions (tons per year)					
Area, Mobile, Stationary and Offroad	0.08	0.35	0.41	0.002	0.02	0.01
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*10*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Table 11. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Emission Source	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	Emissions (lbs/day)					
Area, Mobile, Stationary and Offroad	4.65	27.48	30.07	0.12	1.01	0.91
SJVAPCD Threshold	*100*	*100*	*100*	*100*	*100*	*100*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

As shown in Tables 10 and 11, operational emissions would not exceed the SJVAPCD thresholds for ROG, NO_X, CO, SOx, PM_{10} and $PM_{2.5}$. Because operational activities would be minimal, including only routine inspection and maintenance, ambient air quality modeling was not required. Additionally, traffic associated with operations would be negligible and would not result in CO hotspots at intersections. Therefore, the operational impacts would be less than significant.

2.5.3 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O_3 precursors)?

Less Than Significant Impact. As discussed previously, the Project results in an increase in short-term emissions related to construction and an increase in long-term operational emissions for those pollutants and precursors (ROG and NO_X) for which the SJVAPCD is in nonattainment (O_3, PM_{10} and $PM_{2.5}$). However, the cumulative emissions associated with the Project would not be considerable as the emissions would be less than SJVAPCD thresholds. Under this condition, the Project would not make a cumulatively considerable contribution during construction or operations. Therefore, impacts would be less than significant. Additionally, the Project would not conflict with the SJVAPCD O_3, PM_{10} or $PM_{2.5}$ attainment plans, which address cumulative emissions in the SJVAB and account for emissions associated with construction activity. Therefore, impacts would be less than significant.

2.5.4 Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The Project consists of construction of a BESS facility that may have the potential to affect nearby sensitive receptors. The nearest rural residences on land not owned by the current property owner are located approximately 60 feet west of the boundary of Project site APN 07808055. As described previously, construction and operation of the Project would not result in emissions of criteria pollutants in excess of established thresholds.

In addition to the significance thresholds for criteria pollutants, SJVPACD has established significance thresholds for TAC emissions. The use of combustion equipment in Project construction activities could result in elevated concentrations of DPM, which could lead to an increase in cancer risk or chronic health impacts.

The greatest potential for exposure to air pollutants would occur during construction. The primary TAC from the Project is DPM from construction equipment. PM_{10} and $PM_{2.5}$ are surrogates for DPM. Tables 8 and 9 provide a summary of total PM_{10} and $PM_{2.5}$ emissions during construction (including fugitive dust) on an annual and daily basis, respectively. Tables 10 and 11 provide a summary of total PM_{10} and $PM_{2.5}$ emissions during operation (including fugitive dust) on an annual and daily basis, respectively. Both construction and operational emissions of PM_{10} and $PM_{2.5}$ are a small fraction of the significance thresholds.

Because of the relatively small levels of DPM emissions during Project construction and operation, DPM emissions from Project construction would disperse to negligible levels, and therefore, the health

impacts associated with exposure to DPM from Project construction and operation are not expected to be significant.

As previously noted, SJVAPCD also provides significance thresholds for TACs-

Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in:

- A cancer risk greater than or equal to 20 in a million and/or
- A Hazard Index (non-cancerous) greater than or equal to 1.

Exposure to emissions would vary throughout construction and would depend on the staging of the work being conducted, location of work relative to receptors, and weather conditions.

A HRA was not conducted for this Project due to the low level of emissions. However, the SJVAPCD's Prioritization Calculator was used to conduct a screening analysis. For risk assessment purposes, PM_{10} in diesel exhaust is considered DPM, originating mainly from off-road equipment during construction. As per CAPCOA, a normalization factor is incorporated in the calculation of the prioritization results to provide a conservative risk evaluation. The updated normalization factors based on the 2015 OEHHA guidance is based on the 70-year cancer risk scenario (CAPCOA 2016). As stated previously, construction activities will be limited to a duration of 11 months. Therefore, the temporary nature of the generated construction emissions was accounted for in the prioritization calculation, resulting in a maximum score of 3.81.

Additionally, since the Project parcels are spread out, it can be stated that the estimated score for the receptor adjacent to APN 07808055 on W. Jayne Ave will likely be lower based on emissions contained within the parcel. Therefore, impact would be less than significant.

Because operational activities would be limited to routine inspection and maintenance, an operational HRA was not required, and the impact would therefore be less than significant.

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

Less Than Significant Impact. During Project-related construction activities, various diesel-powered vehicles and equipment could create minor odors. These odors are not likely to be noticeable beyond the immediate vicinity and would be temporary and short-lived. Therefore, construction odor impacts would be less than significant. Long-term odors are associated typically with industrial projects involving use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes. Odors also are associated with such uses as sewage treatment facilities and landfills. The Project involves no elements related to these types of uses. Therefore, no long-term odor impacts would occur with Project implementation.

According to the California Department of Public Health, incidences of Valley Fever have been consistently high in the Southern San Joaquin Valley and Central Coast regions. The Northern San Joaquin Valley has shown a large increase in cases between 2000 and 2018; the highest median annual incidences were in the Southern San Joaquin Valley (90.6 per 100,000), Central Coast (9.7 per 100,000), and Northern San Joaquin Valley (5.6 per 100,000) (Sondermeyer et al. 2020).

There are currently no recommended thresholds of significance for Valley Fever. Construction activities, including site preparation and grading, would have the potential to make C. immitus fungus spores airborne. However, the Project would comply with SJVAPCD Rule 8021 to control dust emissions generated during grading activities. The Project would develop a dust control plan and employ all best available fugitive dust control measures that would reduce the risk of contracting Valley Fever. The Project would also comply with SJVPACD Regulation VIII, which requires fugitive dust sources to implement best available control measures for all sources, as described earlier.

The California Department of Public Health recommends that employers in areas with endemic C. immitus should implement infection prevention measures and protect workers who are at risk for exposure to C. immitus. Infection risk can be decreased by using dust-control measures and appropriate personal protective equipment at work. The Project would implement dust control strategies to limit fugitive dust leaving the site and will also implement Valley Fever awareness and training. Based on the dust control plan, the Project would have a less-than-significant impact with respect to Valley Fever exposure.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Environmental Setting

3.1.1 The Greenhouse Effect

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. A GHG is any gas in the atmosphere that absorbs infrared radiation. As solar radiation enters the earth's atmosphere, a portion of the radiation is absorbed by the earth's surface, and a portion is reflected back through the atmosphere into space. The absorbed radiation is eventually emitted from the earth into the atmosphere, not as solar radiation, but as infrared radiation. Most solar radiation passes through GHGs; infrared radiation is selectively absorbed or "trapped" by GHGs as heat and then reradiated back toward the earth's surface, warming the lower atmosphere and the earth's surface. This phenomenon, known as the "greenhouse effect," is beneficial for maintaining a habitable climate on the earth. As the atmospheric concentrations of GHGs rise, however, the average temperature of the lower atmosphere gradually increases, thereby increasing the potential for indirect effects such as a decrease in precipitation as snow, a rise in sea level, and changes to plant and animal species and habitat.

Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed globally. Although the exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, scientific evidence reveals that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46 percent of human-caused CO_2 emissions remains stored in the atmosphere. The quantity of GHGs that it takes to ultimately result in climate change is not known precisely, although scientific evidence strongly indicates no single project would

be expected to contribute measurably to a noticeable incremental change in the global average temperature.

3.1.2 Greenhouse Gases and Global Warming Potential

GHGs are emitted by natural processes and human activities. Natural GHG sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Human activities known to emit GHGs include industrial manufacturing, utilities, transportation, residential, and agricultural activities. The GHGs that enter the atmosphere because of human activities are CO_2, CH_4, N_2O, fluorinated carbons (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

CO_2 is an odorless, colorless gas with both natural and anthropogenic sources. Examples of natural sources are respiration of bacteria, plants, and animals, evaporation from oceans, and decomposition of organic matter. Human activities that emit CO_2 include burning coal, oil, natural gas, and wood.

CH_4 is a flammable gas that is the main component of natural gas. When burned in the presence of oxygen, CO_2 and water are released. There are no direct health effects from exposure to CH_4. Sources of CH_4 include decay of organic material, natural gas fields, cattle, and landfills.

N_2O is a colorless gas that can cause euphoria, dizziness, and slight hallucinations when exposed to higher concentrations. Sources include agricultural sources (e.g., microbial processes in soil and water, fertilizer) and industrial processes (e.g., fossil fuel-fired power plants, vehicle emissions, nylon production).

Fluorinated Gases are synthetic and emitted from a variety of industrial processes. HFCs are man-made chemicals used as a substitute for CFCs (chlorofluorocarbons) for automobile air conditioners and refrigerants.

PFCs are very stable in the lower atmosphere and have long lifetimes (between 10,000 and 50,000 years). The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

SF_6 is an inorganic, colorless, odorless, nontoxic, nonflammable gas used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.

Global Warming Potential

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to that of one kilogram of a reference gas. The reference gas used is CO_2. Therefore, GWP-weighted emissions are measured in metric tons (MT) of CO_2 equivalent (CO_2e). It was assumed that the GWP for CH_4 is 25 (which means that emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), the GWP for N_2O is 298, and the GWP for SF_6 is 22,800 based on the Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC, 2007). These GWPs are also codified by the EPA in 40 CFR 98.

3.2 Air Quality Regulatory Setting

3.2.1 Federal Regulations

Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, that CO_2 is an air pollutant as defined under the CAA, and that the EPA has the authority to regulate emissions of GHGs. Responding to the mounting issue of climate change, the EPA has taken actions to regulate, monitor, and potentially reduce GHG emissions.

Mandatory Greenhouse Gas Reporting Rule (40 CFR 98)

On September 22, 2009, the EPA issued a final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. In general, this national reporting requirement provides the EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publicly available data allows the reporters to track their own emissions, compare them to similar facilities, and help identify cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs along with vehicle and engine manufacturers report at the corporate level. An estimated 85 percent of the total United States GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act

On December 7, 2009, the EPA adopted its Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the CAA (Endangerment Finding). The Endangerment Finding is based on Section 202(a) of the CAA, which states that the Administrator (of EPA) should regulate and develop standards for "emission[s] of air pollution from any class or classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." The rule addresses Section 202(a) in two distinct findings. The first addresses whether the concentrations of the six key GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the health and welfare of current and future generations. The second addresses whether the combined emissions of GHGs from new motor vehicles and motor vehicle engines contribute to atmospheric concentrations of GHGs and therefore the threat of climate change.

The Administrator found that atmospheric concentrations of GHGs endanger the public health and welfare within the meaning of Section 202(a) of the CAA. The evidence supporting this finding consists of human activity resulting in "high atmospheric levels" of GHG emissions, which are most likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wildfires, droughts, sea level rise, and higher intensity storms) are a threat to the public health and welfare. Therefore, GHGs were found to endanger the public health and welfare of current and future generations.

The Administrator also found that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHGs fit within the CAA definition of air

pollutants. The findings do not in and of themselves impose any emission reduction requirements but rather allow the EPA to define the GHG standards proposed earlier in 2009 for new light-duty vehicles as part of the joint rulemaking with the U.S. Department of Transportation.

Various subsequent federal rulemakings limit GHG emissions from fossil fuel-fired power plants through EPA's major stationary source permitting program and through EPA's New Source Performance Standards. These rulemakings have been subject to court challenges and political manipulation, such that applicants for air permits are required to evaluate the current status of the regulatory requirements at the time of application filing. These GHG rules do not apply to the activities associated with the Project.

Presidential Executive Orders 13990 and 14008

Executive Order 13990 (Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis), issued on January 20, 2021, directs all Federal executive departments and agencies to immediately review and take action to address the promulgation of federal regulations and other actions that conflict with important national objectives and to immediately commence work to confront the climate crisis (Federal Register 2021a).

Executive Order 14008 (Tackling the Climate Crisis at Home and Abroad), issued on January 27, 2021, declares the Administration's policy to build resilience against the impacts of existing climate change and projected changes according to current trajectories in both the United States and with other countries abroad (Federal Register 2021b).

3.2.2 State Regulations

California Air Resources Board

CARB is responsible for the coordination and oversight of State and local air pollution control programs in California. Various Statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. California is a significant emitter of CO_2e and produced 424 million gross metric tons of CO_2e in 2017. In the United States, transportation, industrial operations, and utility sectors produce over 75 percent of all GHGs emitted.

The State legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. In 2002, California passed AB 1493, which requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions beginning with the 2009 model year. In June 2005, Executive Order S-3-05 was signed to reduce California's GHG emissions to: (1) 2000 levels by 2010; (2) 1990 levels by the 2020; and (3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006.

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

The California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 to 38599) establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32

requires the state to create an opportunity for interested parties to comment on the scoping plan by conducting public workshops which are required in regions with low-income communities and minority populations. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. In 2016, statewide GHG emissions fell below the levels recorded in 1990, 4 years ahead of schedule.

California Air Resources Board Scoping Plan

To achieve the goals of AB 32, CARB adopted a Scoping Plan which includes market mechanisms and rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases.". The Plan evaluates opportunities for sector-specific reductions, integrates early actions and additional GHG reduction measures by both CARB and the State's Climate Action Team, identifies additional measures to be pursued as regulations, and outlines an adopted role of a cap-and-trade program.

In 2016, the Legislature passed Senate Bill (SB) 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the Legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017, CARB adopted a second update to the Scoping Plan. The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030 target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping Plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and support the Clean Power Plan and other federal actions.

CARB's 2022 Scoping Plan for Achieving Carbon Neutrality (CARB, 2022b) was adopted on December 15, 2022. The Plan sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045 in accordance with AB 1279. To achieve the targets of AB 1279, the 2022 Scoping Plan relies on existing and emerging fossil fuel alternatives and clean technologies, as well as carbon capture and storage. Specifically, the 2022 Scoping Plan focuses on zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; displacing fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen. The 2022 Scoping Plan sets one of the most aggressive approaches to reach carbon neutrality in the world.

The Scoping Plan addresses AB 1279, SB 905, SB 1065, SB 1075, and other legislation and executive orders addressing GHG reductions in various manufacturing sectors and managing natural lands.

In 2022, California passed AB 1279 (California Crisis Act), which introduced a statewide policy to achieve net zero GHG emissions by 2045 and maintain net negative GHG emissions thereafter. Furthermore, AB 1279 ensures that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. This bill would require the state board to work with relevant state agencies to ensure that updates to the scoping plan identify and recommend measures to achieve these policy goals and to identify and implement a variety of policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage technologies in California, as specified.

SB 905 requires the state board, along with appropriate state and local agencies to "adopt regulations for a unified permit application for the construction and operation of carbon dioxide capture, removal, or sequestration projects" by January 1. 2025. The state board is required to develop a public database to track such projects.

SB 1075 requires the state board to specify information relative to the deployment, development, and use of hydrogen as part of the evaluation posted to the state board's internet website by June 1, 2024. Additionally, the Energy Commission is expected "to study and model potential growth for hydrogen and its role in decarbonizing" as part of the 2023 and 2025 editions of the integrated energy policy report.

SB 1206 mandates a stepped sales prohibition on newly produced high-GWP HFCs to transition California's economy toward recycled and reclaimed HFCs for servicing existing HFC-based equipment. Additionally, SB 1206 also requires CARB to develop regulations to increase the adoption of very low- (i.e., GWP < 10) and no-GWP technologies in sectors that currently rely on higher-GWP HFCs.

In 2002, SB 1078 established a Renewable Portfolio Standard (RPS), which required an annual increase in renewable generation by utilities with a goal of 20 percent renewable generation by 2010. SB X1-2 expanded the RPS by establishing a renewable energy target of 20 percent of the total electricity sold to retail customers in California per year by 2013, and 33 percent by 2020 and subsequent years. SB 350 further expanded the RPS by establishing a goal of 50 percent of the total electricity sold to retail customers in California per year by 2030. SB 100 mandates that the CPUC, CEC, and CARB plan for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. The statute requires these agencies to issue a joint policy report on SB 100 every four years. The first of these reports was issued in 2021. This Scoping Plan reflects the SB 100 Core Scenario resource mix with a few minor updates. This bill also updates the state's Renewables Portfolio Standard (RPS) to include the following interim targets:

- 44% of retail sales procured from eligible renewable sources by December 31, 2024
- 52% of retail sales procured from eligible renewable sources by December 31, 2027
- 60% of retail sales procured from eligible renewable sources by December 31, 2030

SB 97 acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. CEQA requires that lead agencies consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions can affect the environment adversely because they contribute, cumulatively, to global climate change. Thus, GHG emissions require consideration in CEQA documents.

3.2.3 Local Regulations

San Joaquin Valley Air Pollution Control District

On December 17, 2009, the SJVAPCD's Governing Board adopted a Climate Change Action Plan (CCAP). The CCAP directed the District Air Pollution Control Officer to develop guidance to assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific greenhouse gas (GHG) emissions on global climate change (SJVAPCD, 2009a).

The SJVAPCD Governing Board has also adopted the Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD, 2009b). This policy proposes an approach intended to streamline the process of determining if project-specific GHG emissions would have a significant effect. The methodology relies on the use of performance-based standards, or also known as Best Performance Standards (BPS), to determine significance of project-specific GHG emission impacts. Establishing BPS would help project proponents, lead agencies, and the public by proactively identifying effective, feasible GHG emission reduction measures.

The SJVAPCD found that the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climate change could be deemed cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

Projects implementing any combination of BPS, and/or demonstrating a total 29 percent reduction in GHG emissions from business-as-usual, would be determined to have a less than significant individual and cumulative impact on global climate change (SJVAPCD 2015a).

Fresno Council of Governments

SB 375 requires metropolitan planning organizations to prepare a Sustainable Community Strategy (SCS) in their Regional Transportation Plan (RTP). The Fresno Council of Governments (FCOG) adopted the 2022 RTP/SCS (FCOG, 2022) in July 2022. The RTP/SCS is a long-range comprehensive plan for the region's multimodal transportation system. Fresno COG updates its RTP every four years.

The GHG targets set for the Fresno region call for a 6 percent per capita reduction by 2020, and a 16 percent per capita reduction by 2035. SB 375 requires that Fresno COG demonstrate in its SCS that GHG emission reduction targets will be met for 2020 and 2035. If not, then an Alternative Planning Strategy (APS) shall be prepared to demonstrate how the targets can be met through the alternative strategies in the APS. Fresno COG will be able to meet the targets set by the ARB through its 2022 RTP/SCS. The reduction identified for 2046 is a projection and not adopted by CARB (FCOG, 2022).

Fresno County General Plan

There are no specific policies related to greenhouse gas emissions or climate change in the Fresno County General Plan Policy Document.

3.3 Significance Criteria and Methodology

3.3.1 Thresholds of Significance

The state of California has developed guidelines to address the significance of greenhouse gas impacts based on Appendix G of the CEQA Guidelines, which indicates that a project has significant air quality impact if the project:

- Generates greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and
- Conflicts with an applicable plan, policy, or regulations adopted for the purpose of reducing the emissions of greenhouse gases.

In the Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA and the policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009c), BPS are used to assess significance of project specific GHG emissions on global climate change during the environmental review process. However, SJVAPCD's adopted BPS are specifically directed at reducing GHG emissions from stationary sources; therefore, the adopted BPS would not generally be applicable to the Project as the Project would not be a stationary source of emissions. The SJVAPCD guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change. SJVAPCD supports the use of the interim thresholds as established by the CAPCOA when adopted thresholds are not applicable. As such, for the purposes of establishing a quantitative threshold for GHG emissions, the interim threshold for operational emissions of industrial projects established by CAPCOA is used herein. This threshold is consistent with California's climate-stabilization target (identified in AB 32). GHG emissions include construction emissions annualized over the 30-year life of the Project, as well as operational emissions.

Following CAPCOA's analysis of development applications in various cities, it was determined that the threshold of 900 MT CO_2e per year would achieve the objective of 90 percent capture and ensure that new development projects would keep the state of California on track to meet the goals of AB 32. The 900 MT CO_2e threshold is applied to evaluate whether the Project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

3.3.2 Approach and Methodology

A GHG analysis is required to be included in CEQA documents for all non-exempt projects. SJVAPCD supports the use of the interim thresholds as established by the CAPCOA when adopted thresholds are not applicable. A new threshold has not been established to meet SB 32 targets beyond 2020. Additionally, based on the SCAQMD Draft Guidance Document – Interim CEQA GHG Significance Threshold, Project construction emissions can be amortized by calculating total construction period emissions and dividing by the 30-year lifetime of the Project (SCAQMD 2008).

For this Project, the primary source of GHG is the combustion of fuel in construction equipment, in motor vehicles used to haul materials, and in motor vehicles used by workers commuting to and from the site.

There are three primary GHG emitted from fuel combustion: CO_2, CH_4 and N_2O. GHG emissions are presented as CO_2e and are computed based on GWP. The CH_4 GWP is 25 times that of CO_2, and the N_2O GWP is 298 times that of CO_2. Mathematically, the CO_2e can be represented by the following equation:

CO_2e Emissions = CO_2 Emissions + 25 × CH_4 Emissions + 298 × N_2O Emissions

The CalEEMod model was used to estimate the GHG emissions during the construction phase of the proposed Project. Based on the construction schedule, types and quantities of construction equipment, and haul trucks, etc., the maximum CO_2e emissions were estimated. The CalEEMod model quantifies the CO_2, CH_4,N_2O as well as common refrigerant emissions. For typical diesel-fueled combustion equipment used in construction activities, the emissions factors adjusted with global warming equivalence are the following:

1. CO_2 emission factors are 22.4 pounds of CO_2e per gallon consumed.
2. CH_4 emission factors are 0.065 pounds of CO_2e per gallon consumed.
3. N_2O emission factors are 0.068 pounds of CO_2e per gallon consumed.

As shown in these emission factors, the CO_2 profile is 99 percent of the total GHG emissions generated in combustion equipment.

3.4 Impact Analysis

3.4.1 Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction

Less Than Significant Impact. Construction of the Project would increase GHG generation, which can contribute to global climate change. This analysis is provided in response to recent heightened interest in the subject of global climate change and, specifically, in the California Legislature's passage and the Governor's signing of AB 32, which is intended to control and reduce the emission of global warming gases in California; and SB 97, which directs the Office of Planning and Research and the California Resources Agency to develop CEQA Guidelines on how local agencies should analyze and, if necessary, mitigate for GHG emissions.

Construction emissions would be associated with vehicle engine exhaust from construction equipment and vehicles, vendor trips, construction worker commuting trips, and the stationary generators to be used during construction. CalEEMod also calculates indirect GHG emissions from electricity construction. Construction-related GHG emissions are considered temporary and short term, and as described above, amortized over a 30-year period and added to the calculated operation phase emissions for comparison to the significance threshold (SCAQMD 2008). As shown in Table 12, amortized short-term construction CO_2e emissions are estimated to be 75 MT CO_2e. As shown in Table 13, when added to the operational GHG emissions, the Project would result in a less than significant cumulative impact in terms of climate change.

Table 12. Estimated Annual Construction Greenhouse Gas Emissions

Total Project Emissions	CO_2	CH_4	N_2O
	Emissions (Metric tons)		
Construction GHG Emissions	2,212	0.06	0.10
Global Warming Equivalence Factor	1	25	298
Equivalent CO_2e Emissions[1]	2,212	1.5	31
Total Construction GHG (CO_2e)	2,245		
Total Construction GHG (CO_2e) Amortized Emissions over 30 Years	75		

[1] Equivalent CO_2e Emissions = Construction GHG Emissions x Global Warming Equivalent Factor

Operations

Less Than Significant Impact. Operation of the Project would generate GHG emissions through motor vehicle trips to and from the Project site, occasional use of heavy-duty trucks, waste generation, electricity, and water use. CalEEMod was used to calculate the annual GHG emissions based on the operational assumptions described in Section 2.4.2.2.

The estimated operational GHG emissions from the Project are shown in Table 13.

Table 13. Estimated Annual Operational Greenhouse Gas Emissions

Annual	CO_2	CH_4	N_2O
	Emissions (Metric tons)		
Operational GHG Emissions	153.6	0.10	0.002
Global Warming Equivalence Factor	1	25	298
Equivalent CO_2e Emissions[1]	153.6	2.60	0.49
Total Operational GHG Emissions	157		
Total Operational GHG Emissions + Amortized Construction GHG Emissions	231		

[1] Equivalent CO_2e Emissions = Construction GHG Emissions x Global Warming Equivalent Factor

As shown in Table 13, estimated annual Project-operational GHG emissions would be approximately 157 MT CO_2e per year as a result of Project operation. Estimated maximum annual operational emissions and amortized construction emissions would be approximately 231 MT CO_2e per year. As shown, the total annual emissions would not exceed the GHG significance threshold of 900 MT CO_2e per year. Because the Project's GHG emissions would not result in a cumulatively considerable contribution, the Project would result in a less than significant cumulative impact in terms of climate change.

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

No Impact. The Project would keep with renewable energy targets under the Scoping Plan and SB 350 by providing a source of renewable energy to achieve the RPS of 50 percent by the end of 2030. While GHG would be generated from construction and occasional operation and maintenance activities, the Project would result in a net reduction in GHG from battery storage that would potentially replace energy generated by fossil fuels. The Project would assist in the attainment of the state's goals by using a renewable source of energy that could displace electricity generated by fossil-fuel-fired power plants, and therefore would comply with the goals and objectives of the state.

CARB's 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2022b) was prepared to address climate legislation passed since the last scoping plan, which was prepared in 2017. The Scoping Plan addresses AB 1279, SB 905, SB 1065, SB 1075, and other legislation and executive orders addressing GHG reductions in various manufacturing sectors and managing natural lands.

The Scoping Plan lays out a roadmap for achieving carbon neutrality in California by 2045 or sooner. This 2022 Plan addresses recent legislation and extends and expands upon earlier CARB plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. The carbon neutrality goal is new in the 2022 Plan and proposes both emissions reductions as well as capture and

storage. Much of the state's success to date in reducing GHGs is due to decarbonization of the electricity sector as a result of the Renewable Portfolio Standards, SB 100 implementation, and the Cap-and-Trade Program (CARB 2022b). Clean energy generation and storage are a part of the 2022 Plan. According to the Scoping Plan, the estimated resources needed to meet future energy demand is approximately 72 GW of utility solar and 37 GW of battery storage by 2045. The Scoping Plan also acknowledges that both solar and battery storage projects over the period 2022-2035 will need to increase from the current proposed projects.

Under the SJVAPCD's CEQA thresholds for GHG, a project would not have a significant GHG impact if it is consistent with an applicable plan to reduce GHG emissions, and a CEQA-compliant analysis was completed for the GHG reduction plan. The GHG emission goals in the FCOG RTP/SCS are based on demographic data trends and projections that include household, employment, and total population statistics. The Project is anticipated to have one to two personnel traveling to the facility on a weekly basis starting in 2025. On intermittent occasions, workers may be required for repairs or replacement of equipment and other specialized maintenance. However, due to the self-operating nature of the facility, such actions would occur infrequently. The additional jobs estimated by the Project would be well within the annual growth projection for the FCOG 2022 RTP/SCS. Therefore, the Project would be consistent with the FCOG 2022 RTP/SCS and would not conflict with an applicable plan and the Project would have a less than significant impact.

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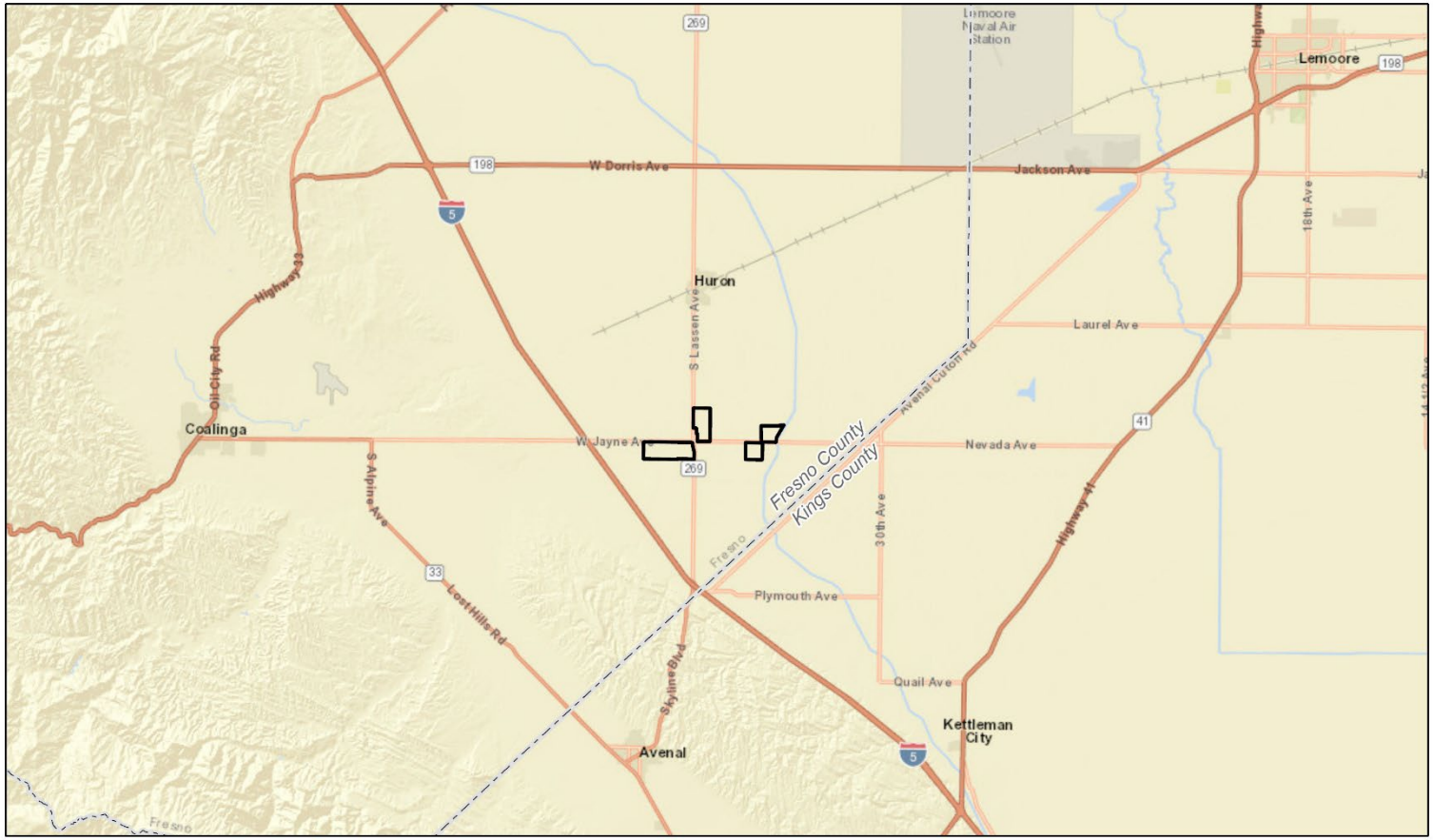
FIGURES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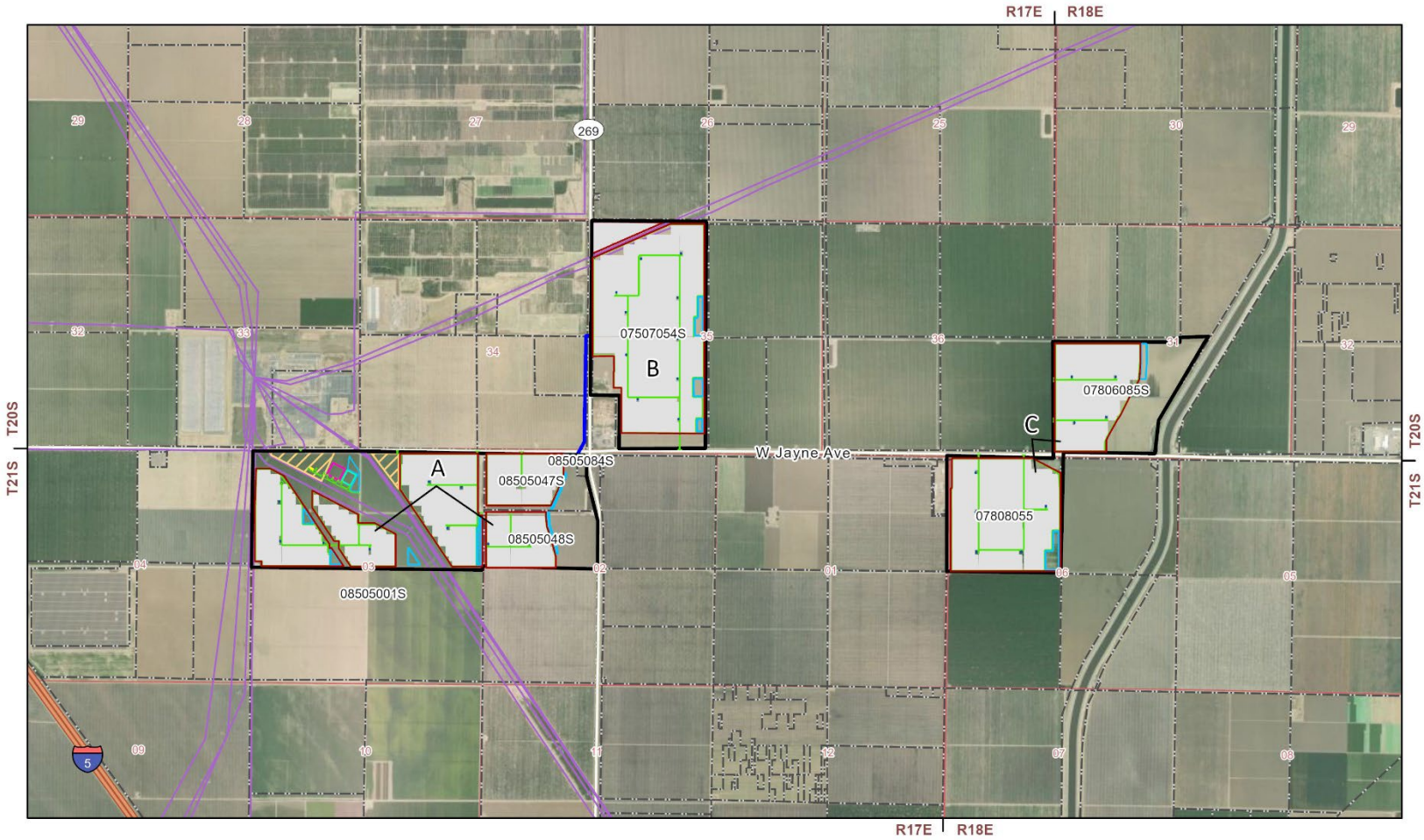
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08505084S
08505047S
A
08505048S
08505001S
07808055
269
5
San Francisco
Project Location
Los Angeles
Project Site
Array
Inverters
O&M Building
Substation
BESS
Site Fence
Site Road
Basin
Collection Line
Laydown
Existing Transmission Line
Township/Range
Section
Parcels
N
0 0.25 0.5
Miles
Source: ESRI (2024)
NOT FOR CONSTRUCTION
TETRA TECH
Figure 2
Project Layout
San Luis West Solar Project
Fresno County, California
\\cess706gisfs1\CES\Projects\BOT\G\PROJECTS\SAN_LUIS_WEST_1115-0009\CUP\SLW_CUP_Alt1_Layout_20241011.aprx

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San Luis West Solar Project Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	San Luis West Solar Project
Construction Start Date	1/2/2025
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	16.8
Location	36.134168, -120.118658
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2530
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.28

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
User Defined Industrial	980	User Defined Unit	980	5,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.73	8.03	72.4	129	0.18	2.33	41.5	42.8	2.15	6.32	7.52	—	30,661	30,661	0.77	1.53	73.8	31,190
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.73	8.02	76.2	102	0.17	3.11	52.6	55.7	2.87	14.2	17.1	—	27,118	27,118	0.71	1.53	1.91	27,573
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.46	2.84	25.0	41.0	0.06	0.86	16.2	17.0	0.79	3.13	3.92	—	10,928	10,928	0.26	0.61	9.64	11,127
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.52	4.56	7.48	0.01	0.16	2.95	3.11	0.14	0.57	0.72	—	1,809	1,809	0.04	0.10	1.60	1,842
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	—	—	14.0	—	—	14.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	Yes	—	No	—	—	No	—	—	—	—	—	—	—

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	9.73	8.03	72.4	129	0.18	2.33	41.5	42.8	2.15	6.32	7.52	—	30,661	30,661	0.77	1.53	73.8	31,190
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	9.73	8.02	76.2	102	0.17	3.11	52.6	55.7	2.87	14.2	17.1	—	27,118	27,118	0.71	1.53	1.91	27,573
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.46	2.84	25.0	41.0	0.06	0.86	16.2	17.0	0.79	3.13	3.92	—	10,928	10,928	0.26	0.61	9.64	11,127
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.63	0.52	4.56	7.48	0.01	0.16	2.95	3.11	0.14	0.57	0.72	—	1,809	1,809	0.04	0.10	1.60	1,842

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.	5.51	4.65	27.5	30.1	0.12	0.98	0.04	1.01	0.90	0.01	0.91	5.91	13,381	13,387	1.13	0.11	0.17	13,449
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.47	4.61	27.5	29.8	0.12	0.97	0.04	1.01	0.90	0.01	0.91	5.91	13,376	13,382	1.13	0.11	< 0.005	13,444
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.51	0.45	1.91	2.25	0.01	0.07	0.02	0.09	0.06	0.01	0.07	5.91	922	928	0.63	0.01	0.05	946
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.09	0.08	0.35	0.41	< 0.005	0.01	< 0.005	0.02	0.01	< 0.005	0.01	0.98	153	154	0.10	< 0.005	0.01	157
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	—	—	14.0	—	—	14.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—

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	0.01	0.01	0.02	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	43.9	43.9	< 0.005	< 0.005	0.17	44.6
Area	0.15	0.14	< 0.005	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.89	0.89	< 0.005	< 0.005	—	0.90
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—	0.62	0.72	1.34	0.06	< 0.005	—	3.40
Waste	—	—	—	—	—	—	—	—	—	—	—	5.28	0.00	5.28	0.53	0.00	—	18.5
Off-Road	5.32	4.47	27.4	29.6	0.12	0.97	—	0.97	0.89	—	0.89	—	13,320	13,320	0.54	0.11	—	13,366
Stationary	0.03	0.03	0.10	0.11	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	15.2	15.2	< 0.005	< 0.005	0.00	15.2
Total	5.51	4.65	27.5	30.1	0.12	0.98	0.04	1.01	0.90	0.01	0.91	5.91	13,381	13,387	1.13	0.11	0.17	13,449
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.02	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	40.1	40.1	< 0.005	< 0.005	< 0.005	40.6
Area	0.11	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—	0.62	0.72	1.34	0.06	< 0.005	—	3.40
Waste	—	—	—	—	—	—	—	—	—	—	—	5.28	0.00	5.28	0.53	0.00	—	18.5

Off-Roa	5.32	4.47	27.4	29.6	0.12	0.97	—	0.97	0.89	—	0.89	—	13,320	13,320	0.54	0.11	—	13,366
Stationary	0.03	0.03	0.10	0.11	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	15.2	15.2	< 0.005	< 0.005	0.00	15.2
Total	5.47	4.61	27.5	29.8	0.12	0.97	0.04	1.01	0.90	0.01	0.91	5.91	13,376	13,382	1.13	0.11	< 0.005	13,444
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	0.01	0.09	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	29.4	29.4	< 0.005	< 0.005	0.05	29.8
Area	0.13	0.12	< 0.005	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.44	0.44	< 0.005	< 0.005	—	0.44
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Water	—	—	—	—	—	—	—	—	—	—	—	0.62	0.72	1.34	0.06	< 0.005	—	3.40
Waste	—	—	—	—	—	—	—	—	—	—	—	5.28	0.00	5.28	0.53	0.00	—	18.5
Off-Road	0.35	0.29	1.80	1.95	0.01	0.06	—	0.06	0.06	—	0.06	—	876	876	0.04	0.01	—	879
Stationary	0.03	0.03	0.10	0.11	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	15.2	15.2	< 0.005	< 0.005	0.00	15.2
Total	0.51	0.45	1.91	2.25	0.01	0.07	0.02	0.09	0.06	0.01	0.07	5.91	922	928	0.63	0.01	0.05	946
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.87	4.87	< 0.005	< 0.005	0.01	4.94
Area	0.02	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Water	—	—	—	—	—	—	—	—	—	—	—	0.10	0.12	0.22	0.01	< 0.005	—	0.56
Waste	—	—	—	—	—	—	—	—	—	—	—	0.87	0.00	0.87	0.09	0.00	—	3.06
Off-Road	0.06	0.05	0.33	0.36	< 0.005	0.01	—	0.01	0.01	—	0.01	—	145	145	0.01	< 0.005	—	146
Stationary	0.01	0.01	0.02	0.02	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	2.51	2.51	< 0.005	< 0.005	0.00	2.52
Total	0.09	0.08	0.35	0.41	< 0.005	0.01	< 0.005	0.02	0.01	< 0.005	0.01	0.98	153	154	0.10	< 0.005	0.01	157

3. Construction Emissions Details

3.1. Site Preparation and 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	8.88	7.46	64.6	75.2	0.12	2.94	—	2.94	2.71	—	2.71	—	12,394	12,394	0.50	0.10	—	12,436
Dust From Material Movement	—	—	—	—	—	—	21.8	21.8	—	10.3	10.3	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.15	0.07	< 0.005	< 0.005	25.8	25.8	< 0.005	2.57	2.57	—	68.8	68.8	< 0.005	0.01	< 0.005	72.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.97	0.82	7.08	8.24	0.01	0.32	—	0.32	0.30	—	0.30	—	1,358	1,358	0.06	0.01	—	1,363
Dust From Material Movement	—	—	—	—	—	—	2.39	2.39	—	1.13	1.13	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	2.69	2.69	< 0.005	0.27	0.27	—	7.53	7.53	< 0.005	< 0.005	0.01	7.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.18	0.15	1.29	1.50	< 0.005	0.06	—	0.06	0.05	—	0.05	—	225	225	0.01	< 0.005	—	226
Dust From Material Movement	—	—	—	—	—	—	0.44	0.44	—	0.21	0.21	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.49	0.49	< 0.005	0.05	0.05	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.31
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.55	0.45	1.04	10.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,713	2,713	0.02	0.10	0.31	2,743
Vendor	0.13	0.04	4.98	0.87	0.03	0.08	1.16	1.24	0.08	0.32	0.40	—	4,305	4,305	0.09	0.67	0.28	4,506
Hauling	0.16	0.07	5.37	1.26	0.03	0.08	1.11	1.19	0.08	0.30	0.38	—	4,198	4,198	0.09	0.65	0.26	4,395
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.10	1.25	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	309	309	< 0.005	0.01	0.56	312
Vendor	0.01	0.01	0.54	0.09	< 0.005	0.01	0.13	0.14	0.01	0.03	0.04	—	472	472	0.01	0.07	0.50	494
Hauling	0.02	0.01	0.58	0.14	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	460	460	0.01	0.07	0.48	482
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.23	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	51.1	51.1	< 0.005	< 0.005	0.09	51.7
Vendor	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.1	78.1	< 0.005	0.01	0.08	81.8
Hauling	< 0.005	< 0.005	0.11	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	76.1	76.1	< 0.005	0.01	0.08	79.8

3.3. Solar Arrays and Inverters 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	4.09	3.42	32.5	50.0	0.07	1.18	—	1.18	1.08	—	1.08	—	7,499	7,499	0.30	0.06	—	7,524
Onsite truck	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	25.8	25.8	< 0.005	2.57	2.57	—	68.6	68.6	< 0.005	0.01	0.15	72.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.09	3.42	32.5	50.0	0.07	1.18	—	1.18	1.08	—	1.08	—	7,499	7,499	0.30	0.06	—	7,524
Onsite truck	0.01	< 0.005	0.15	0.07	< 0.005	< 0.005	25.8	25.8	< 0.005	2.57	2.57	—	68.8	68.8	< 0.005	0.01	< 0.005	72.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	0.56	5.34	8.22	0.01	0.19	—	0.19	0.18	—	0.18	—	1,233	1,233	0.05	0.01	—	1,237
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	4.04	4.04	< 0.005	0.40	0.40	—	11.3	11.3	< 0.005	< 0.005	0.01	11.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.98	1.50	< 0.005	0.04	—	0.04	0.03	—	0.03	—	204	204	0.01	< 0.005	—	205
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.96
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.94	2.46	4.27	77.9	0.00	0.00	14.1	14.1	0.00	3.31	3.31	—	15,356	15,356	0.07	0.48	59.0	15,558
Vendor	0.14	0.05	4.65	0.86	0.03	0.08	1.16	1.24	0.08	0.32	0.40	—	4,303	4,303	0.09	0.67	10.6	4,515
Hauling	0.07	0.03	2.01	0.49	0.01	0.03	0.44	0.48	0.03	0.12	0.15	—	1,678	1,678	0.04	0.26	4.07	1,761
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.74	2.25	5.20	50.5	0.00	0.00	14.1	14.1	0.00	3.31	3.31	—	13,567	13,567	0.10	0.48	1.53	13,713
Vendor	0.13	0.04	4.98	0.87	0.03	0.08	1.16	1.24	0.08	0.32	0.40	—	4,305	4,305	0.09	0.67	0.28	4,506
Hauling	0.07	0.03	2.15	0.50	0.01	0.03	0.44	0.48	0.03	0.12	0.15	—	1,679	1,679	0.04	0.26	0.11	1,758
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.45	0.37	0.78	9.37	0.00	0.00	2.30	2.30	0.00	0.54	0.54	—	2,314	2,314	0.01	0.08	4.19	2,342
Vendor	0.02	0.01	0.80	0.14	< 0.005	0.01	0.19	0.20	0.01	0.05	0.07	—	707	707	0.01	0.11	0.75	741
Hauling	0.01	< 0.005	0.35	0.08	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	276	276	0.01	0.04	0.29	289
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.14	1.71	0.00	0.00	0.42	0.42	0.00	0.10	0.10	—	383	383	< 0.005	0.01	0.69	388
Vendor	< 0.005	< 0.005	0.15	0.03	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	117	117	< 0.005	0.02	0.12	123
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	45.7	45.7	< 0.005	0.01	0.05	47.9

3.5. Electrical Work (2025) - Unmitigated

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

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

Off-Road Equipm	3.53	2.97	31.7	37.0	0.07	1.05	—	1.05	0.96	—	0.96	—	7,973	7,973	0.32	0.06	—	8,001
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	0.39	0.33	3.47	4.05	0.01	0.11	—	0.11	0.11	—	0.11	—	874	874	0.04	0.01	—	877
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	0.07	0.06	0.63	0.74	< 0.005	0.02	—	0.02	0.02	—	0.02	—	145	145	0.01	< 0.005	—	145
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	0.88	0.74	1.28	23.4	0.00	0.00	4.24	4.24	0.00	0.99	0.99	—	4,607	4,607	0.02	0.14	17.7	4,667
Vendor	0.02	0.01	0.74	0.14	< 0.005	0.01	0.19	0.20	0.01	0.05	0.06	—	689	689	0.01	0.11	1.70	722
Hauling	0.01	< 0.005	0.33	0.08	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	280	280	0.01	0.04	0.68	294
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.09	0.07	0.16	1.87	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	463	463	< 0.005	0.02	0.84	468
Vendor	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.5	75.5	< 0.005	0.01	0.08	79.1
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.7	30.7	< 0.005	< 0.005	0.03	32.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.34	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	76.6	76.6	< 0.005	< 0.005	0.14	77.5
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.01	13.1
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.08	5.08	< 0.005	< 0.005	0.01	5.32

3.7. Substation 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	4.17	3.48	29.8	34.9	0.06	1.14	—	1.14	1.05	—	1.05	—	6,197	6,197	0.25	0.05	—	6,219
Onsite truck	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	25.8	25.8	< 0.005	2.57	2.57	—	68.6	68.6	< 0.005	0.01	0.15	72.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.46	0.38	3.27	3.83	0.01	0.13	—	0.13	0.12	—	0.12	—	679	679	0.03	0.01	—	682
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	2.69	2.69	< 0.005	0.27	0.27	—	7.53	7.53	< 0.005	< 0.005	0.01	7.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.08	0.07	0.60	0.70	< 0.005	0.02	—	0.02	0.02	—	0.02	—	112	112	< 0.005	< 0.005	—	113
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.49	0.49	< 0.005	0.05	0.05	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.31
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.88	0.74	1.28	23.4	0.00	0.00	4.24	4.24	0.00	0.99	0.99	—	4,607	4,607	0.02	0.14	17.7	4,667
Vendor	0.11	0.04	3.72	0.69	0.02	0.07	0.93	0.99	0.07	0.25	0.32	—	3,443	3,443	0.07	0.53	8.48	3,612
Hauling	0.11	0.05	3.35	0.82	0.02	0.05	0.74	0.79	0.05	0.20	0.26	—	2,797	2,797	0.06	0.43	6.78	2,935
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.07	0.16	1.87	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	463	463	< 0.005	0.02	0.84	468
Vendor	0.01	< 0.005	0.43	0.08	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	377	377	0.01	0.06	0.40	395
Hauling	0.01	0.01	0.38	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	307	307	0.01	0.05	0.32	321
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.34	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	76.6	76.6	< 0.005	< 0.005	0.14	77.5
Vendor	< 0.005	< 0.005	0.08	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	62.5	62.5	< 0.005	0.01	0.07	65.5
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	50.8	50.8	< 0.005	0.01	0.05	53.2

3.9. Transmission Interconnection (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-Roa Equipment	2.82	2.35	20.3	22.5	0.04	0.81	—	0.81	0.75	—	0.75	—	4,313	4,313	0.17	0.03	—	4,328
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-Roa d Equipm ent	0.15	0.13	1.11	1.23	< 0.005	0.04	—	0.04	0.04	—	0.04	—	236	236	0.01	< 0.005	—	237
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.03	0.02	0.20	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.1	39.1	< 0.005	< 0.005	—	39.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.43	7.79	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,536	1,536	0.01	0.05	5.90	1,556
Vendor	0.02	0.01	0.74	0.14	< 0.005	0.01	0.19	0.20	0.01	0.05	0.06	—	689	689	0.01	0.11	1.70	722
Hauling	0.11	0.05	3.35	0.82	0.02	0.05	0.74	0.79	0.05	0.20	0.26	—	2,797	2,797	0.06	0.43	6.78	2,935
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.31	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	77.1	77.1	< 0.005	< 0.005	0.14	78.1

Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.7	37.7	< 0.005	0.01	0.04	39.5
Hauling	0.01	< 0.005	0.19	0.05	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	153	153	< 0.005	0.02	0.16	161
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.8	12.8	< 0.005	< 0.005	0.02	12.9
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.25	6.25	< 0.005	< 0.005	0.01	6.55
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.4	25.4	< 0.005	< 0.005	0.03	26.6

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

4.2. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005

Total	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.11	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	0.04	< 0.005	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.89	0.89	< 0.005	< 0.005	—	0.90
Total	0.15	0.14	< 0.005	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.89	0.89	< 0.005	< 0.005	—	0.90
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.11	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.11	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07
Total	0.02	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.07	0.07	< 0.005	< 0.005	—	0.07

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.62	0.72	1.34	0.06	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	0.62	0.72	1.34	0.06	< 0.005	—	3.40
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.62	0.72	1.34	0.06	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	0.62	0.72	1.34	0.06	< 0.005	—	3.40
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.10	0.12	0.22	0.01	< 0.005	—	0.56
Total	—	—	—	—	—	—	—	—	—	—	—	0.10	0.12	0.22	0.01	< 0.005	—	0.56

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	5.28	0.00	5.28	0.53	0.00	—	18.5
Total	—	—	—	—	—	—	—	—	—	—	—	5.28	0.00	5.28	0.53	0.00	—	18.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	5.28	0.00	5.28	0.53	0.00	—	18.5
Total	—	—	—	—	—	—	—	—	—	—	—	5.28	0.00	5.28	0.53	0.00	—	18.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.87	0.00	0.87	0.09	0.00	—	3.06
Total	—	—	—	—	—	—	—	—	—	—	—	0.87	0.00	0.87	0.09	0.00	—	3.06

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

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Highway Trucks	5.32	4.47	27.4	29.6	0.12	0.97	—	0.97	0.89	—	0.89	—	13,320	13,320	0.54	0.11	—	13,366
Total	5.32	4.47	27.4	29.6	0.12	0.97	—	0.97	0.89	—	0.89	—	13,320	13,320	0.54	0.11	—	13,366
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Highway Trucks	5.32	4.47	27.4	29.6	0.12	0.97	—	0.97	0.89	—	0.89	—	13,320	13,320	0.54	0.11	—	13,366
Total	5.32	4.47	27.4	29.6	0.12	0.97	—	0.97	0.89	—	0.89	—	13,320	13,320	0.54	0.11	—	13,366
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Highway	0.06	0.05	0.33	0.36	< 0.005	0.01	—	0.01	0.01	—	0.01	—	145	145	0.01	< 0.005	—	146
Total	0.06	0.05	0.33	0.36	< 0.005	0.01	—	0.01	0.01	—	0.01	—	145	145	0.01	< 0.005	—	146

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.03	0.03	0.10	0.11	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	15.2	15.2	< 0.005	< 0.005	0.00	15.2
Total	0.03	0.03	0.10	0.11	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	15.2	15.2	< 0.005	< 0.005	0.00	15.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.03	0.03	0.10	0.11	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	15.2	15.2	< 0.005	< 0.005	0.00	15.2
Total	0.03	0.03	0.10	0.11	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	15.2	15.2	< 0.005	< 0.005	0.00	15.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.01	0.01	0.02	0.02	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	2.51	2.51	< 0.005	< 0.005	0.00	2.52
Total	0.01	0.01	0.02	0.02	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	2.51	2.51	< 0.005	< 0.005	0.00	2.52

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description

Site Preparation and Grading	Site Preparation	1/2/2025	2/26/2025	5.00	40.0	—
Solar Arrays and Inverters Installation	Building Construction	2/27/2025	5/21/2025	5.00	60.0	—
Electrical Work	Building Construction	5/22/2025	7/16/2025	5.00	40.0	—
Substation Installation	Building Construction	6/19/2025	8/13/2025	5.00	40.0	—
Transmission Interconnection	Building Construction	8/14/2025	9/10/2025	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation and Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Site Preparation and Grading	Graders	Diesel	Average	4.00	8.00	148	0.41
Site Preparation and Grading	Rollers	Diesel	Average	4.00	8.00	36.0	0.38
Site Preparation and Grading	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation and Grading	Rubber Tired Loaders	Diesel	Average	4.00	8.00	150	0.36
Site Preparation and Grading	Skid Steer Loaders	Diesel	Average	6.00	8.00	71.0	0.37
Site Preparation and Grading	Trenchers	Diesel	Average	4.00	8.00	40.0	0.50
Site Preparation and Grading	Dumpers/Tenders	Diesel	Average	4.00	8.00	16.0	0.38
Solar Arrays and Inverters Installation	Bore/Drill Rigs	Diesel	Average	10.0	8.00	83.0	0.50
Solar Arrays and Inverters Installation	Forklifts	Diesel	Average	10.0	8.00	82.0	0.20

Solar Arrays and Inverters Installation	Skid Steer Loaders	Diesel	Average	2.00	8.00	71.0	0.37
Solar Arrays and Inverters Installation	Trenchers	Diesel	Average	2.00	8.00	40.0	0.50
Solar Arrays and Inverters Installation	Welders	Diesel	Average	6.00	8.00	46.0	0.45
Electrical Work	Aerial Lifts	Diesel	Average	8.00	8.00	46.0	0.31
Electrical Work	Bore/Drill Rigs	Diesel	Average	2.00	8.00	83.0	0.50
Electrical Work	Cranes	Diesel	Average	4.00	8.00	367	0.29
Electrical Work	Skid Steer Loaders	Diesel	Average	2.00	8.00	71.0	0.37
Electrical Work	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Electrical Work	Trenchers	Diesel	Average	2.00	8.00	40.0	0.50
Substation Installation	Air Compressors	Diesel	Average	4.00	8.00	37.0	0.48
Substation Installation	Cranes	Diesel	Average	2.00	8.00	367	0.29
Substation Installation	Excavators	Diesel	Average	4.00	8.00	36.0	0.38
Substation Installation	Generator Sets	Diesel	Average	4.00	8.00	14.0	0.74
Substation Installation	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Substation Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
Substation Installation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Substation Installation	Tractors/Loaders/Backhoes	Diesel	Average	6.00	8.00	84.0	0.37
Substation Installation	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Transmission Interconnection	Air Compressors	Diesel	Average	2.00	8.00	37.0	0.48
Transmission Interconnection	Cranes	Diesel	Average	2.00	8.00	367	0.29
Transmission Interconnection	Forklifts	Diesel	Average	4.00	8.00	82.0	0.20
Transmission Interconnection	Generator Sets	Diesel	Average	2.00	8.00	14.0	0.74

Transmission Interconnection	Pumps	Diesel	Average	2.00	8.00	11.0	0.74
Transmission Interconnection	Welders	Diesel	Average	2.00	8.00	46.0	0.45
Transmission Interconnection	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation and Grading	—	—	—	—
Site Preparation and Grading	Worker	80.0	50.0	LDA,LDT1,LDT2
Site Preparation and Grading	Vendor	25.0	50.0	HHDT
Site Preparation and Grading	Hauling	60.0	20.0	HHDT
Site Preparation and Grading	Onsite truck	5.00	3.50	HHDT
Solar Arrays and Inverters Installation	—	—	—	—
Solar Arrays and Inverters Installation	Worker	400	50.0	LDA,LDT1,LDT2
Solar Arrays and Inverters Installation	Vendor	25.0	50.0	HHDT
Solar Arrays and Inverters Installation	Hauling	24.0	20.0	HHDT
Solar Arrays and Inverters Installation	Onsite truck	5.00	3.50	HHDT
Electrical Work	—	—	—	—
Electrical Work	Worker	120	50.0	LDA,LDT1,LDT2
Electrical Work	Vendor	4.00	50.0	HHDT
Electrical Work	Hauling	4.00	20.0	HHDT
Electrical Work	Onsite truck	—	—	HHDT

Substation Installation	—	—	—	—
Substation Installation	Worker	120	50.0	LDA,LDT1,LDT2
Substation Installation	Vendor	20.0	50.0	HHDT
Substation Installation	Hauling	40.0	20.0	HHDT
Substation Installation	Onsite truck	5.00	3.50	HHDT
Transmission Interconnection	—	—	—	—
Transmission Interconnection	Worker	40.0	50.0	LDA,LDT1,LDT2
Transmission Interconnection	Vendor	4.00	50.0	HHDT
Transmission Interconnection	Hauling	40.0	20.0	HHDT
Transmission Interconnection	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)

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)
Site Preparation and Grading	—	—	980	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

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

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.19	0.00	0.00	50.0	50.0	0.00	0.00	13,036

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Industrial	8.00	204	0.0330	0.0040	24.0

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Industrial	325,852	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Industrial	9.80	—

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

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
Off-Highway Trucks	Diesel	Average	10.0	8.00	376	0.38

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	2.00	0.14	50.0	66.0	0.73

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
—	—
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.6	annual days of extreme heat
Extreme Precipitation	0.90	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	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 (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
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	3	0	0	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	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	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	3	1	1	3
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	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	70.7
AQ-PM	48.8
AQ-DPM	26.4
Drinking Water	59.9
Lead Risk Housing	49.8
Pesticides	96.2
Toxic Releases	45.3
Traffic	18.3
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	51.0
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	23.9
Solid Waste	75.7
Sensitive Population	—
Asthma	57.8
Cardio-vascular	93.4
Low Birth Weights	7.66

Socioeconomic Factor Indicators	—
Education	99.8
Housing	21.1
Linguistic	97.3
Poverty	99.0
Unemployment	90.6

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	3.490311818
Employed	22.67419479
Median HI	30.43757218
Education	—
Bachelor's or higher	2.912870525
High school enrollment	100
Preschool enrollment	47.26036186
Transportation	—
Auto Access	15.01347363
Active commuting	6.493006544
Social	—
2-parent households	62.69729244
Voting	2.373925318
Neighborhood	—
Alcohol availability	61.81188246
Park access	30.59155653
Retail density	0.487617092

Supermarket access	26.24149878
Tree canopy	5.530604389
Housing	—
Homeownership	44.65546003
Housing habitability	50.54536122
Low-inc homeowner severe housing cost burden	62.17117926
Low-inc renter severe housing cost burden	96.58668035
Uncrowded housing	12.53689208
Health Outcomes	—
Insured adults	4.234569485
Arthritis	0.0
Asthma ER Admissions	30.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	4.9
Cognitively Disabled	46.5
Physically Disabled	33.4
Heart Attack ER Admissions	7.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0

Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	2.7
Elderly	42.6
English Speaking	3.0
Foreign-born	95.4
Outdoor Workers	0.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	71.3
Traffic Density	18.2
Traffic Access	0.0
Other Indices	—
Hardship	91.7
Other Decision Support	—
2016 Voting	17.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	75.0
Healthy Places Index Score for Project Location (b)	9.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
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	Provided by Applicant.
Construction: Construction Phases	Provided by Applicant.
Construction: Off-Road Equipment	Provided by Applicant.
Operations: Off-Road Equipment	Provided by Applicant.
Operations: Solid Waste	Provided by Applicant.
Construction: Dust From Material Movement	Provided by Applicant.
Construction: Trips and VMT	Provided by Applicant.
Operations: Energy Use	Provided by Applicant.
Operations: Water and Waste Water	Provided by Applicant.
Operations: Architectural Coatings	Not Applicable.
Operations: Emergency Generators and Fire Pumps	Provided by Applicant.

San Luis West Solar Project (Mitigated) Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	San Luis West Solar Project (Mitigated)
Construction Start Date	1/2/2025
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	16.8
Location	36.134168, -120.118658
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2530
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.28

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
User Defined Industrial	980	User Defined Unit	980	5,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

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.	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	72.4	2.33	41.5	42.8	2.15	6.32	7.52
Mit.	41.1	1.01	22.2	22.8	0.95	4.40	4.96
% Reduced	43%	57%	46%	47%	56%	30%	34%
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	76.2	3.11	52.6	55.7	2.87	14.2	17.1
Mit.	34.3	0.83	22.2	22.8	0.79	5.96	6.75
% Reduced	55%	73%	58%	59%	73%	58%	60%
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	25.0	0.86	16.2	17.0	0.79	3.13	3.92
Mit.	13.6	0.32	7.68	7.99	0.30	1.73	2.04
% Reduced	45%	63%	53%	53%	62%	45%	48%
Annual (Max)	—	—	—	—	—	—	—
Unmit.	4.56	0.16	2.95	3.11	0.14	0.57	0.72
Mit.	2.49	0.06	1.40	1.46	0.06	0.32	0.37

% Reduced	45%	63%	53%	53%	62%	45%	48%
Exceeds (Annual)	—	—	—	—	—	—	—
Threshold	10.0	—	—	14.0	—	—	14.0
Unmit.	No	Yes	—	No	—	—	No
Mit.	No	Yes	—	No	—	—	No

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	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily - Summer (Max)	—	—	—	—	—	—	—
2025	72.4	2.33	41.5	42.8	2.15	6.32	7.52
Daily - Winter (Max)	—	—	—	—	—	—	—
2025	76.2	3.11	52.6	55.7	2.87	14.2	17.1
Average Daily	—	—	—	—	—	—	—
2025	25.0	0.86	16.2	17.0	0.79	3.13	3.92
Annual	—	—	—	—	—	—	—
2025	4.56	0.16	2.95	3.11	0.14	0.57	0.72

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	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Daily - Summer (Max)	—	—	—	—	—	—	—
2025	41.1	1.01	22.2	22.8	0.95	4.40	4.96
Daily - Winter (Max)	—	—	—	—	—	—	—
2025	34.3	0.83	22.2	22.8	0.79	5.96	6.75
Average Daily	—	—	—	—	—	—	—
2025	13.6	0.32	7.68	7.99	0.30	1.73	2.04
Annual	—	—	—	—	—	—	—

2025	2.49	0.06	1.40	1.46	0.06	0.32	0.37

3. Construction Emissions Details

3.1. Site Preparation and Grading (2025) - Unmitigated

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

Location	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	64.6	2.94	—	2.94	2.71	—	2.71
Dust From Material Movement	—	—	21.8	21.8	—	10.3	10.3
Onsite truck	0.15	< 0.005	25.8	25.8	< 0.005	2.57	2.57
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	7.08	0.32	—	0.32	0.30	—	0.30
Dust From Material Movement	—	—	2.39	2.39	—	1.13	1.13
Onsite truck	0.02	< 0.005	2.69	2.69	< 0.005	0.27	0.27
Annual	—	—	—	—	—	—	—
Off-Road Equipment	1.29	0.06	—	0.06	0.05	—	0.05
Dust From Material Movement	—	—	0.44	0.44	—	0.21	0.21
Onsite truck	< 0.005	< 0.005	0.49	0.49	< 0.005	0.05	0.05
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	1.04	0.00	2.83	2.83	0.00	0.66	0.66
Vendor	4.98	0.08	1.16	1.24	0.08	0.32	0.40

Hauling	5.37	0.08	1.11	1.19	0.08	0.30	0.38
Average Daily	—	—	—	—	—	—	—
Worker	0.10	0.00	0.31	0.31	0.00	0.07	0.07
Vendor	0.54	0.01	0.13	0.14	0.01	0.03	0.04
Hauling	0.58	0.01	0.12	0.13	0.01	0.03	0.04
Annual	—	—	—	—	—	—	—
Worker	0.02	0.00	0.06	0.06	0.00	0.01	0.01
Vendor	0.10	< 0.005	0.02	0.02	< 0.005	0.01	0.01
Hauling	0.11	< 0.005	0.02	0.02	< 0.005	0.01	0.01

3.2. Site Preparation and Grading (2025) - Mitigated

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

Location	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	22.7	0.66	—	0.66	0.63	—	0.63
Dust From Material Movement	—	—	8.49	8.49	—	4.03	4.03
Onsite truck	0.15	< 0.005	6.50	6.50	< 0.005	0.65	0.65
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	2.49	0.07	—	0.07	0.07	—	0.07
Dust From Material Movement	—	—	0.93	0.93	—	0.44	0.44
Onsite truck	0.02	< 0.005	0.68	0.68	< 0.005	0.07	0.07
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.01	—	0.01	0.01	—	0.01
Dust From Material Movement	—	—	0.17	0.17	—	0.08	0.08

Onsite truck	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	1.04	0.00	2.83	2.83	0.00	0.66	0.66
Vendor	4.98	0.08	1.16	1.24	0.08	0.32	0.40
Hauling	5.37	0.08	1.11	1.19	0.08	0.30	0.38
Average Daily	—	—	—	—	—	—	—
Worker	0.10	0.00	0.31	0.31	0.00	0.07	0.07
Vendor	0.54	0.01	0.13	0.14	0.01	0.03	0.04
Hauling	0.58	0.01	0.12	0.13	0.01	0.03	0.04
Annual	—	—	—	—	—	—	—
Worker	0.02	0.00	0.06	0.06	0.00	0.01	0.01
Vendor	0.10	< 0.005	0.02	0.02	< 0.005	0.01	0.01
Hauling	0.11	< 0.005	0.02	0.02	< 0.005	0.01	0.01

3.3. Solar Arrays and Inverters Installation (2025) - Unmitigated

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

Location	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	32.5	1.18	—	1.18	1.08	—	1.08
Onsite truck	0.14	< 0.005	25.8	25.8	< 0.005	2.57	2.57
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	32.5	1.18	—	1.18	1.08	—	1.08
Onsite truck	0.15	< 0.005	25.8	25.8	< 0.005	2.57	2.57
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	5.34	0.19	—	0.19	0.18	—	0.18

Onsite truck	0.02	< 0.005	4.04	4.04	< 0.005	0.40	0.40
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.98	0.04	—	0.04	0.03	—	0.03
Onsite truck	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	4.27	0.00	14.1	14.1	0.00	3.31	3.31
Vendor	4.65	0.08	1.16	1.24	0.08	0.32	0.40
Hauling	2.01	0.03	0.44	0.48	0.03	0.12	0.15
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	5.20	0.00	14.1	14.1	0.00	3.31	3.31
Vendor	4.98	0.08	1.16	1.24	0.08	0.32	0.40
Hauling	2.15	0.03	0.44	0.48	0.03	0.12	0.15
Average Daily	—	—	—	—	—	—	—
Worker	0.78	0.00	2.30	2.30	0.00	0.54	0.54
Vendor	0.80	0.01	0.19	0.20	0.01	0.05	0.07
Hauling	0.35	0.01	0.07	0.08	0.01	0.02	0.03
Annual	—	—	—	—	—	—	—
Worker	0.14	0.00	0.42	0.42	0.00	0.10	0.10
Vendor	0.15	< 0.005	0.03	0.04	< 0.005	0.01	0.01
Hauling	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005

3.4. Solar Arrays and Inverters Installation (2025) - Mitigated

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

Location	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	15.8	0.47	—	0.47	0.44	—	0.44

Onsite truck	0.14	< 0.005	6.50	6.50	< 0.005	0.65	0.65
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	15.8	0.47	—	0.47	0.44	—	0.44
Onsite truck	0.15	< 0.005	6.50	6.50	< 0.005	0.65	0.65
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	2.60	0.08	—	0.08	0.07	—	0.07
Onsite truck	0.02	< 0.005	1.02	1.02	< 0.005	0.10	0.10
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.47	0.01	—	0.01	0.01	—	0.01
Onsite truck	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	4.27	0.00	14.1	14.1	0.00	3.31	3.31
Vendor	4.65	0.08	1.16	1.24	0.08	0.32	0.40
Hauling	2.01	0.03	0.44	0.48	0.03	0.12	0.15
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	5.20	0.00	14.1	14.1	0.00	3.31	3.31
Vendor	4.98	0.08	1.16	1.24	0.08	0.32	0.40
Hauling	2.15	0.03	0.44	0.48	0.03	0.12	0.15
Average Daily	—	—	—	—	—	—	—
Worker	0.78	0.00	2.30	2.30	0.00	0.54	0.54
Vendor	0.80	0.01	0.19	0.20	0.01	0.05	0.07
Hauling	0.35	0.01	0.07	0.08	0.01	0.02	0.03
Annual	—	—	—	—	—	—	—
Worker	0.14	0.00	0.42	0.42	0.00	0.10	0.10
Vendor	0.15	< 0.005	0.03	0.04	< 0.005	0.01	0.01
Hauling	0.06	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005

3.5. Electrical Work (2025) - Unmitigated

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

Location	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	31.7	1.05	—	1.05	0.96	—	0.96
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	3.47	0.11	—	0.11	0.11	—	0.11
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.63	0.02	—	0.02	0.02	—	0.02
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	1.28	0.00	4.24	4.24	0.00	0.99	0.99
Vendor	0.74	0.01	0.19	0.20	0.01	0.05	0.06
Hauling	0.33	0.01	0.07	0.08	0.01	0.02	0.03
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	0.16	0.00	0.46	0.46	0.00	0.11	0.11
Vendor	0.09	< 0.005	0.02	0.02	< 0.005	0.01	0.01
Hauling	0.04	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Annual	—	—	—	—	—	—	—
Worker	0.03	0.00	0.08	0.08	0.00	0.02	0.02
Vendor	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

3.6. Electrical Work (2025) - Mitigated

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

Location	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	13.8	0.28	—	0.28	0.26	—	0.26
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	1.51	0.03	—	0.03	0.03	—	0.03
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.28	0.01	—	0.01	0.01	—	0.01
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	1.28	0.00	4.24	4.24	0.00	0.99	0.99
Vendor	0.74	0.01	0.19	0.20	0.01	0.05	0.06
Hauling	0.33	0.01	0.07	0.08	0.01	0.02	0.03
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	0.16	0.00	0.46	0.46	0.00	0.11	0.11
Vendor	0.09	< 0.005	0.02	0.02	< 0.005	0.01	0.01
Hauling	0.04	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Annual	—	—	—	—	—	—	—
Worker	0.03	0.00	0.08	0.08	0.00	0.02	0.02
Vendor	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

3.7. Substation Installation (2025) - Unmitigated

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

Location	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	29.8	1.14	—	1.14	1.05	—	1.05
Onsite truck	0.14	< 0.005	25.8	25.8	< 0.005	2.57	2.57
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	3.27	0.13	—	0.13	0.12	—	0.12
Onsite truck	0.02	< 0.005	2.69	2.69	< 0.005	0.27	0.27
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.60	0.02	—	0.02	0.02	—	0.02
Onsite truck	< 0.005	< 0.005	0.49	0.49	< 0.005	0.05	0.05
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	1.28	0.00	4.24	4.24	0.00	0.99	0.99
Vendor	3.72	0.07	0.93	0.99	0.07	0.25	0.32
Hauling	3.35	0.05	0.74	0.79	0.05	0.20	0.26
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	0.16	0.00	0.46	0.46	0.00	0.11	0.11
Vendor	0.43	0.01	0.10	0.11	0.01	0.03	0.03
Hauling	0.38	0.01	0.08	0.09	0.01	0.02	0.03
Annual	—	—	—	—	—	—	—
Worker	0.03	0.00	0.08	0.08	0.00	0.02	0.02
Vendor	0.08	< 0.005	0.02	0.02	< 0.005	0.01	0.01
Hauling	0.07	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01

3.8. Substation Installation (2025) - Mitigated

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

Location	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	16.4	0.59	—	0.59	0.55	—	0.55
Onsite truck	0.14	< 0.005	6.50	6.50	< 0.005	0.65	0.65
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	1.80	0.06	—	0.06	0.06	—	0.06
Onsite truck	0.02	< 0.005	0.68	0.68	< 0.005	0.07	0.07
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.01	—	0.01	0.01	—	0.01
Onsite truck	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	1.28	0.00	4.24	4.24	0.00	0.99	0.99
Vendor	3.72	0.07	0.93	0.99	0.07	0.25	0.32
Hauling	3.35	0.05	0.74	0.79	0.05	0.20	0.26
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	0.16	0.00	0.46	0.46	0.00	0.11	0.11
Vendor	0.43	0.01	0.10	0.11	0.01	0.03	0.03
Hauling	0.38	0.01	0.08	0.09	0.01	0.02	0.03
Annual	—	—	—	—	—	—	—
Worker	0.03	0.00	0.08	0.08	0.00	0.02	0.02
Vendor	0.08	< 0.005	0.02	0.02	< 0.005	0.01	0.01
Hauling	0.07	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01

3.9. Transmission Interconnection (2025) - Unmitigated

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

Location	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	20.3	0.81	—	0.81	0.75	—	0.75
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	1.11	0.04	—	0.04	0.04	—	0.04
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.01	—	0.01	0.01	—	0.01
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.43	0.00	1.41	1.41	0.00	0.33	0.33
Vendor	0.74	0.01	0.19	0.20	0.01	0.05	0.06
Hauling	3.35	0.05	0.74	0.79	0.05	0.20	0.26
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	0.03	0.00	0.08	0.08	0.00	0.02	0.02
Vendor	0.04	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Hauling	0.19	< 0.005	0.04	0.04	< 0.005	0.01	0.01
Annual	—	—	—	—	—	—	—
Worker	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005
Vendor	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.04	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005

3.10. Transmission Interconnection (2025) - Mitigated

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

Location	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	9.43	0.33	—	0.33	0.31	—	0.31
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.02	—	0.02	0.02	—	0.02
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.09	< 0.005	—	< 0.005	< 0.005	—	< 0.005
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.43	0.00	1.41	1.41	0.00	0.33	0.33
Vendor	0.74	0.01	0.19	0.20	0.01	0.05	0.06
Hauling	3.35	0.05	0.74	0.79	0.05	0.20	0.26
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	0.03	0.00	0.08	0.08	0.00	0.02	0.02
Vendor	0.04	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005
Hauling	0.19	< 0.005	0.04	0.04	< 0.005	0.01	0.01
Annual	—	—	—	—	—	—	—
Worker	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005
Vendor	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Hauling	0.04	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation and Grading	Site Preparation	1/2/2025	2/26/2025	5.00	40.0	—
Solar Arrays and Inverters Installation	Building Construction	2/27/2025	5/21/2025	5.00	60.0	—
Electrical Work	Building Construction	5/22/2025	7/16/2025	5.00	40.0	—
Substation Installation	Building Construction	6/19/2025	8/13/2025	5.00	40.0	—
Transmission Interconnection	Building Construction	8/14/2025	9/10/2025	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation and Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Site Preparation and Grading	Graders	Diesel	Average	4.00	8.00	148	0.41
Site Preparation and Grading	Rollers	Diesel	Average	4.00	8.00	36.0	0.38
Site Preparation and Grading	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation and Grading	Rubber Tired Loaders	Diesel	Average	4.00	8.00	150	0.36
Site Preparation and Grading	Skid Steer Loaders	Diesel	Average	6.00	8.00	71.0	0.37
Site Preparation and Grading	Trenchers	Diesel	Average	4.00	8.00	40.0	0.50

Site Preparation and Grading	Dumpers/Tenders	Diesel	Average	4.00	8.00	16.0	0.38
Solar Arrays and Inverters Installation	Bore/Drill Rigs	Diesel	Average	10.0	8.00	83.0	0.50
Solar Arrays and Inverters Installation	Forklifts	Diesel	Average	10.0	8.00	82.0	0.20
Solar Arrays and Inverters Installation	Skid Steer Loaders	Diesel	Average	2.00	8.00	71.0	0.37
Solar Arrays and Inverters Installation	Trenchers	Diesel	Average	2.00	8.00	40.0	0.50
Solar Arrays and Inverters Installation	Welders	Diesel	Average	6.00	8.00	46.0	0.45
Electrical Work	Aerial Lifts	Diesel	Average	8.00	8.00	46.0	0.31
Electrical Work	Bore/Drill Rigs	Diesel	Average	2.00	8.00	83.0	0.50
Electrical Work	Cranes	Diesel	Average	4.00	8.00	367	0.29
Electrical Work	Skid Steer Loaders	Diesel	Average	2.00	8.00	71.0	0.37
Electrical Work	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Electrical Work	Trenchers	Diesel	Average	2.00	8.00	40.0	0.50
Substation Installation	Air Compressors	Diesel	Average	4.00	8.00	37.0	0.48
Substation Installation	Cranes	Diesel	Average	2.00	8.00	367	0.29
Substation Installation	Excavators	Diesel	Average	4.00	8.00	36.0	0.38
Substation Installation	Generator Sets	Diesel	Average	4.00	8.00	14.0	0.74
Substation Installation	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Substation Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
Substation Installation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Substation Installation	Tractors/Loaders/Backhoes	Diesel	Average	6.00	8.00	84.0	0.37
Substation Installation	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Transmission Interconnection	Air Compressors	Diesel	Average	2.00	8.00	37.0	0.48

Transmission Interconnection	Cranes	Diesel	Average	2.00	8.00	367	0.29
Transmission Interconnection	Forklifts	Diesel	Average	4.00	8.00	82.0	0.20
Transmission Interconnection	Generator Sets	Diesel	Average	2.00	8.00	14.0	0.74
Transmission Interconnection	Pumps	Diesel	Average	2.00	8.00	11.0	0.74
Transmission Interconnection	Welders	Diesel	Average	2.00	8.00	46.0	0.45
Transmission Interconnection	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation and Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	8.00	84.0	0.37
Site Preparation and Grading	Graders	Diesel	Tier 4 Final	4.00	8.00	148	0.41
Site Preparation and Grading	Rollers	Diesel	Average	4.00	8.00	36.0	0.38
Site Preparation and Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	3.00	8.00	367	0.40
Site Preparation and Grading	Rubber Tired Loaders	Diesel	Tier 4 Final	4.00	8.00	150	0.36
Site Preparation and Grading	Skid Steer Loaders	Diesel	Tier 4 Final	6.00	8.00	71.0	0.37
Site Preparation and Grading	Trenchers	Diesel	Average	4.00	8.00	40.0	0.50
Site Preparation and Grading	Dumpers/Tenders	Diesel	Average	4.00	8.00	16.0	0.38
Solar Arrays and Inverters Installation	Bore/Drill Rigs	Diesel	Tier 4 Final	10.0	8.00	83.0	0.50

Solar Arrays and Inverters Installation	Forklifts	Diesel	Tier 4 Final	10.0	8.00	82.0	0.20
Solar Arrays and Inverters Installation	Skid Steer Loaders	Diesel	Tier 4 Final	2.00	8.00	71.0	0.37
Solar Arrays and Inverters Installation	Trenchers	Diesel	Average	2.00	8.00	40.0	0.50
Solar Arrays and Inverters Installation	Welders	Diesel	Average	6.00	8.00	46.0	0.45
Electrical Work	Aerial Lifts	Diesel	Average	8.00	8.00	46.0	0.31
Electrical Work	Bore/Drill Rigs	Diesel	Tier 4 Final	2.00	8.00	83.0	0.50
Electrical Work	Cranes	Diesel	Tier 4 Final	4.00	8.00	367	0.29
Electrical Work	Skid Steer Loaders	Diesel	Tier 4 Final	2.00	8.00	71.0	0.37
Electrical Work	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Electrical Work	Trenchers	Diesel	Average	2.00	8.00	40.0	0.50
Substation Installation	Air Compressors	Diesel	Average	4.00	8.00	37.0	0.48
Substation Installation	Cranes	Diesel	Tier 4 Final	2.00	8.00	367	0.29
Substation Installation	Excavators	Diesel	Average	4.00	8.00	36.0	0.38
Substation Installation	Generator Sets	Diesel	Average	4.00	8.00	14.0	0.74
Substation Installation	Forklifts	Diesel	Tier 4 Final	2.00	8.00	82.0	0.20
Substation Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
Substation Installation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Substation Installation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	6.00	8.00	84.0	0.37
Substation Installation	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Transmission Interconnection	Air Compressors	Diesel	Average	2.00	8.00	37.0	0.48
Transmission Interconnection	Cranes	Diesel	Tier 4 Final	2.00	8.00	367	0.29
Transmission Interconnection	Forklifts	Diesel	Tier 4 Final	4.00	8.00	82.0	0.20

Transmission Interconnection	Generator Sets	Diesel	Average	2.00	8.00	14.0	0.74
Transmission Interconnection	Pumps	Diesel	Average	2.00	8.00	11.0	0.74
Transmission Interconnection	Welders	Diesel	Average	2.00	8.00	46.0	0.45
Transmission Interconnection	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation and Grading	—	—	—	—
Site Preparation and Grading	Worker	80.0	50.0	LDA,LDT1,LDT2
Site Preparation and Grading	Vendor	25.0	50.0	HHDT
Site Preparation and Grading	Hauling	60.0	20.0	HHDT
Site Preparation and Grading	Onsite truck	5.00	3.50	HHDT
Solar Arrays and Inverters Installation	—	—	—	—
Solar Arrays and Inverters Installation	Worker	400	50.0	LDA,LDT1,LDT2
Solar Arrays and Inverters Installation	Vendor	25.0	50.0	HHDT
Solar Arrays and Inverters Installation	Hauling	24.0	20.0	HHDT
Solar Arrays and Inverters Installation	Onsite truck	5.00	3.50	HHDT
Electrical Work	—	—	—	—
Electrical Work	Worker	120	50.0	LDA,LDT1,LDT2
Electrical Work	Vendor	4.00	50.0	HHDT
Electrical Work	Hauling	4.00	20.0	HHDT

Electrical Work	Onsite truck	—	—	HHDT
Substation Installation	—	—	—	—
Substation Installation	Worker	120	50.0	LDA,LDT1,LDT2
Substation Installation	Vendor	20.0	50.0	HHDT
Substation Installation	Hauling	40.0	20.0	HHDT
Substation Installation	Onsite truck	5.00	3.50	HHDT
Transmission Interconnection	—	—	—	—
Transmission Interconnection	Worker	40.0	50.0	LDA,LDT1,LDT2
Transmission Interconnection	Vendor	4.00	50.0	HHDT
Transmission Interconnection	Hauling	40.0	20.0	HHDT
Transmission Interconnection	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation and Grading	—	—	—	—
Site Preparation and Grading	Worker	80.0	50.0	LDA,LDT1,LDT2
Site Preparation and Grading	Vendor	25.0	50.0	HHDT
Site Preparation and Grading	Hauling	60.0	20.0	HHDT
Site Preparation and Grading	Onsite truck	5.00	3.50	HHDT
Solar Arrays and Inverters Installation	—	—	—	—
Solar Arrays and Inverters Installation	Worker	400	50.0	LDA,LDT1,LDT2
Solar Arrays and Inverters Installation	Vendor	25.0	50.0	HHDT
Solar Arrays and Inverters Installation	Hauling	24.0	20.0	HHDT
Solar Arrays and Inverters Installation	Onsite truck	5.00	3.50	HHDT
Electrical Work	—	—	—	—

Electrical Work	Worker	120	50.0	LDA,LDT1,LDT2
Electrical Work	Vendor	4.00	50.0	HHDT
Electrical Work	Hauling	4.00	20.0	HHDT
Electrical Work	Onsite truck	—	—	HHDT
Substation Installation	—	—	—	—
Substation Installation	Worker	120	50.0	LDA,LDT1,LDT2
Substation Installation	Vendor	20.0	50.0	HHDT
Substation Installation	Hauling	40.0	20.0	HHDT
Substation Installation	Onsite truck	5.00	3.50	HHDT
Transmission Interconnection	—	—	—	—
Transmission Interconnection	Worker	40.0	50.0	LDA,LDT1,LDT2
Transmission Interconnection	Vendor	4.00	50.0	HHDT
Transmission Interconnection	Hauling	40.0	20.0	HHDT
Transmission Interconnection	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)

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)
Site Preparation and Grading	—	—	980	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

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

8. User Changes to Default Data

Screen	Justification
Land Use	Provided by Applicant.
Construction: Construction Phases	Provided by Applicant.
Construction: Off-Road Equipment	Provided by Applicant.
Operations: Off-Road Equipment	Provided by Applicant.
Operations: Solid Waste	Provided by Applicant.
Construction: Dust From Material Movement	Provided by Applicant.
Construction: Trips and VMT	Provided by Applicant.
Operations: Energy Use	Provided by Applicant.
Operations: Water and Waste Water	Provided by Applicant.
Operations: Architectural Coatings	Not Applicable.
Operations: Emergency Generators and Fire Pumps	Provided by Applicant.

Generator Emissions- Construction

Engine Fuel Type	Diesel	
Engine Make	TBD	
Engine Model	TBD	
Rated Power	400	kW
Rated Power	536	bhp
Diesel Heat Content	138,000	Btu/gal
Engine Heat Input	3.75	MMBtu/hr
Max. Fuel Consumption	27.2	gal/hr
Operating Hours	8	hr/day
	1440	hr/yr
No. of Engines	1	engine

Engine Potential Emissions				1 Engine		
Criteria Pollutant	**g/hp-hr**	**lb/hp-hr**	**g/kW-hr**	**lb/hr**	**PTE TPY**	**lb/day**
NOx [1]	---	---	0.4	0.26	0.19	2.11
SO_2 [2]	---	2.05E-03		1.10	0.79	8.79
PM [1]	---	---	0.02	0.01	0.01	0.11
CO [1]	---	---	3.5	2.30	1.66	18.4
TOC [2]	---	2.47E-03		1.32	0.95	10.6
CO_2 [2]	---	1.15		616	444	4931
CH_4 [3]	2.10E-02	---		0.02	0.02	0.20
N_2O [3]	4.20E-03	---		0.005	0.004	0.04
CO_2e	---	---		618	445	4948

GHG Metric Tonnes [3]

CO_2					402.6	
CH_4					0.016	
N_2O					0.003	
CO_2e					404.0	

Gram to Pound:	453.59
Ton to Metric Tonnes:	0.907185

Notes:

[1] Emission factor (lb/hp-hr) is based on EPA Nonroad Compression-Ignition Engines: Exhaust Emission Standards, available online at https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf

[2] Emission factor (lb/hp-hr) is based on EPA AP-42 Section 3.3, Table 3.3-1.

[3] CH_4, and N_2O g/MMBtu are from EPA GHG Emission Factors Hub (2024). An average brake-specific fuel consumption (BSFC) of 7,000 Btu/hp-hr was used to convert from g/MMBtu to g/hp-hr

[3] 1 Ton = 0.907185 Metric Ton

Acronyms and Abbreviations:

bhp = brake horse-power
btu = British thermal units
gal = gallon
MM = million
hr = hour
yr = year
g = gram

NOx = nitrious oxides
SO_2 = sulfur dioxide
PM = particulate matter
CO = carbon monoxide