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Filer:	Grace Myers
Organization:	Rincon Consultants, Inc.
Submitter Role:	Applicant Consultant
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Appendix R, Part 1

Air Quality and Greenhouse Gas Emissions Study

Vaca Dixon Power Center Project

Air Quality and Greenhouse Gas Emissions Study

prepared for

Vaca Dixon BESS LLC/Arges BESS LLC
4350 Executive Drive, Suite 320
San Diego, California 92121

prepared by

Rincon Consultants, Inc.
8825 Aero Drive, Suite 120
San Diego, California 92123

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RINCON CONSULTANTS

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1 Project Description

1.1 Introduction

This study analyzes the air quality and greenhouse gas (GHG) emissions impacts associated with the construction and operation of the Vaca Dixon Power Center Project (Project) in the City of Vacaville and unincorporated Solano County, California. Table 1 provides a summary of Project impacts.

Table 1 Summary of Impacts

Issue	Project's Level of Significance	Applicable Recommendations
Would the Project conflict with or obstruct implementation of the applicable air quality plan?	Less than significant impact (Construction) Less than significant impact (Operation)	None
Would the Project result in cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for ozone precursors)?	Less than significant impact (Construction) Less than significant impact (Operation)	None
Would the Project expose sensitive receptors to substantial pollutant concentrations including air toxics such as diesel particulates?	Less than significant impact (Construction) Less than significant impact (Operation)	None
Would the Project create objectionable odors affecting a substantial number of people?	Less than significant impact (Construction) Less than significant impact (Operation)	None
Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than significant impact (Construction) Less than significant impact (Operation)	None
Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?	Less than significant impact (Construction) Less than significant impact (Operation)	None

1.2 Project Summary

Project Location

The Project battery energy storage system (BESS) facilities would be located on an approximately 10-acre site on Assessor Parcel Number (APN) 133-060-060 in the City of Vacaville. The Project transmission intertie (gen-tie) lines would cross Interstate 80 (I-80) to the north to connect to the existing Pacific Gas & Electric (PG&E) Vaca-Dixon Substation located on a PG&E-owned parcel (APN 0133-060-070) in unincorporated Solano County. (Figure 1 and Figure 2).

Figure 1 Regional Location

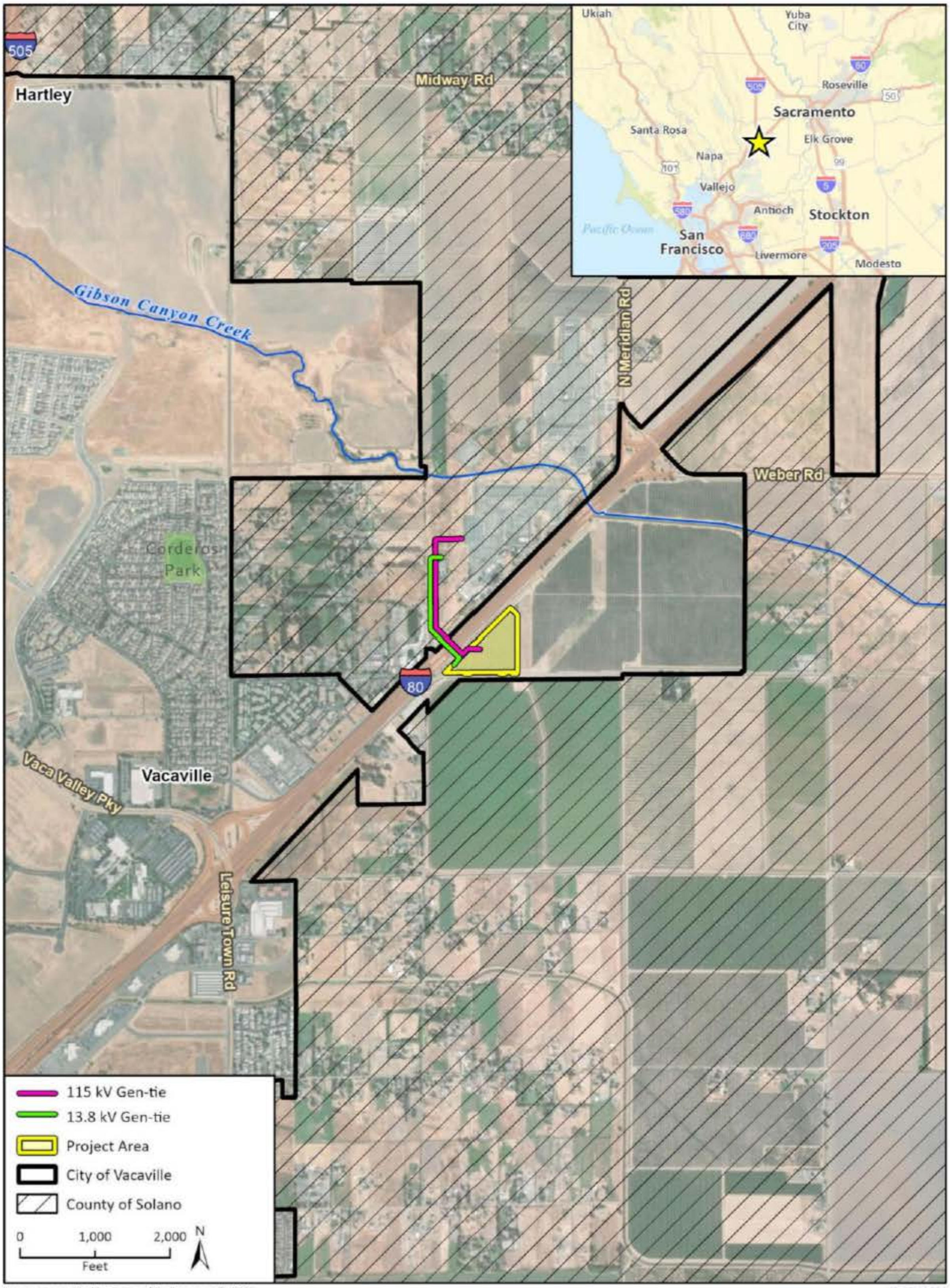

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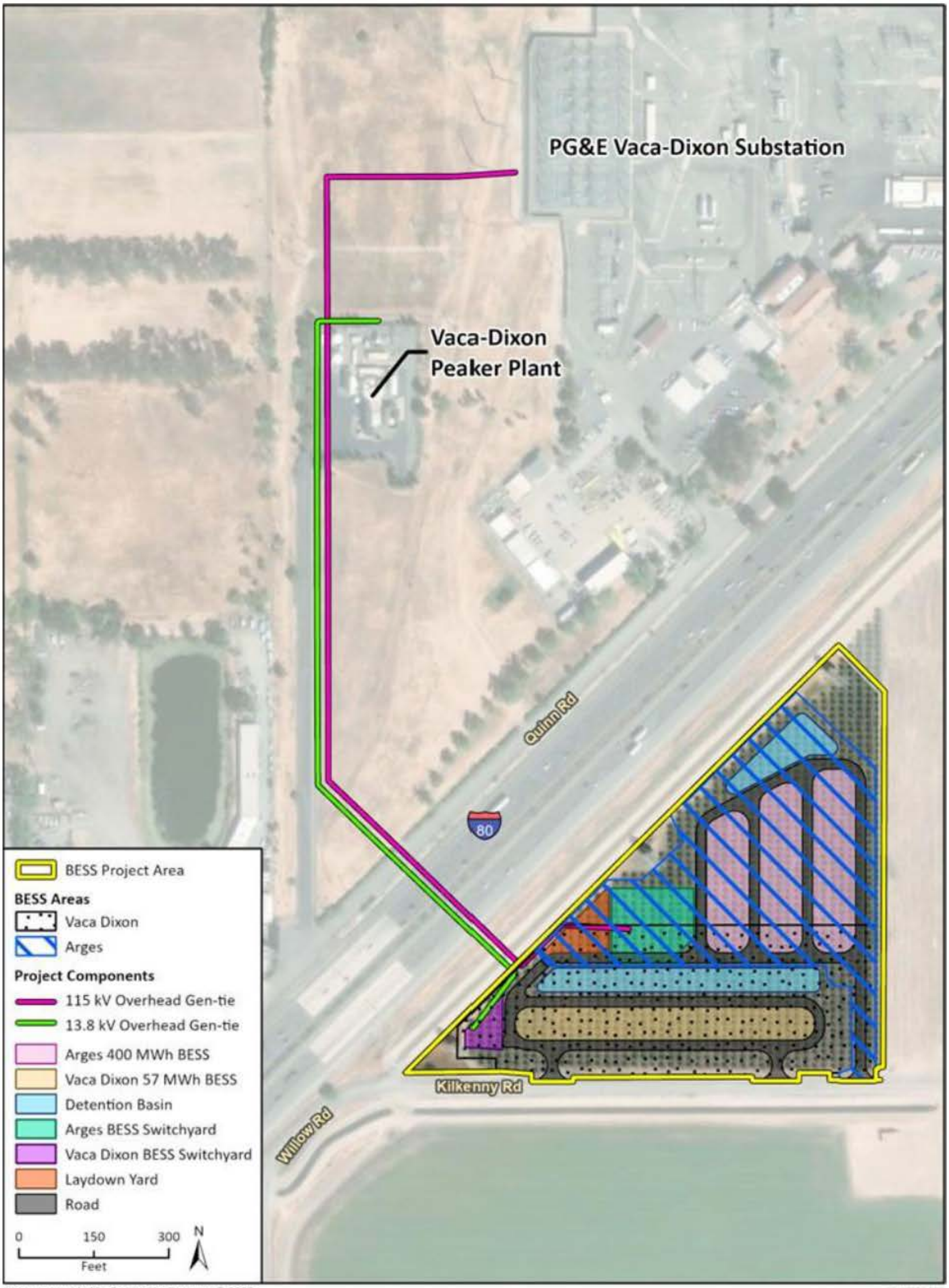
Figure 2 Study Area



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Project Description

Vaca Dixon BESS LLC and Arges BESS LLC (Applicants), propose to construct, operate, and eventually repower or decommission the Project. The BESS facilities are proposed to be installed on an approximately 10-acre site in the City of Vacaville in Solano County, California. The proposed BESS facilities are located on APN 0133-060-060. The Project would operate 7 days a week, 365 days a year, with an up to 35-year anticipated lifespan. The primary Project facility components at the approximately 10-acre combined BESS Project area include:

- Vaca Dixon BESS (57 megawatts [MW], 1-hour duration, 57 MW hour [MWh]), including electrical switchyard
- Arges BESS (100 MW, 4-hour duration, 400 MWh), including electrical switchyard

The Project also includes gen-tie lines crossing Interstate 80 (I-80) to the north to connect the BESS facilities to the existing PG&E Vaca-Dixon Substation located on a PG&E-owned parcel (APN 0133-060-070) in unincorporated Solano County. Both BESS components would interconnect to the existing PG&E Vaca-Dixon Substation at 115 kilovolts (kV). The Vaca Dixon BESS is proposed to connect to the existing 13.8/115 kV generation step up (GSU) transformer at the existing CalPeak Power - Vaca Dixon Peaker Plant (VDPP) on the PG&E parcel via a new overhead 13.8 kV line from the proposed BESS switchyard to the low side of the VDPP GSU transformer to the north. The existing GSU transformer in the VDPP switchyard is connected to the PG&E substation by an existing 115 kV line. The Arges BESS would interconnect to the PG&E substation via a new overhead 115 kV gen-tie to be constructed from the Arges BESS switchyard at the BESS Project area south of I-80 to the PG&E substation to the north.

The proposed gen-tie components for the Vaca Dixon 57 MWh and Arges BESS 400 MWh BESS facilities would be co-located on shared transmission structures carrying both 13.8 kV and 115 kV conductors for approximately 1,500 feet of the gen-tie lengths, from the vicinity of the BESS switchyards across I-80 and up to the northwest corner of the VDPP facility site. As shown in the figures above, from that point, the 13.8 kV gen-tie component for the Vaca Dixon 57 BESS would continue approximately 150 feet to the east for connection to the low side of the 13.8/115 kV GSU transformer at the VDPP. The VDPP GSU is interconnected to the PG&E Vaca-Dixon Substation via an existing 115 kV transmission line. The Arges BESS 400 MWh 115 kV gen-tie route continues approximately 725 feet north and east to the connection point at the PG&E Vaca-Dixon Substation. The gen-tie crossing of I-80 would require an encroachment permit from the California Department of Transportation (Caltrans).

Construction

Construction site mobilization would begin in 2027. Typical construction activities are expected to occur between 7:00 a.m. and 7:00 p.m., Monday through Saturday. Construction equipment to be utilized would include the following: backhoes, bore/drill rigs, compactors, compressors, cranes, dozers, graders, excavators, forklifts, loaders (front-end, rubber-tired, and skid steer), pavers, portable electric generators, rough terrain forklifts, sweepers, welders, dump trucks, and water trucks[1]. Construction vehicles would be equipped with Tier 4 Final engines or retrofitted to Tier 4 Final standards. A detailed list of construction equipment is provided in Appendix A.

[1] Note that light duty helicopter usage is anticipated very briefly during the Electrical Wire Installation/Finish Grading phase to string lines between the two poles at the I-80 crossing.

Operation

Operation of the Vaca Dixon 57 MWh facility would be integrated with the existing VDPP, but the BESS would be charged from the electrical grid and not from the generation output of the VDPP. The Arges BESS 400 MWh facility will be charged from the electrical grid via the PG&E Vaca-Dixon Substation. Operation would begin in 2028 after completion of the Vaca Dixon BESS component and full buildout in second quarter of 2029 after completion of the Arges BESS component. Project facilities would be expected to require regular maintenance visits by two workers up to twice per week on average. The planned Project life is 35 years.

2 Background

2.1 Environmental Settings

Climate and Meteorological Conditions

The Project is in the City of Vacaville and unincorporated Solano County. The Project Study Area includes the Project BESS facilities and gen-tie lines and is located within the Yolo-Solano Air Quality Management District (YSAQMD) within the Sacramento Valley Air Basin (SVAB). The SVAB encompasses eleven counties including all of Shasta, Tehama, Glenn, Colusa, Butte, Sutter, Yuba, Sacramento, and Yolo counties, the westernmost portion of Placer County and the northeastern half of Solano County. The SVAB is bounded by the North Coast Ranges on the west and Northern Sierra Nevada Mountains on the east. The intervening terrain is relatively flat.

Hot dry summers and mild rainy winters characterize the Mediterranean climate of the SVAB. During the year, the temperature may range from 20 to 115 degrees Fahrenheit with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches, and the rainy season generally occurs from November through March. The prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north.

The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants under certain meteorological conditions. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells collect over the Sacramento Valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions that trap pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the delta sea breeze arriving in the afternoon out of the southwest. Usually, the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing the prevailing wind patterns to move north carrying the pollutants out, the Schultz Eddy causes the wind pattern to circle back to the south. Essentially, this phenomenon causes the air pollutants to be blown south toward the SVAB. This phenomenon has the effect of exacerbating the pollution levels in the area and increases the likelihood of violating federal or state standards. The eddy normally dissipates around noon when the delta sea breeze arrives (YSAQMD 2007).

2.2 Air Quality

Air Pollutants of Concern

The federal and state Clean Air Acts mandate the control and reduction of certain air pollutants. Under these laws, the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for criteria air pollutants that are a threat to public health and welfare. Criteria pollutants that are a concern in the SVAB are described below.

Ozone

Ozone (O_3) is a highly oxidative unstable gas produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_X) and reactive organic gases (ROG).[2] ROG is composed of non-methane hydrocarbons (with specific exclusions), and NO_X is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and nitrogen dioxide (NO_2). NO_X is formed during the combustion of fuels, while ROG is formed during the combustion and evaporation of organic solvents. As a highly reactive molecule, O_3 readily combines with many different atmospheric components. Consequently, high O_3 levels tend to exist only while high ROG and NO_X levels are present to sustain the O_3 formation process. Once the precursors have been depleted, O_3 levels rapidly decline. Because these reactions occur on a regional rather than local scale, O_3 is considered a regional pollutant. In addition, because O_3 requires sunlight to form, it mainly occurs in concentrations considered serious between April and October. People most at risk from O_3 include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers. In addition, people with reduced intake of certain nutrients, such as vitamins C and E, are at greater risk from O_3 exposure. Depending on the level of exposure, O_3 can cause coughing and a sore or scratchy throat; make it more difficult to breathe deeply and vigorously and cause pain when taking a deep breath; inflame and damage the airways; make the lungs more susceptible to infection; aggravate lung diseases such as asthma, emphysema, and chronic bronchitis; and increase the frequency of asthma attacks (USEPA 2024a).

Nitrogen Dioxide

NO_2 is a by-product of coal, oil, gas or diesel fuel combustion. The primary sources are motor vehicles and industrial boilers, and furnaces. The principal form of NO_x produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2, commonly called NO_x. NO_2 is a reactive, oxidizing gas and an acute irritant capable of damaging cell linings in the respiratory tract. Breathing air with a high concentration of NO_2 can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases leading to respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma and children and the elderly are generally at greater risk for the health effects of NO_2 (USEPA 2024b). NO_2 absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of O_3/smog and acid rain.

Carbon Monoxide

CO is a localized pollutant found in high concentrations only near its source. The primary source of CO, a colorless, odorless, poisonous gas, is automobile traffic's incomplete combustion of petroleum fuels. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. When CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability to get oxygenated blood to their hearts in situations where they need more oxygen than usual. As a result, they are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-term exposure to

[2] CARB defines VOC and ROG similarly as, “any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate,” with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this document.

elevated CO may result in reduced oxygen to the heart accompanied by chest pain, also known as angina (USEPA 2024c).

Particulate Matter

Suspended atmospheric particulate matter (PM_{10} and $PM_{2.5}$) are comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mist. Both PM_{10} and $PM_{2.5}$ are emitted into the atmosphere as by-products of coal, gas, oil, or diesel fuel combustion and wind erosion of soil and unpaved roads. The atmosphere, through chemical reactions, can form particulate matter. The characteristics, sources, and potential health effects of PM_{10} and $PM_{2.5}$ can be very different. PM_{10} is generally associated with dust mobilized by wind and vehicles. In contrast, $PM_{2.5}$ is generally associated with combustion processes and formation in the atmosphere as a secondary pollutant through chemical reactions. PM_{10} can cause increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling. For $PM_{2.5}$, short-term exposures (up to 24-hours duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases (CARB 2023).

Sulfur Dioxide

Sulfur dioxide (SO_2) is included in a group of highly reactive gases known as “oxides of sulfur.” The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore and burning fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO_2 (USEPA 2024d).

Lead

Lead (Pb) is a metal found naturally in the environment, as well as in manufacturing products. The major sources of Pb emissions historically have been mobile and industrial. However, due to the USEPA’s regulatory efforts to remove Pb from gasoline, atmospheric Pb concentrations have declined substantially over the past several decades. The most dramatic reductions in Pb emissions occurred before 1990 due to the removal of Pb from gasoline sold for most highway vehicles. Pb emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least partly due to national emissions standards for hazardous air pollutants (USEPA 2014). As a result of phasing out leaded gasoline, metal processing is currently the primary source of Pb emissions. The highest Pb level in the air is generally found near Pb smelters. Other stationary sources include waste incinerators, utilities, and Pb-acid battery manufacturers. Pb can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and cardiovascular system depending on exposure. Pb exposure also affects the oxygen-carrying capacity of the blood. The Pb effects most likely encountered in current populations are neurological in children. Infants and young children are susceptible to Pb exposures, contributing to behavioral problems, learning deficits, and lowered IQ (USEPA 2024e).

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are airborne substances and a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as diesel particulate matter (DPM). More than 90 percent of DPM is less than one micron in diameter (about 1/70th the diameter of a human hair) and thus is a subset of $PM_{2.5}$. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2023a).

TACs are different than criteria pollutants because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health. People exposed to TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems (USEPA 2024f).

Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirmed are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with greater associated exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. The closest sensitive receptors to the Project site are the residential receptors located approximately 750 feet southwest of the site. The CARB's Air Quality and Land Use Handbook: a Community Health Perspective recommends a buffer zone of up to 1,000 feet between various pollutant sources and sensitive receptors.

2.3 Greenhouse Gas

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are usually by-products of fossil fuel combustion, and CH_4 results from off-gassing associated with agricultural practices and landfills.

Human-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6.

Different types of GHGs have varying global warming potential (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (Intergovernmental Panel on Climate Change [IPCC] 2021).[3]

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but climate change is preferred because it conveys that other changes are happening in addition to rising temperatures. The baseline against which these changes are measured originates in historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming over the past 150 years. The IPCC expressed that the rise and continued growth of atmospheric CO_2 concentrations is unequivocally due to human activities in the IPCC's Sixth Assessment Report (2021). Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, a total of 2,390 gigatons of anthropogenic CO_2 was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius between the years 2010 through 2019 (IPCC 2021).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 33 degrees Celsius (°C) cooler (World Meteorological Organization 2023). However, since 1750, estimated concentrations of CO_2, CH_4, and N_2O in the atmosphere have increased by 47 percent, 156 percent, and 23 percent, respectively, primarily due to human activity (IPCC 2021). GHG emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

[3] The Intergovernmental Panel on Climate Change's (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by CARB uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

Greenhouse Gases

Carbon Dioxide

Carbon dioxide (CO_2) is the primary GHG emitted through human activities. In 2020, CO_2 accounted for about 79 percent of all U.S. GHG emissions from human activities. CO_2 is naturally present in the atmosphere as part of the Earth's carbon cycle (the natural circulation of carbon among the atmosphere, oceans, soil, plants, and animals). Human activities are altering the carbon cycle–both by adding more CO_2 to the atmosphere, and by influencing the ability of natural sinks, like forests and soils, to remove and store CO_2 from the atmosphere. While CO_2 emissions come from a variety of natural sources, human-related emissions are responsible for the increase that has occurred in the atmosphere since the industrial revolution (USEPA 2022).

Methane

Methane (CH_4) is a colorless, odorless gas and is the major component of natural gas. In 2020, CH_4 accounted for about 11 percent of all U.S. GHG emissions from human activities. Human activities emitting methane include leaks from natural gas systems and the raising of livestock. CH_4 is also emitted by natural sources such as natural wetlands. In addition, natural processes in soil and chemical reactions in the atmosphere help remove CH_4 from the atmosphere. CH_4's lifetime in the atmosphere is much shorter than carbon dioxide (CO_2), but CH_4 is more efficient at trapping radiation than CO_2. Pound for pound, the comparative impact of CH_4 is 25 times greater than CO_2 over a 100-year period (USEPA 2022).

Nitrous Oxide

Nitrous oxide (N_2O) is a clear, colorless gas with a slightly sweet odor. In 2020, nitrous oxide accounted for about seven percent of all U.S. GHG emissions from human activities. Human activities such as agriculture, fuel combustion, wastewater management, and industrial processes are increasing the amount of N_2O in the atmosphere. Nitrous oxide is also naturally present in the atmosphere as part of the Earth's nitrogen cycle and has a variety of natural sources. Nitrous oxide molecules stay in the atmosphere for an average of 114 years before being removed by a sink or destroyed through chemical reactions. The impact of one pound of N_2O on warming the atmosphere is almost 300 times that of one pound of carbon dioxide (USEPA 2022).

Fluorinated Gases (HFCs, PFCs and SF_6)

Unlike many other GHGs, fluorinated gases have no natural sources and only come from human-related activities. They are emitted through their use as substitutes for ozone-depleting substances (e.g., as refrigerants) and through a variety of industrial processes such as aluminum and semiconductor manufacturing. Many fluorinated gases have very high GWPs relative to other GHGs, so small atmospheric concentrations can have disproportionately large effects on global temperatures. They can also have long atmospheric lifetimes, in some cases, lasting thousands of years. Like other long-lived GHGs, most fluorinated gases are well-mixed in the atmosphere, spreading around the world after they are emitted. Many fluorinated gases are removed from the atmosphere only when they are destroyed by sunlight in the far upper atmosphere. In general, fluorinated gases are the most potent and longest lasting type of GHGs emitted by human activities (USEPA 2022).

The use of SF_6 in electric utility systems and switchgear, including circuit breakers, poses a concern, because this pollutant has an extremely high global warming potential (one pound of SF_6 is the equivalent warming potential of approximately 24,600 pounds of CO_2). SF_6 is inert and non-toxic and is encapsulated in the breaker assembly. SF_6 is a GHG with substantial global warming potential because of its chemical nature and long residency time within the atmosphere. However, under normal conditions, it would be completely contained in the equipment and SF_6 would only be released in the unlikely event of a failure, leak, or crack in the circuit breaker housing. New circuit breaker designs have been developed over the past several years to minimize the potential for leakage, compared to that of past designs. PG&E began the quest to eliminate SF_6 circuit breakers from their systems in approximately 2017, by communicating with manufacturers. New 72 kilovolt (kV) circuit breakers were SF6 free within PG&E's service starting in 2019. In 2022, PG&E began to install 123 kV SF6-free circuit breakers in the San Francisco Bay Area. These efforts are anticipated to reduce approximately 1 million tons of GHG emissions from PG&E operations by 2022 (PG&E 2021).

Greenhouse Gas Emissions Inventory

Global Emissions Inventory

In 2019, worldwide anthropogenic emissions totaled 49,758 billion metric tons (MT) of CO_2e, which is a 53 percent increase from 1990 levels. Specifically, 74.4 percent of CO_2e is from CO_2, 17.3 percent from CH_4, 6.2 percent from N_2O, and 2.1 percent from fluorinated gases were emitted in 2019. The largest source of GHG emissions were energy production and use (including fuels used by vehicles and buildings), which accounted for 73.2 percent of the global GHG emissions. Agriculture uses and industrial processes contributed 18.4 percent and 5.2 percent, respectively. Waste sources contributed to 3.2 percent (Our World in Data 2023).

United States Emissions Inventory

In 2021, total U.S. GHG emissions were 6,347.7 million MT of CO_2e, which is a 2 percent decrease from 1990 levels. Net GHG emissions decreased by 16.3 percent from 2005 to 2021 but increased by 6.8 percent from 2020 to 2021. From 2019 to 2020, there was a sharp decline in emissions largely due to the impacts of the COVID-19 pandemic on travel and other economic activity. Between 2020 and 2021, the increase in total GHG emissions was driven largely by an increase in CO_2 emissions from fossil fuel combustion due to economic activity rebounding after the COVID-19 pandemic. In 2022, the largest source of CO_2, and of overall emissions, was fossil fuel combustion, representing approximately 79.7 percent of U.S. GHG emissions. CH_4 accounted for nearly 11.1 percent, N_2O accounted for approximately 6.1 percent, and the remaining 3.1 percent of U.S. GHG emissions were HFCs, PFCs, SF_6, and NF_3 (USEPA 2024g).

California Emissions Inventory

Based on the California Air Resources Board (CARB) California Greenhouse Gas Inventory for 2000-2022, total California GHG emissions were 371.1 million MT of CO_2e in 2022. This is 9.3 million MT of CO_2e (2.4%) lower than in 2021 (380.4 million MT of CO_2e). The major source of GHG emissions in California is associated with transportation, which contributed nearly 38 percent of statewide GHG emissions in 2022. The industrial sector is the second largest source, contributing 19.6 percent of statewide GHG emissions, and the electricity sector accounted for approximately 16 percent (CARB 2024a). The annual 2030 statewide target emissions level is 260 MMT of CO_2e (CARB 2017a).

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources though potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. The year 2024 was the single warmest year since global records began in 1850 at 1.29°C (2.32°F) above the 20th century average of 13.9°C (57.0°F). This value is 0.10°C (0.18°F) more than the record set in 2023. (National Oceanic and Atmospheric Administration 2024). Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature obtained from station observations jointly indicate that Land Surface Air Temperature and sea surface temperatures have increased. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per decade. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2014 and 2018).

Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years. *California's Fourth Climate Change Assessment* (California Natural Resource Agency 2019) includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally specific climate change case studies. However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. Below is a summary of some of the potential effects that climate change could generate in California.

Air Quality

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century. Higher temperatures are conducive to air pollution formation and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (California Natural Resource Agency 2019). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state. With increasing temperatures, shifting weather patterns, longer dry seasons, and more dry fuel loads, the frequency of large wildfires and area burned is expected to increase (California Natural Resources Agency 2021).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common. For example, the winter of 2022-2023 had severe storms and flooding from increased rainfall and snowmelt, which the California Department of Water

Resources identified as "the latest example that California's climate is becoming more extreme" (California Department of Water Resources 2023). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western United States, including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meters along the central and southern California coasts. The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce total snowpack levels by reducing the amount of snowfall due to increased temperatures. Projections indicate that the average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (California Natural Resource Agency 2019).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (California Natural Resource Agency 2019). Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 1993 to 2022, observed by satellites, is approximately 3.4 millimeters per year, double the twentieth century trend of 1.6 millimeters per year (World Meteorological Organization 2013; National Aeronautics and Space Administration 2023). Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise ranging between 0.25 to 1.01 meters by 2100 with the sea level ranges dependent on a low, intermediate, or high GHG emissions scenario (IPCC 2021). A rise in sea levels, in a recent study using the U.S. Geological Survey Coastal Storm Modeling System, could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure (California Natural Resource Agency 2019). Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has an over $51 billion annual agricultural industry that produces over a third of the country's vegetables and three-quarters of the country's fruits and nuts (California Department of Food and Agriculture 2022). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (California Natural Resource Agency 2019). Temperature increases could also change the time of year certain crops such as wine grapes bloom or ripen and thereby affect their quality (California Climate Change Center 2006).

Ecosystems and Wildlife

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions due to higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; California Natural Resource Agency 2019).

2.4 Regulatory Setting

Air Quality

Federal and State

The federal Clean Air Act (CAA) and the California Clean Air Act (CCAA) establish ambient air quality standards and establish regulatory authorities designed to attain those standards. As required by the CAA, the United States Environmental Protection Agency (USEPA) has identified criteria pollutants and has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb.

Under the CCAA, California has adopted the California Ambient Air Quality Standards (CAAQS), which are more stringent than the NAAQS for certain pollutants and averaging periods. Table 2 presents the current attainment status for each regulated pollutant and the federal and state standards for regulated pollutants. California also has established state ambient air quality standards for sulfates, hydrogen sulfide, and vinyl chloride.

As required by the federal CAA and the CCAA, air basins or portions thereof have been classified as either “attainment” or “nonattainment” for each criteria air pollutant, based on whether the standards have been achieved. The air quality in an attainment area meets or is better than the NAAQS or CAAQS. A non-attainment area has air quality that is worse than the NAAQS or CAAQS. States are required to adopt enforceable plans, known as a State Implementation Plan (SIP), to achieve and maintain air quality meeting the NAAQS.

The YSAQMD is the designated air quality control agency for the SVAB and subsequently the Project. The SVAB currently meets the NAAQS for all criteria air pollutants except ozone and $PM_{2.5}$. PM_{10} attainment status is currently designated as unclassifiable due to insufficient monitoring data and a lack of conclusive information to determine compliance with NAAQS. The SVAB is currently classified as a nonattainment area under the CAAQS for ozone and PM_{10} (YSAQMD 2024a). Characteristics of ozone, CO, NO_2, and suspended particulates are described in the subsequent sections.

Table 2 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard: Concentration	California Standard: SVAB Attainment Status	National Standard: Concentration	National Standard: SVAB Attainment Status
Ozone	8-Hour 1-Hour	0.070 ppm 0.090 ppm	Nonattainment	0.070 ppm -	Nonattainment
Carbon Monoxide (CO)	1-Hour 8-Hour	9.0 ppm 20 ppm	Attainment	9.0 ppm 35 ppm	Attainment/ Unclassified
Nitrogen Dioxide (NO_2)	1-Hour Annual	0.180 ppm 0.030 ppm	Attainment	0.100 ppm 0.053 ppm	Attainment
Sulfur Dioxide (SO_2)	1-Hour 3-Hour 24-Hour Annual	0.25 ppm - 0.04 ppm -	Attainment	0.075 ppm 0.5 ppm* 0.14 ppm 0.03 ppm	Attainment
Respirable Particulate Matter (PM_{10})	24-Hour Annual	50 mg/m^3 20 mg/m^3	Nonattainment	150 mg/m^3 -	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	-	Unclassified	35 mg/m^3	Nonattainment
	Annual	12 mg/m^3	Unclassified	9 mg/m^3	Attainment
Lead (Pb)	30-Day Quarterly	1.5 mg/m^3 -	Attainment	- 1.5 mg/m^3	Attainment

ppm = parts per million; ppb = parts per billion; µg/m3 = micrograms per cubic meter

Source: YSAQMD 2024a, USEPA 2024h

Existing Ambient Air Quality

The YSAQMD monitors ambient air quality to protect public health and comply with federal and state requirements. YSAQMD's monitoring network provides real-time data that allows the YSAQMD to forecast air quality and issues advisories to the public as needed. The monitoring network also allows the YSAQMD to show progress toward air quality standards. There are six permanent monitoring sites within Yolo-Solano. The nearest monitoring station to the Project is the Vacaville-Ulatis Drive monitoring station, at 2012 Ulatis Drive in the City of Vacaville, approximately 3.1 miles southwest of the Project. This monitoring station measures only ozone. PM_{10} measurements near the Project site were obtained from the Vacaville-Merchant Street monitoring station, located at 650 Merchant Street in Vacaville, approximately 4.9 miles southwest of the Project. The closest monitoring station for NO_2 and $PM_{2.5}$ data is the Vallejo-304 Tuolumne Street monitoring station, located at 304 Tuolumne Street in Vallejo, approximately 27 miles southwest of the Project.

Table 3 indicates the number of days each federal and state standard was exceeded at these stations for their respective pollutants for the most recent three years for which data is available. As shown therein, $PM_{2.5}$ measurements exceeded standards in 2023. No other state or federal standards were exceeded at these monitoring stations. Since CO and SO_2 are in attainment with the SVAB region, they are not monitored at any of the six air monitoring stations. Therefore, ambient air quality is not reported for these pollutants.

Table 3 Ambient Air Quality at the Nearest Monitoring Station, 2022-2024

Pollutant	2022	2023	2024
Ozone (ppm), 8-Hr Average[1]	0.068	0.069	0.064
Number of Days of state exceedances (>0.070 ppm)	0	0	0
Number of days of federal exceedances (>0.070 ppm)	0	0	0
Ozone (ppm), Worst Hour[1]	0.086	0.075	0.070
Number of days of state exceedances (>0.09 ppm)	0	0	0
Number of days of federal exceedances (>0.112 ppm)	0	0	0
Nitrogen Dioxide (ppm), Worst Hour[2]	26.8	22.5	25.0
Number of days of state exceedances (>0.18 ppm)	0	0	0
Number of days of federal exceedances (>0.10 ppm)	0	0	0
Particulate Matter 10 microns, mg/m^3, Worst 24 Hours[3]	35	38	26
Number of days of state exceedances (>50 mg/m3)	0	0	0
Number of days above federal standard (>150 mg/m3)	0	0	0
Particulate Matter <2.5 microns, mg/m^3, Worst 24 Hours[2]	31	36	13
Number of days above federal standard (>35 mg/m^3)	0	1	0

[1] Measurements taken from the Vacaville-Ulatis Drive Station.

[2] Measurements taken from the Vallejo-304 Tuolumne Street Station.

[3] Measurements taken from the 650 Merchant Street Station in Vacaville.

Source: CARB 2024b

California Code of Regulations

The California Code of Regulations, Title 20, Division 2, Chapter 5, Article 6, Section B, Appendix B includes the following air quality regulations which are potentially applicable to the Project:

(8) Air Quality

(G) The ambient concentrations of all criteria pollutants for the previous three years as measured at the three Air Resources Board certified monitoring stations located closest to the project site, and an analysis of whether this data is representative of conditions at the project site. The applicant may substitute an explanation as to why information from one, two, or all stations is either not available or unnecessary.

(H) One year of meteorological data collected from either the Federal Aviation Administration Class 1 station nearest to the project or from the project site, or meteorological data approved by the California Air Resources Board or the local air pollution district.

(i) If the data is collected from the project site, the applicant shall demonstrate compliance with the requirements of the U.S. Environmental Protection Agency document entitled "On-Site Meteorological Program Guidance for Regulatory Modeling Applications" (EPA - 450/4-87-013 (August 1995)), which is incorporated by reference in its entirety.

(ii) The data shall include quarterly wind tables and wind roses, ambient temperatures, relative humidity, stability and mixing heights, upper atmospheric air data, and an analysis of whether this data is representative of conditions at the project site.

(I) An evaluation of the project's direct and cumulative air quality impacts, consisting of the following:

(i) A screening level air quality modeling analysis, or a more detailed modeling analysis if so desired by the applicant, of the direct criteria pollutant impacts of project construction activities on ambient air quality conditions, including fugitive dust (PM_{10}) emissions from grading, excavation and site disturbance, as well as the combustion emissions [nitrogen oxides (NO_x), sulfur dioxide (SO_2), carbon monoxide (CO), and particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) from construction-related equipment;

(ii) A screening level air quality modeling analysis, or a more detailed modeling analysis if so desired by the applicant, of the direct criteria pollutant (NO_x, SO_2, CO and PM_{10} and $PM_{2.5}$) impacts on ambient air quality conditions of the project during typical (normal) operation, and during shutdown and startup modes of operation. Identify and include in the modeling of each operating mode the estimated maximum emissions rates and the assumed meteorological conditions; and

(iii) A protocol for a cumulative air quality modeling impacts analysis of the project's typical operating mode in combination with other stationary emissions sources within a six mile radius which have received construction permits but are not yet operational, or are in the permitting process. The cumulative inert pollutant impact analysis should assess whether estimated emissions concentrations will cause or contribute to a violation of any ambient air quality standard.

(iv) an air dispersion modeling analyses of the impacts of the initial commissioning phase emissions on state and federal ambient air quality standards for NO_x, SO_2, CO and PM_{10} and $PM_{2.5}$.

(K) A detailed description of the mitigation, if any, which an applicant may propose, for all project impacts from criteria pollutants that currently exceed state or federal ambient air quality standards, but are not subject to offset requirements under the district's new source review rule.

Regional

Air Quality Management Plans

Ozone levels in the YSAQMD are in the healthy range on most days. However, ozone and its precursors can travel across district boundaries and emissions created within YSAQMD may affect neighboring communities, especially in the greater Sacramento region. As such, the YSAQMD is included in the Sacramento Federal Nonattainment Area (SFNA) by the U.S. Environmental Protection Agency (USEPA).

2015 NAAQS 8-hr O_3 Attainment Plan

In August 2023, the YSAQMD adopted the 2015 NAAQS 8-hr Ozone Attainment & Reasonable Further Progress Plan for Attaining the National Ambient Air Quality Standards for Ozone in the Sacramento Region (2015 O_3 Attainment Plan) (YSAQMD 2020a and 2020b). This 2015 8-hour Ozone NAAQS Plan was developed for the Sacramento region by the five air districts in the nonattainment area in collaboration with the CARB, the Sacramento Regional Area Council of Governments (SACOG), and the Bay Area Metropolitan Transportation Commission (MTC). The five local air districts include: El Dorado County Air Quality Management District, Feather River Air Quality Management District, Placer County

Air Pollution Control District, Sacramento Metropolitan Air Quality Management District, and YSAQMD. SACOG and MTC are the metropolitan planning organizations (MPO) for transportation planning in the SFNA. At this time, the 2015 O_3 Attainment Plan has been submitted to CARB for review, and if approved, will be submitted to the U.S. EPA as a revision to the California State Implementation Plan (SIP) for attaining the NAAQS for ozone. The 2015 O_3 Attainment Plan includes regionwide inventories of ozone precursors, a Reasonable Further Progress demonstration that shows emissions reductions during the years leading to attainment, an assessment of Reasonably Available Control Technology and Reasonable Available Control Measures, a vehicle mile traveled (VMT) offset demonstration, and contingency measures for use in the event that emissions controls do not achieve the needed reductions. The 2015 O_3 Attainment Plan determines (1) the Sacramento Region can expect to reach attainment of the current NAAQS for ozone by 2033 with implementation of the proposed control measures and (2) the adoption of transportation control strategies and transportation control measures (TCMs) in the Sacramento Region offset the projected growth in VMT and vehicle trips (YSAQMD 2023, YSAQMD 2024b).

SFNA Exceptional Events Mitigation Plan

The SFNA has been identified by the United States Environmental Protection Agency (EPA) as an area that is required to develop a mitigation plan to minimize the public exposure from $PM_{2.5}$ emissions generated during wildfire events. Air districts in the SFNA-$PM_{2.5}$ (the Federal $PM_{2.5}$ Nonattainment Area) have jointly prepared the draft Wildfire Mitigation Plan (Plan) as required by Title 40, Code of Federal Regulations, Part 51.930 (40 CFR 51.930). This Plan outlines the actions each air district will take to notify the public and minimize the air quality impacts when emissions from wildfires increase $PM_{2.5}$ concentrations in the region to a level where they exceed or are expected to exceed the 24-hour $PM_{2.5}$ national ambient air quality standard. While achieving the 24-hour national standard for fine particulates is the primary focus for the Sacramento Region, the EPA has also adopted an annual standard for fine particulates. This standard was tightened in 2012, but the YSAQMD and the rest of the Sacramento Region are consistently below it. (YSAQMD 2024c).

YSAQMD Rules

The YSAQMD implements rules and regulations for emissions that may be generated by various uses and activities. The rules and regulations detail pollution-reduction measures that must be implemented during construction and operation of projects. Rules and regulations relevant to the Project include the following:

Rule 2.3 (Ringelmann Chart): The purpose of this rule is to limit the emissions of visible air contaminants to the atmosphere.

Rule 2.5 (Nuisance): A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause to have a natural tendency to cause injury or damage to business or property.

Rule 2.11 (Particulate Matter Concentration): The purpose of this rule is to protect the ambient air quality by establishing a particulate matter emission standard.

Rule 2.14 (Architectural Coatings): To limit the quantity of volatile organic compounds (VOC) in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the YSAQMD. This rule establishes VOC content limits for a variety of architectural coatings, including 50 grams per liter for flat coatings, 100 grams per liter for nonflat and traffic marking coatings, and 150 grams per liter for nonflat-high gloss coatings.

Rule 2.28 (Cutbacks and Emulsified Asphalt Paving Material): Cutback and emulsified asphalt application shall be conducted in accordance with YSAQMD Rule 2.28.

PERP. Portable equipment greater than 50 horsepower, other than vehicles, must be registered with either the CARB Portable Equipment Registration Program (PERP)

Local

VACAVILLE GENERAL PLAN

The Vacaville General Plan was adopted in 2015 and lists several air quality and climate change policies in their Conservation and Open Space Element. The following policies are applicable to the Project (City of Vacaville 2015).

Goal COS-10: Promote a Sustainable Energy Supply.

COS-P10.2: Encourage the development of energy generated by renewable fuel sources within the city, provided that significant adverse environmental impacts associated with such development can be successfully mitigated.

Goal COS-12: Maintain and Improve Air Quality.

COS-P12.5: Require that development projects implement best management practices and Best Available Control Technologies to reduce air pollutant emissions associated with the construction and operation of the project.

SOLANO COUNTY GENERAL PLAN

Solano County's General Plan, updated in 2015, lists several air quality and climate change policies as part of its Public Health and Safety Element. The following policies are applicable to the Project (Solano County 2015):

HS.P-43: Support land use, transportation management, infrastructure and environmental planning programs that reduce vehicle emissions and improve air quality.

HS.P-44: Minimize health impacts from sources of toxic air contaminants, both stationary (e.g., refineries, manufacturing plants) as well as mobile sources (e.g., freeways, rail yards, commercial trucking operations).

HS.P-45: Promote consistency and cooperation in air quality planning efforts.

HS.P-46: Coordinate with and provide incentives to agricultural producers to minimize the impacts of operations on air quality.

HS.P-47: Promote GHG emission reductions by supporting carbon efficient farming methods (e.g., methane capture systems, no-till farming, crop rotation, cover cropping, residue farming); installation of renewable energy technologies; protection of grasslands, open space, and farmlands from conversion to other uses; and encouraging development of energy-efficient structures.

HS.P-53: Evaluate the potential effects of climate change on Solano County's human and natural systems and prepare strategies that allow the County to appropriately respond and adapt.

2.5 Greenhouse Gas

Federal Regulations

Federal Clean Air Act

The U.S. Supreme Court determined in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) that the USEPA has the authority to regulate motor vehicle GHG emissions under the federal CAA. The USEPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the USEPA issued a Final Rule that established the GHG permitting thresholds that determine when CAA permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agency* (134 Supreme Court 2427 [2014]), the U.S. Supreme Court held the USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits otherwise required based on emissions of other pollutants may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

State Regulations

CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

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

The "California Global Warming Solutions Act of 2006," (AB 32), outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 million metric tons (MMT of CO_2e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan's approval.

The CARB approved the 2013 Scoping Plan update in May 2014. The update defined the CARB's climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the state's longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100. The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six metric tons (MT) of CO_2e by 2030 and two MT of CO_2e by 2050 (CARB 2017a). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state.

Assembly Bill 1279

AB 1279, "The California Climate Crisis Act," was passed on September 16, 2022, and declares the State will achieve net zero GHG emissions as soon as possible, but no later than 2045, and will achieve and maintain net negative GHG emissions thereafter. In addition, the bill states that the State would reduce GHG emissions by 85 percent below 1990 levels no later than 2045.

In response to the passage of AB 1279 and the identification of the 2045 GHG reduction target, CARB published the Final 2022 Climate Change Scoping Plan in November 2022 (CARB 2022). The 2022 Update builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying new, technologically feasible, cost-effective, and equity-focused paths to achieve California's climate target. The 2022 update includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands (NWL) to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 update assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan; addresses recent legislation and direction from Governor Newsom; extends and expands upon these earlier plans; implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045; and takes an additional step of adding carbon neutrality as a science-based guide for California's climate work. As stated in the 2022 update, "The plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the state's NWL and using a variety of mechanical approaches" (CARB 2022). Specifically, the 2022 update includes the following:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs

- Integrates equity and protection for California's most impacted communities as driving principles throughout the document
- Incorporates the contribution of NWL to the State's GHG emissions, as well as their role in achieving carbon neutrality
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture
- Evaluates the substantial health and economic benefits of taking action
- Identifies key implementation actions to ensure success

In addition to reducing emissions from transportation, energy, and industrial sectors, the 2022 update includes emissions and carbon sequestration in NWL and explores how NWL contributes to long-term climate goals. Under the Scoping Plan Scenario, California's 2030 emissions are anticipated to be 48 percent below 1990 levels, representing an acceleration of the current SB 32 target. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the accelerated 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet our GHG reduction goals and achieve carbon neutrality no later than 2045. The 2022 update approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPO) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline California Environmental Quality Act (CEQA) processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Sacramento Area Council of Governments (SACOG) is the regional planning agency for Yolo-Solano County and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. The SACOG Board of Directors adopted the final MTP with a SCS on November 18, 2019. The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the Sacramento region proactively links land use, air quality, and transportation needs. The legislation requires Metropolitan Planning Organizations (MPO) to prepare a SCS as part of their RTPs, along with the traditional policy, action, and financial requirements. The SCS lays out how the region will meet greenhouse gas (GHG) reduction targets set by the California Air Resources Board (CARB). CARB's targets call for the region to reduce per capita emissions seven percent by 2020 and 13 percent by 2035 from a 2005 baseline.

Senate Bill 1383

Adopted in September 2016, SB 1383 (Lara, Chapter 395, Statutes of 2016) requires the CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. SB 1383 requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

SB 1383 also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with the CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard (RPS) Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, former Governor Brown issued Executive Order (EO) B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to other statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

Executive Order N-79-20

On September 23, 2020, Governor Newsom issued EO N-79-20, which established the following new statewide goals:

- All new passenger cars and trucks sold in-state to be zero-emission by 2035.
- All medium- and heavy-duty vehicles in the state to be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks.
- All off-road vehicles and equipment to be zero-emission by 2035 where feasible.

EO N-79-20 directs CARB, the Governor's Office of Business and Economic Development, the California Energy Commission, the California Department of Transportation, and other State agencies to take steps toward drafting regulations and strategies and leveraging agency resources toward achieving these goals.

Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill 1020)

Adopted on September 16, 2022, SB 1020 creates clean electricity targets for eligible renewable energy resources and zero-carbon resources to supply 90 percent of retail sale electricity by 2035, 95 percent by 2040, 100 percent by 2045, and 100 percent of electricity procured to serve all State agencies by 2035. This bill shall not increase carbon emissions elsewhere in the western grid and shall not allow resource shuffling.

17 California Code of Regulations Section 95350 et seq.

In 2010, CARB adopted the *Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear* (Section 17 CCR Section 95350 et seq.). The purpose of this regulation is to achieve GHG emission reductions by reducing SF_6 emissions from gas-insulated switchgear. Owners of such switchgear must not exceed maximum allowable annual emissions rates, reduced each year until 2020, after which annual emissions must not exceed 1.0 percent. Owners must regularly inventory gas-insulated switchgear equipment, measure quantities of SF_6, and maintain records of these for at least three years. Additionally, by June 1 each year, owners also must submit an annual report to CARB's Executive Officer for emissions that occurred during the previous calendar year.

In December 2021, CARB adopted amendments to the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear, to update the phase out of SF_6 in gas-insulated switchgear. The new phase out schedule begins in January 2025 with all switchgear needing to be SF_6 free by January 2033. Under this resolution, CARB has developed a timeline for phasing out SF_6 equipment in California and created incentives to encourage owners to replace SF_6 equipment. The California Office of Administrative Law approved this rulemaking in December 2021 and the Resolution went into effect January 1, 2022.

Local Regulations

Vacaville General Plan

Vacaville's General Plan, updated in 2015, lists several air quality and climate protection policies as part of its Conservation and Open Space Element The policies applicable to the Project are detailed in Section 2.4.1 Air Quality above (City of Vacaville 2015).

Solano County Climate Action Plan (CAP)

The County of Solano (County) has developed a Climate Action Plan (CAP) to address climate change and reduce the community's greenhouse gas (GHG) emissions at the local level. The County established a communitywide GHG emissions reduction goal of 20 percent below 2005 levels by 2020 within the CAP. According to the CAP, it is possible for the County to achieve and surpass this target, resulting in a GHG emissions level of approximately 709,270 MT CO_2e in 2020, or a reduction of 206,880 MT CO_2e below 2020 business-as-usual projections. To achieve this goal, the CAP recommends measures and actions that the County can take to reduce emissions, in collaboration with other institutions. The CAP addresses both municipal and communitywide emissions for the unincorporated County (Solano County 2015).

Solano County's General Plan

Solano County's General Plan, updated in 2015, lists several air quality and climate protection policies as part of its Public Health and Safety Element. The policies applicable to the Project are detailed in section 2.4.1 Air Quality above (Solano County 2015).

3 Impact Analysis

3.1 Methodology

Criteria pollutant and GHG emissions for construction and operation with consideration of the two proposed project BESS facilities were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The input data and subsequent construction and operation emission estimates for the Project are summarized below and detailed in Appendix A. CalEEMod output files for the Project are included in Appendix B.

Construction Emissions

Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and haul trips. CalEEMod estimates construction emissions by multiplying the amount of time equipment is in use by emission factors.

Construction of the Project was analyzed based on the applicant-provided construction schedule, equipment list, and construction related vehicle trips. The schedule was modeled by construction activity to best capture the construction that would occur. Construction is anticipated to begin in July 2027 with construction ending in second quarter of 2029. Construction is anticipated to occur Monday through Saturday with equipment operating up to 12 hours per day. CalEEMod defaults for horsepower and load factors were used. Haul trips were modeled as heavy-duty truck (HHDT) trips and assumed the default one-way distance of 20 miles used for haul trucks.

The Project would be split up into two Project BESS components, the Vaca Dixon BESS facilities and the Arges BESS facilities. Each of the Project BESS components has individual construction phases, which are:

- Access Road
- Site Preparation
- Grading
- Installation of Foundations and Equipment
- Set Modules, Inverters, and Switchgear
- Electrical Wire Installation/Finish Grading
- Commissioning & Testing

Construction of the Vaca Dixon BESS would require approximately 16,000 cubic yards (cy) of imported material, including approximately 400 cy of asphalt, 1,200 cy of aggregate, 900 cy of yard rock, 11,700 cy of structural fill, and 1,900 cy of drainage stone, while approximately 3,640 cy of excess topsoil would be exported from the site. Construction of the Arges BESS would require approximately 34,500 cy of imported material, consisting of 600 cy of asphalt, 1,900 cy of aggregate, 1,500 cy of yard rock, 29,700 cy of structural fill, and 800 cy of drainage stone, while approximately 3,900 cy of excess topsoil would be exported from the site. The electrical wire installation phase for each BESS component would require the use of one light-duty helicopter for approximately two hours total on one day during installation of the 13.8 kV wire as well as the 115 kV wire. This analysis assumes that the Project would comply with all applicable regulatory standards. In particular, the Project would comply with YSAQMD rules to control fugitive dust emissions from construction activities. This is modeled within CalEEMod by assuming that watering would occur twice a day. Detailed assumptions are included in Appendix A.

Operational Emissions

In CalEEMod, operational sources of criteria pollutant and greenhouse gas emissions include area, energy, and mobile sources. The first full year of operation was assumed to be 2029 based on the provided construction schedule and completion of both BESS components of the project.[4] The facilities were modeled as refrigerated warehouse, with 36,711 square feet for the Vaca Dixon BESS and 65,718 square feet for the Arges BESS.[5] The refrigerated warehouse land use was used to account for the energy requirements for maintaining a stable temperature for optimum battery effectiveness. Water consumption is assumed for landscaping purposes. The project site would include approximately 24,000 square feet of landscaped area. No solid waste generation is anticipated and no other water emissions sources are associated with the Project since it would be typically unmanned and would require only limited maintenance equipment.[6] The facilities would require periodic maintenance visits where one or two workers would perform routine maintenance on the facilities twice a week. The trip rate was adjusted to reflect 416 annual trips per year (or two trips per week).

Augmentation involving addition of batteries to compensate for degraded battery output would be required. It is anticipated that modules would need to be added every 2-5 years for upgrades or augmentation. It is assumed that these operational activities would be similar to construction activities for the “Set Modules, Inverters, and Switchgear” phases, so the emissions calculated for this phase of construction has been conservatively applied to this operational activity.

During operation and maintenance of the Arges BESS, one of the main sources of GHG emissions would be refrigerants for battery cooling and fugitive emissions from equipment containing SF_6 gas installed at the switchyard. Circuit breakers contain SF_6; however, new circuit breaker designs have been developed over the past several years to minimize the potential for leakage, compared to that of past designs (CARB 2020). In addition, the equipment would comply with CARB’s Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear regulations (CARB 2025). The Project would maintain a total of 100 pounds (lbs.) of SF_6 gas during operation. Although leakage is unlikely, for the purposes of the Project’s emissions inventory, it was assumed that the breakers would have a maximum annual leak rate of 0.5 percent in accordance with the Institute of Electrical and Electronics (IEEE) (IEEE 2018). Assuming SF_6 leakage would not exceed 0.5 percent annually, total maximum annual SF_6 leakage would be up to 0.5 lbs. (<0.01 metric ton [MT]). The GWP of SF_6 is 24,600, therefore the 0.5 lbs. per year of annual leakage would result in annual emissions of approximately 6 MT CO_2e. Although CARB has enacted a phase-out schedule for SF_6 (pursuant to Section 17 CCR Section 95350 et seq.), this analysis conservatively assumes that switchgear would utilize SF_6 throughout the lifetime of the project.

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[4] Interim year operational emissions are quantified and provided below, assuming that the Vaca Dixon BESS begins operation after its construction completes, before the completion of the Arges BESS construction.

[5] The square footages were estimated using Google Earth and Project site plans.

[6] Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products. With respect to this project, area sources refer to consumer products (such as aerosol cleaners), and architectural coating (maintenance re-coating activities for battery storage).

Project Decommissioning

At the end of the Projects' useful life (anticipated to be 35 years or more), the BESS facilities would be decommissioned. Activities required for deconstruction of the on-site facilities would require similar types and levels of equipment to those used during the construction phase. Equipment is likely to have lower emissions due to cleaner equipment fleets available at the time of decommissioning. Therefore, decommissioning was not modeled separately and is conservatively assumed to be consistent with construction emissions estimates.

Ambient Air Quality Analysis

A localized ambient air quality analysis (AAQA) following the YSAQMD's modeling guidance documents was conducted to assess the potential impacts of construction activities. Operational activities are not included in the analysis because there are no anticipated stationary sources of emissions, there would be a very limited number of operational mobile sources, and other building-related emissions are expected to be minimal or indirect (i.e., produced offsite). Any potential operational ambient air quality impacts would be much less in magnitude than those from construction.

Daily and annual emissions burdens were estimated for the duration of the construction period based on provided construction schedule, number of pieces of construction equipment, horsepower rating of construction equipment, utilization of construction equipment, engine exhaust certifications, and construction activities as modeled. Refined air dispersion modeling of the daily emissions was conducted using AMS/EPA Regulatory Model (AERMOD) to show the Project's maximum localized impacts from pollutants are below the ambient air quality standards. Emissions in AERMOD were set to 1 gram per second (g/sec) and emissions were scaled in a stand-alone spreadsheet to account for actual project emissions. The exception was for NO_2 modeling, which implemented AERMOD's Tier 2 NO_X/NO_2 conversion algorithms; actual project emissions were input into a separate model run. Helicopter emissions were modeled as occurring during all active construction hours, rather than just two hours per day, to provide a conservative estimate of pollutant exposure.

Only the maximum localized pollutant levels related to on-site construction and operational activities were estimated and verified through AERMOD modeling. Emissions from construction equipment and helicopters were modeled as poly-area sources and mobile source trips as line volume sources to simulate construction activities. The highest combined emissions for the Vaca Dixon BESS and Arges BESS were evaluated during the overlapping site preparation and grading phases, as well as the electrical wire installation/finish grading phase, which includes helicopter use. These emissions were used for the AAQA.

To account for the impact of localized pollutants in combination with pollution from other sources, the modeled results were added to the background level as recommended by USEPA. Unique background levels are based on the specific details of the applicable standards and based on nearby air monitoring data. The resulting pollutant concentrations (modeled result and background) were then compared to the applicable NAAQS and CAAQS.

Methodology for Determining Health Risks

Health impacts associated with TACs are generally from long-term exposure. Typical sources of TACs include industrial processes such as petroleum refining operations, commercial operations such as gasoline stations and dry cleaners, and diesel exhaust. Health impacts from TAC emissions during the operational phase of the project could result from the use of on-site diesel equipment during project operation. In addition, the use of large-scale off-road diesel equipment during project construction may result in a short-term increase of TAC emissions. DPM would be the TAC emitted in the largest quantity during construction and is the primary contaminant of concern for the project.

CARB's Air Quality and Land Use Handbook: A Community Health Perspective (April 2005) recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. While these siting distances are not particular to construction activities, the primary source of TAC emissions from both freeways and construction equipment is DPM. Therefore, for projects within 1,000 feet of sensitive receptors a refined health risk assessment would be conducted. The nearest sensitive receptor is approximately 750 feet away. As such, health risks were assessed quantitatively. Dispersion modeling parameters and the receptor grid were consistent with those used for the AAQA.

Generation of DPM from construction projects typically occurs in a single area for a short period of time. Construction of the Project would occur over a period of approximately 2 years. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual (MEI). The risks estimated for an MEI are higher if a fixed exposure occurs over a longer period of time. According to the California Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period. Such assessments should be limited to the period/duration of activities associated with the Project. Thus, the duration of proposed construction activities (i.e., 24 months) is approximately seven percent of the total exposure period used for 30-year health risk calculations.

The Project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these requirements would minimize emissions of TACs during construction.

3.2 Significance Thresholds

The significance criteria used to evaluate the project impacts related to Air Quality and GHG emissions are based on the recommendations provided in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). For the purposes of the GHG analysis, a significant impact would occur if the project would:

1. Conflict with or obstruct implementation of the applicable air quality plan,
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard,
3. Expose sensitive receptors to substantial pollutant concentrations,
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people,
5. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
6. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Air Quality

Appendix G of the *CEQA Guidelines* (14 CCR 15000 et seq.) indicates that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to determine whether a project would have a significant impact on air quality. The YSAQMD recommends the use of quantitative thresholds to determine the significance of temporary construction-related pollutant emissions and long-term operational-related pollutant emissions. These thresholds are shown in Table 4.

Table 4 Project Thresholds

Pollutant	YSAQMD
ROG	10 tons/year
NO_x	10 tons/year
CO	Violate State CO Standard
SO_x	NA
PM_{10}	80 lbs/day
$PM_{2.5}$	NA

Source: YSAQMD 2007

The YSAQMD threshold for toxic air contaminants (TACs) is based on a maximum incremental cancer risk greater than 10 in one million or ground-level concentrations of non-carcinogenic TACs of greater than a hazard index of 1.

Ambient Air Quality Analysis

An AAQA uses air dispersion modeling to determine if emission increases from a project's construction or operational activities would cause or contribute to a violation of the ambient air quality standards. If modeled concentrations combined with background concentrations would result in an exceedance of a NAAQS or CAAQS, as presented in Table 2, then impacts would be significant.

Greenhouse Gas

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (*CEQA Guidelines*, Section 15064[h][1]).

According to *CEQA Guidelines* Section 15183.5, project analysis can tier from a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the Project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (AEP) in their white paper, *Best Practices in Implementing Climate Action Plans*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions (AEP 2018). The City of Vacaville has not adopted a numerical significance threshold for assessing impacts related to GHG emissions. Neither the Governor's Office of Land Use and Climate Innovation (formerly known as the

Governor's Office of Planning and Research), CARB, California Air Pollution Control Officers Association (CAPCOA), nor any other State or applicable regional agency has adopted a numerical significance threshold for assessing GHG emissions that is applicable to the Project. Therefore, impact significance for the Project would be based on consistency with CARB's 2022 Scoping Plan Update.

3.3 Project-Level Air Quality Project Impacts

Threshold 1:	Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Impact AQ-1 THE PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLANS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Pursuant to the federal CAA, the YSAQMD is required to reduce emissions of criteria pollutants for which the SVAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the 2015 NAAQS 8-hour O_3 Attainment Plan and SFNA Exceptional Events Mitigation Plan for the region. Consistency with these plans is determined by analyzing a project's consistency with the assumptions in the plans. Thus, the emphasis of this discussion is to evaluate if the Project's land uses would be consistent with or less intensive than the emission forecasts for the defined project area contained in the plans. The growth forecasts used in the plans are developed by SACOG. SACOG forecasts are based on local general plans and other related documents that are used to develop population, employment, and traffic projections. The emissions inventory forecasts in the plans are based on the growth forecasts from the 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy MTS/SCS.

Operation of the Project would not result in a substantial increase in employment and would only require two weekly trips by two existing employees to the site. This would not induce population growth. Therefore, the project would not increase the population of or the employment inventory, either directly or indirectly, and the project would not exceed the forecasts utilized in air quality plans. Furthermore, as detailed below under Threshold 2, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the SVAB is in nonattainment under an applicable federal or state ambient air quality standard. In addition, the project would comply with all existing and new rules and regulations as they are implemented by the YSAQMD, CARB, and/or the U.S. EPA related to emissions generated during construction. Therefore, the project would not conflict with or obstruct implementation of the 2015 NAAQS 8-hour O_3 Attainment Plan and SFNA Exceptional Events Mitigation Plan, and impacts would be less than significant.

Threshold 2:	Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Impact AQ-2 THE PROJECT WOULD NOT 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. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed under Section 2.3, *Air Quality Regulation*, criteria pollutants include ozone, carbon monoxide, nitrogen dioxide, PM_{10}, $PM_{2.5}$, sulfur dioxide, and lead. The SVAB is designated nonattainment for the NAAQS and CAAQS for ozone and the CAAQS for PM_{10}, and NAAQS for $PM_{2.5}$. The SVAB is designated unclassifiable or in attainment for all other federal and state standards.

Construction and Decommissioning Emissions

Project construction would generate air pollutant emissions from on-site equipment, entrained dust, off-road equipment uses, and vehicle emissions. Off-site emissions would be generated by construction worker daily commute trips and heavy-duty diesel haul truck trips. Construction of various phases would occur concurrent with the completion of some phases and subsequent to the initiation of others. Decommissioning emissions would be similar to or slightly less than the construction activities. All decommissioning activities would adhere to the requirements of the appropriate governing authorities and be conducted in accordance with all applicable federal, state, and county regulations.

Construction of Vaca Dixon BESS

Construction of the Vaca Dixon BESS is anticipated to begin in July 2027 and require approximately 12 months of construction activity. The specific construction equipment required to complete the Vaca Dixon BESS is provided in Appendix A. Estimated construction emissions are provided in Table 5, below.

Table 5 Estimated Vaca Dixon BESS Construction Emissions

	Project Construction Emissions					
Year	ROG (tons/yr)	NO_X (tons/yr)	CO (tons/yr)	SO_x (tons/yr)	PM_{10} (lbs./day)	$PM_{2.5}$ (lbs/day)
Vaca Dixon BESS						
2027	0.04	0.39	1.2	< 0.005	48	6.2
2028	0.02	0.17	0.5	< 0.005	22	2.3
Maximum Emissions Construction	**0.04**	**0.39**	**1.20**	**< 0.005**	**48**	**6.2**
YSAQMD Screening Threshold	10	10	–	–	80	–
Exceed Threshold?	No	No	–	–	No	–

lbs./day = pounds per day; tons/yr = tons per year; ROG = reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide; YSAQMD = Yolo-Solano Air Quality Management District.

Source: Appendix A.

Construction of Arges BESS

Construction of the Arges BESS is anticipated to begin in June of 2028 and require approximately 12 months of construction activity. It is expected that the construction periods for Vaca Dixon BESS and Arges BESS would not overlap. The specific construction equipment required to complete the Arges BESS is provided in Appendix A. Estimated construction emissions are provided in Table 6, below.

Table 6 Estimated Arges BESS Construction Emissions

Year	Project Construction Emissions ROG (tons/yr)	NO_x (tons/yr)	CO (tons/yr)	SO_x (tons/yr)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Arges BESS						
2028	0.04	0.51	1.29	< 0.005	53.3	6.80
2029	0.02	0.16	0.43	< 0.005	22.1	2.37
Maximum Emissions Construction	**0.05**	**0.51**	**1.29**	**< 0.005**	**53.3**	**6.80**
YSAQMD Screening Threshold	10	10	–	–	80	–
Exceed Threshold?	No	No	–	–	No	–

lbs./day = pounds per day; tons/yr = tons per year; ROG = reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide; YSAQMD = Yolo-Solano Air Quality Management District.

Source: Appendix A.

Decommissioning

The decommissioning of the Project is anticipated to require similar or fewer pieces of equipment, vehicles, and construction-related activities compared to initial construction. As a result, air quality emissions during decommissioning are expected to be similar or lower than those presented in Table 5 and Table 6.

Ambient Air Quality Analysis (AAQA)

An AAQA was performed in accordance with CCR Title 20, Division 2, Chapter 5, Article 6, Section B, Appendix B, (8)(I)(i) following the methodology as described above. The project's air quality impacts were determined using the AERMOD model and compared to the corresponding ambient air quality standard. The AAQA analyzed the overlapping site preparation and grading phases for the Vaca Dixon BESS and Arges BESS, as well as the electrical wire installation and finish grading phase for the Vaca Dixon BESS and Arges BESS, which includes helicopter use. Table 7 presents the maximum daily criteria pollutant emissions resulting from these construction activities. As shown, unmitigated project construction would not exceed the regional NAAQS or CAAQS ambient concentrations for construction during construction of the Vaca Dixon BESS or Arges BESS components of the Project. The AAQA demonstrates that project construction emissions of criteria pollutants would not exceed the ambient air quality standards.

Decommissioning emissions have been assumed to be the same as construction emissions; however, it is likely that decommissioning emissions would be lower than construction emissions due to the reduced earthwork required and cleaner equipment available during decommissioning period in the future. Therefore, the decommissioning emissions would not exceed ambient air quality standards.

Table 7 Maximum Project Construction (and Decommissioning) Ambient Air Quality Impact Assessment

Pollutant	Averaging Period	Background (ug/m³)	Project (ug/m³)	Project + Background (ug/m³)	AAQS (ug/m³)	Exceed?
NO_2	1Hr - NAAQS	46.6	49	96	188	No
	1Hr - CAAQS	46.6	74	121	339	No
	Annual - NAAQS	6.6	2.5	9.1	100	No
	Annual - CAAQS	6.6	2.5	9.1	57	No
CO	1Hr - NAAQS	7,065	552	7,616	40,000	No
	1Hr - CAAQS	7,065	552	7,616	23,000	No
	8Hr - NAAQS	3,170	120	3,290	10,000	No
	8Hr - CAAQS	3,170	120	3,290	10,000	No
PM_{10}	24Hr - NAAQS	33.0	7.2	40.3	150	No
	24Hr - CAAQS	33.0	9.0	42.1	50	No
	Annual - CAAQS	12.0	1.9	13.9	20	No
$PM_{2.5}$	24Hr - NAAQS	26.7	1.2	27.9	35	No
	Annual – NAAQS[1]	7.8	0.7	8.4	9	No
	Annual – CAAQS[1]	7.8	0.7	8.4	12	No
SO_2	1Hr - NAAQS	162.0	7.0	169	196	No
	1Hr - CAAQS	162.0	7.0	169	655	No

Notes:

NO_2 = nitrogen dioxide, CO = carbon monoxide, SO_2 = sulfur dioxide, NAAQS = National Ambient Air Quality Standard, CAAQS = California Ambient Air Quality Standard, ug/m³ = micrograms per meter cubed.

[1] Due to insufficient monitoring data for calendar year 2024, the background concentration is based on available data from 2021 through 2023, the most recent three years of complete data.

Operational Emissions

Long-term emissions associated with operation of the Project would be primarily generated by twice per week O&M visits. The Project would occasionally need battery upgrades or augmentation. Emissions from this activity would be similar to the "Set Modules, Inverters, and Switchgear" construction phase. As a surrogate for battery augmentation and upgrades, daily emissions from this construction activity were added to the operational emissions as a conservative estimate of operational emissions.[7] Annual emissions are based on 20 days, or approximately one third of the initial construction schedule for each site. Operations of the Project would result in negligible long-term emissions from vehicle trips, area source emissions[8], and periodic re-coating of battery storage, as shown in Table 8.

As shown in Table 8, new operational emissions would not exceed applicable thresholds for criteria pollutants; therefore, Project operation would not violate any air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net

[7] It is conservatively assumed that these operational activities are occurring for both project components on the same day, even though they were constructed separately (and those emissions are being used as the basis).

[8] Area source emissions are associated with emissions of consumer products used for cleaning and landscaping emissions, And are conservatively included for this analysis.

increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard. Impacts would be less than significant.

Table 8 Estimated Operational Emissions

	Project Operational Emissions					
Source	ROG (tons/yr)	NO_X (tons/yr)	CO (tons/yr)	SO_x (tons/yr)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Vaca Dixon BESS						
Mobile	< 0.1	< 0.1	<0.01	< 0.1	0.18	< 0.1
Area	0.18	< 0.1	0.14	< 0.1	< 0.1	< 0.1
Energy	< 0.1	0.01	0.01	< 0.1	< 0.1	< 0.1
Battery Ops & Upgrades	< 0.1	<0.1	0.02	<0.1	18.64	1.93
Arges BESS						
Mobile	< 0.1	< 0.1	< 0.1	< 0.1	0.18	< 0.1
Area	0.32	< 0.1	0.26	< 0.1	<0.1	< 0.1
Energy	< 0.1	0.02	0.01	< 0.1	0.1	0.1
Battery Ops & Upgrades	< 0.1	<0.1	0.03	<0.1	17.41	1.81
Total	**0.5**	**0.03**	**0.51**	**<0.1**	**36.43**	**3.79**
YSAQMD Screening Threshold	10	10	–	–	80	–
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

lbs./day = pounds per day; tons/yr = tons per year; ROG = reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide; YSAQMD = Yolo-Solano Air Quality Management District.

Source: See Appendix A.

Furthermore, energy storage systems, such as the proposed BESS, assist utilities like PG&E in achieving criteria air pollutant emission reductions by providing the means of storing excess electricity (e.g., renewable solar energy) generated during off-peak hours for use during peak hours as an alternative to operating resources such as the VDPP, which generates air quality emissions from fossil fuel combustion.[9] By expanding PG&E's and end user's access to energy storage systems, the Project would be expected to increase the stability and reliability of the existing electrical grid, thereby reducing the need for additional electricity to be generated by fossil fuel power plants during peak hours. The energy conservation achieved by the Project would reduce fossil fuel consumption, thereby reducing criteria air pollutant emissions from the electricity sector. Impacts would be less than significant.

Overlapping Construction and Operational Emissions

Operation of the Vaca Dixon BESS is anticipated to begin before the construction of Arges BESS commences. Based on the information provided in Table 9, any potential overlapping construction and operational activities would be less than significant. Also, Battery Ops & Upgrades operational activities would not occur until after completion of construction of the Arges BESS components.

[9] Peaker plants are power plants that are operated only when demand for electricity is high (i.e., during times of peak demand). The Vaca-Dixon peaker plant is powered by natural gas.

Table 9 Estimated Overlapping Emissions

	Project Emissions					
Source	ROG (tons/yr)	NO_X (tons/yr)	CO (tons/yr)	SO_x (tons/yr)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Maximum Vaca Dixon BESS Operations	0.18	0.01	0.17	0	0.18	0.02
Maximum Arges BESS Construction	0.04	0.51	1.29	0	53.30	6.80
Total	0.22	0.52	1.46	0	53.5	6.8
YSAQMD Screening Threshold	10	10	–	–	80	–
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

lbs./day = pounds per day; tons/yr = tons per year; ROG = reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide; YSAQMD = Yolo-Solano Air Quality Management District.

Note: Battery Ops & Upgrades assumed not to overlap with Arges BESS construction activities.

Source: See Appendix A.

Threshold 3:	Would the Project expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations?

Impact AQ-3 THE PROJECT WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS RELATED TO CARBON MONOXIDE HOTSPOTS OR TACS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Carbon Monoxide Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal one-hour standard of 35.0 parts per million (ppm) or the federal and state eight-hour standard of 9.0 ppm (CARB 2016).

The entire SVAB is in conformance with the CAAQS and NAAQS for carbon monoxide, and most air quality monitoring stations no longer report carbon monoxide levels. The highest source of carbon monoxide exposure occurs during construction. As shown in Table 6, maximum daily carbon monoxide emissions during construction of the Arges BESS would be approximately 1.29 tons per year during . These emissions would not exceed CAAQS or NAAQS standards, as demonstrated in Table 7. Operational emissions of CO would be less than one ton per year, as shows in Table 8, and would also not result in an exceedance of the CAAQS or NAAQS standards. The Project would not create new hotspots or contribute substantially to existing hotspots. Therefore, the Project would not expose sensitive receptors to substantial carbon monoxide concentrations.

Toxic Air Contaminants

Health impacts associated with TACs are generally associated with long-term exposure. Due to the minimal emissions expected on-site from routine maintenance and off-site from employees commuting to the defined project area each day, there are no meaningful sources of TACs for the operating phase of the Project and therefore no reason to expect health impacts related to TACs. As such, the greatest potential for TAC emissions would be during construction and decommissioning which may result in a short-term increase of TAC emissions.

Construction and Decommissioning

The greatest potential for TAC emissions during construction and decommissioning would be from heavy equipment operations that generate DPM emissions. Generation of DPM from construction projects typically occurs in a single area for a short period. Construction of the Project would require approximately 24 months between 2027 and 2029. As cancer risk is a long-term analysis, impacts from the Arges and Vaca Dixon BESS components are analyzed together.

Generation of DPM from construction/decommissioning typically occurs in a single area for a short period. The dose to which the receptors are exposed is the primary factor used to determine health risk as listed under the Methodology for Determining Health Risks section of this Study. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a more extended period. According to the OEHHA, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period. However, such assessments should be limited to the period/duration of activities associated with the Project. Decommissioning emissions are thus excluded from the quantitative HRA, as they would occur outside of the health risk exposure period, would occur at a much later date, and would be with anticipated much cleaner construction equipment.

The Project would be consistent with the applicable YSAQMD requirements and control strategies intended to reduce emissions from construction equipment and activities. The Project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation. Compliance with these would minimize emissions of TACs during construction. Sensitive receptors are located directly west and south of the defined Project area across the bordering roadways and therefore have the potential to be exposed to TAC emissions from construction.

The maximum daily PM_{10} emissions would range from less than 0.04 to 0.09 lbs/day of exhaust (DPM), with the maximum emissions occurring during the overlapping site preparation and grading activities for the Arges BESS. These activities would last for approximately 146 days. PM emissions would decrease for the remaining construction period because construction activities such as building construction and paving would require less intensive construction equipment. While the maximum DPM emissions associated with site preparation and grading activities would only occur for a portion of the overall construction period, these activities represent the worst-case condition for the total construction period. This would represent less than one percent of the total 30-year exposure period for health risk calculation.

The estimated construction health risk is quantified in Table 10. As shown in the table, potential health risk would be below YSAQMD significance thresholds. Therefore, Project construction would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant.

Table 10 Construction Health Risk Assessment

Scenario	Excess Cancer Risk (per million)	Chronic Health Risk[1, 2]
Residences Risk	1.75	0.0015
YSAQMD Significance Threshold	>10	>1
Threshold Exceeded?	No	No

[1] Noncancer health impacts are determined by dividing the airborne concentration at the receptor by the appropriate Reference Exposure Level (REL) for that substance. A REL is defined as the concentration at which no adverse noncancer health effects are anticipated. Because noncancer health impacts are assessed as the ratio of airborne concentration versus the REL, the resulting hazard index is unitless.

[2] There is no acute reference exposure level for diesel exhaust to calculate acute health risk. Furthermore, except for unusual circumstances of high exposure, Office of Environmental Health Hazard Assessment does not recommend acute analysis for DPM.

Source: Rincon Consultants 2025. For health risk calculations, see Appendix A.

Threshold 4:	Would the Project create objectionable odors affecting a substantial number of people?

Impact AQ-4 THE PROJECT WOULD NOT GENERATE ODORS ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE DURING CONSTRUCTION OR OPERATION. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The State of California Health and Safety Code Sections 41700 and 41705 YSAQMD Rule 2.5 prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. An unreasonable odor discernible at the property line of the defined project area would be considered a significant odor impact. The Project would generate oil and diesel fuel odors during construction from equipment use as well as odors related to asphalt paving. The odors would be limited to the construction period and would be intermittent and temporary. Furthermore, these odors would dissipate rapidly with distance from in-use construction equipment. With respect to operation, CARB's Air Quality and Land Use Handbook: A Community Health Perspective (2005) provides recommendations regarding the siting of new sensitive land uses near potential sources of odors (e.g., sewage treatment plants, landfills, recycling facilities, biomass operations, autobody shops, fiberglass manufacturing, and livestock operations). BESS site operations are not identified on this list and would not have odor sources during normal operations. Therefore, the Project would not generate objectionable odors affecting a substantial number of people, and impacts would be less than significant.

3.4 Cumulative Air Quality Impacts

The geographic scope for the cumulative air quality impact analysis is the SVAB. Because the SVAB is designated nonattainment for the NAAQS and CAAQS for ozone and the CAAQS for PM_{10} and NAAQS for $PM_{2.5}$, there is an existing adverse cumulative effect in the SVAB relative to these pollutants.

A project would have a significant cumulative impact if it is inconsistent with the applicable adopted federal and state air quality plans. As discussed under Impact AQ-2, the Project would be consistent with the YSAQMD screening thresholds. Additionally, as discussed above under Impact AQ-1, the Project would not conflict with or obstruct implementation of the 2015 NAAQS 8-hour O_3 Attainment Plan and SFNA Exceptional Events Mitigation Plan. Therefore, the project's contribution to cumulative air quality impacts related to criteria air pollutant emissions would be less than significant.

As discussed under Impact AQ-3, operation-related traffic is not anticipated to create a CO hotspot. Construction and decommissioning would be short-term and not result in a health risk impact, and there are negligible operational vehicle trips. Therefore, the Project's contribution to cumulative impacts to sensitive receptors related to CO hotspots would be less than significant.

3.5 Project-Level Greenhouse Gas Project Impacts

Threshold 1:	Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
Threshold 2:	Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact GHG-1 CONSTRUCTION, OPERATION AND DECOMMISSIONING OF THE PROJECT WOULD DIRECTLY AND INDIRECTLY GENERATE GHG EMISSIONS. HOWEVER, THE PROJECT WOULD BE CONSISTENT WITH APPLICABLE PLANS, POLICIES, AND REGULATIONS ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Emissions Quantifications

Construction and Decommissioning Emissions

Project-related construction emissions are confined to a relatively short period in relation to the overall life of the project. Construction-related GHG emissions were quantified for informational purposes. Emissions were amortized over the lifetime of the Project (i.e., 35 years). It is assumed that decommissioning GHG emissions would be similar to construction GHG emissions. However, decommissioning emissions would be lower than construction emissions due to the reduced earthwork required and cleaner equipment available during decommissioning of the BESS. Table 11 shows that Project construction would result in a total of approximately 997 MT CO_2e and amortized GHG emissions of 28 MT CO_2e.

Table 11 Estimated Construction GHG Emissions

Construction Year	Project Emissions (MT CO_2e)
Vaca Dixon BESS	
2027	313
2028	138
Arges BESS	
2028	421
2029	125
Total	**997**
Amortized (35 years)	**28**

MT of CO_2e = metric tons of carbon dioxide equivalent. Numbers may not add up due to rounding

Source: Appendix A.

Operational Emissions

The Project would generate GHG emissions during operation from minimal area source, energy consumption and mobile emissions[10]. Operation-related GHG emissions were quantified using conservative assumptions for informational purposes and are shown in Table 12. As shown, the Project would generate approximately 842 MT of CO_2e per year, including the amortized construction and decommissioning emissions.

The Project would help address the limitations of the electric grid and the increasing demand for renewable energy by increasing storage capability which improves the reliability of the grid and makes it more resilient to disturbances and peaks in energy demand. As the use of renewable energy increases, the need for battery storage to maintain electrical supply during both peak demand and when the renewable systems are not generating electricity also increases. It is anticipated that the reduction in GHG emissions from non-renewable electricity generating facilities would more than offset the annual GHG emissions anticipated from the Project. Therefore, the Project is anticipated to result in a net benefit with respect to GHG emissions generation.

Table 12 Annual Project GHG Emissions

Emission Source	Annual Emissions (MT CO_2e)
Vaca Dixon BESS	
Mobile	1.6
Area	0.6
Energy	96.9
Water	14.5
Waste	0
Refrigerant	162
Battery Augmentation and Upgrades	7.5
Subtotal Vaca Dixon BESS	283
Arges BESS	
Mobile	1.46
Area	0.98
Energy	171
Water	25.5
Waste	0
Refrigerant.	290
SF_6	6
Battery Augmentation and Upgrades	13.7
Subtotal Arges BESS	503
Total	**786**
Amortized Construction	28
Amortized Decommissioning	28
Total Annual Project Emissions	**842**

SF_6 = Sulphur hexafluoride; MT of CO_2e = metric tons of carbon dioxide equivalent. Numbers may not add up due to rounding.

Source: See Appendix A.

[10] Area sources for this project refer to consumer products (such as aerosol cleaners), and architectural coating (maintenance re-coating activities for battery storage).

2022 Scoping Plan

The principal state GHG reduction plans and policies are AB 32, the California Global Warming Solutions Act of 2006, and the subsequent legislation, SB 32 and AB 1279. The goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. In 2022, the State passed AB 1279, which declares the State would achieve net-zero GHG emissions by 2045 and would reduce GHG emissions by 85 percent below 1990 levels by 2045. The latest iteration of the Scoping Plan is the 2022 Scoping Plan, which focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the state's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities. The 2022 Scoping Plan's strategies that apply to the Project include the following:

- Reducing fossil fuel use, energy demand and vehicle miles traveled (VMT);
- Building decarbonization; and
- Maximizing recycling and diversion from landfills

The Project would be consistent with these goals through the expected reduction of fossil fuel use by the implementation of the BESS storage facility that would store electrical energy for additional grid support during peak demand. In addition, the proposed building structures would not incorporate natural gas or propane, and the majority of the electrical needs would be offset by the Project's operations and electrical production. The Project would be served by and work with PG&E to provide additional renewable energy through the BESS system installed onsite and would supplement PG&E's requirement to increase its renewable energy procurement in accordance with SB 100 targets. An energy storage facility is used to reduce GHG emissions associated with gas- and coal-fired power generation facilities by storing energy during off-peak hours (lower energy usage/demand times) and dispatching this energy on an as-needed basis during peak demand hours. This technology reduces the amount of fossil fuels consumed during peak hours and maximizes usage of energy from renewable sources such as wind and solar facilities that may not be able to produce energy during times of peak demand. Therefore, the Project would not conflict with the 2022 Scoping Plan and GHG impacts would be less than significant.

3.6 Greenhouse Gas Cumulative Impacts

The geographic scope for related projects considered in the cumulative impact analysis for GHG emissions is global because impacts of climate change are experienced on a global scale regardless of the location of GHG emission sources. Therefore, GHG emissions and climate change are, by definition, cumulative impacts. Thus, the issue of climate change involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. As discussed under Impact GHG-1, Project impacts related to GHG emissions would be less than significant since the Project would be consistent with the state plans for reducing GHG emissions. Therefore, the Project's contribution to cumulative GHG impacts would be less than significant and the Project would have a potential net benefit in the long term.

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Appendix A

Assumptions and Calculations

POI Address: 5221 Quinn Road, Vacaville, CA 95688

Constrution Schedule:
Vaca Dixon BESS
Arges BESS

Estimated Start Date:

Vaca Dixon BESS

Construction Schedule (either list start and end dates or number of days per phase)			Date
Access Road	Start Date	*4-weeks*	7/1/2027
	End Date		7/29/2027
Site Preparation	Start Date	*12-weeks*	7/30/2027
	End Date		10/22/2027
Grading	Start Date	*Part of site prep.*	7/30/2027
	End Date		10/22/2027
Installation of Foundations & Equipment	Start Date	*8-weeks*	10/23/2027
	End Date		12/18/2027
Set Modules, Inverters, & Switchgear	Start Date	*8-weeks*	12/19/2027
	End Date		2/13/2028
Electrical Wire Installation/Finish Grading	Start Date	*8-weeks*	2/14/2028
	End Date		4/10/2028
Commissioning & Testing	Start Date	*12-weeks*	4/11/2028
	End Date		7/4/2028

Arges BESS

Access Road	Start Date	*4-weeks*	6/1/2028
	End Date		6/29/2028
Site Preparation	Start Date	*12-weeks*	6/30/2028
	End Date		9/22/2028
Grading	Start Date	*Part of site prep.*	6/30/2028
	End Date		9/22/2028
Installation of Foundations & Equipment	Start Date	*8-weeks*	9/23/2028
	End Date		11/18/2028
Set Modules, Inverters, & Switchgear	Start Date	*8-weeks*	11/19/2028
	End Date		1/14/2029
Electrical Wire Installation/Finish Grading	Start Date	*8-weeks*	1/15/2029
	End Date		3/12/2029
Commissioning & Testing	Start Date	*12-weeks*	3/13/2029
	End Date		6/5/2029

	Vaca Dixon BESS	Arges BESS
Annual Trips (assumed)	**416**	**416**
Annual VMT (assumed)	**4160**	**4160**

**No soild waste generation

Vaca Dixon BESS Assumptions

Limits of Disturbance = ~ 5 acres

Single unmanned one-story control structure of approximately 1,000 square feet

1. Construction Schedule (approximate start date – approximate end date)

__________July 1, 2027_______________________to _____July 1, 2028________________________

Construction Schedule (either list start and end dates or number of days per phase)			# of work days
Access Road	Start Date: End Date:	*4-weeks*	25
Site Preparation	Start Date: End Date:	*12-weeks*	73
Grading	Start Date: End Date:	*Part of site prep.*	73
Installation of Foundations & Equipment	Start Date: End Date:	*8-weeks*	49
Set Modules, Inverters, & Switchgear	Start Date: End Date:	*8-weeks*	48
Electrical Wire Installation/Finish Grading	Start Date: End Date:	*8-weeks*	49
Commissioning & Testing	Start Date: End Date:	*12-weeks*	73

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Start Time	7	7	7	7	7	7	-
End time	7	7	7	7	7	7	-
Work Hours:	12	12	12	12	12	12	

Grading Information	
Total cubic yards (CY) of excavated (cut) soil	*0*
Total CY of cut soil that will be used as fill	*0*
Total CY of soil imported from off-site sources	*15,910*
Total CY of soil exported	*3,640*
Total CYs of fill needed	*0*
Total CYs of fill to be imported	*0*
Total CYs of aggregate to be imported	*0*
Total Import (CY)	***0***
Haul truck capacities (default value: 16 CY)	*16*
Total Import + Export Trips	*1,222*

Total One-Way Trips Per Day	***25 on average***
Haul truck destination (C&D landfills)	*yes*

Equipment	Access Road	Site Preparation	Grading	Install Foundations & Equipment	Set Modules, Inverters & Switchgear	Elec. Wire Install/Finish Grading	Commissioning/Testing
subtotal:	5	5	5	2	1	6	0
Aerial Lifts							
Backhoes		2					
Bore/Drill Rigs				1			
Cement and Mortar Mixers				1			
Concrete/Industrial Saws		1					
Compactors	1		1				
Compressors							
Cranes					1		
Crawler Tractors							
Crushing/Processing Equipment							
Dozers	1		1			1	
Dumpers/Tenders			1				
Excavators		1					
Forklifts							
Generators							
Graders			1				
Helicopter						1	
Loaders, Front End			1				
Loaders, Rubber Tired							
Off-Highway Tractors							
Off-Highway Trucks							
Pavers	1						
Paving Equipment	1						
Pressure Washers							
Pumps							
Rollers	1						
Rough Terrain Forklifts							
Scraper							
Signal Boards							
Skid Steer Loaders							
Surfacing Equipment							

Sweepers/Scrubbers		1				1	
Tractors						1	
Trenchers						1	
Welders						1	
Worker Trips (RT)	40	40	40	40	40	40	40
Vendor Trips (RT)	10	10	10	10	10	10	10
Truck Trips (one-way)	**25**	**12.7**	**12.7**	**10**	**10**	**10**	**2**

For the peak time of construction activity:

- How long will peak construction time last (months)? ------- 9-months
- Daily number of employees onsite: 40-50
- Daily number of vehicles onsite: 40

- Water exposed areas? How many times daily:
  - 2: x

- Unpaved road moisture content? <11%

- Unpaved road vehicle speed limit? 15 mph

- Other BMPs? silt fence, construction entrance, temporary seeding, designated soil stockpile, concrete washout facility, storm drain inlet protection

Percentage Paved Roads	
Approximate Site Diameter (miles)	0.13
Worker Trip Length (miles)	11.7
% Pave Worker	98%
Vendor Trip Length (miles)	8.4
% Pave Vendor	97%
Haul Trip Length (miles)	20
% Pave Haul	99%

Arges BESS Assumptions

Limits of Disturbance = ~ 5 acres

Single unmanned one-story control structure of approximately 1,000 square feet

BESS sq ft estimate for building construction using Google Earth and most recent site plans.

1. Construction Schedule (approximate start date – approximate end date)

_____June 1, 2028____________________to _____June 1, 2029______________________________

Construction Schedule (either list start and end dates or number of days per phase)			# of work days
Access Road	Start Date: End Date:	*4-weeks*	25
Site Preparation	Start Date: End Date:	*12-weeks*	73
Grading	Start Date: End Date:	*Part of site prep.*	73
Installation of Foundations & Equipment	Start Date: End Date:	*8-weeks*	49
Set Modules, Inverters, & Switchgear	Start Date: End Date:	*8-weeks*	48
Electrical Wire Installation/Finish Grading	Start Date: End Date:	*8-weeks*	49
Commissioning & Testing	Start Date: End Date:	*12-weeks*	73

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Start Time	7	7	7	7	7	7	-
End time	7	7	7	7	7	7	-
Work Hours:	12	12	12	12	12	12	

Grading Information	
Total cubic yards (CY) of excavated (cut) soil	*0*
Total CY of cut soil that will be used as fill	*0*
Total CY of soil imported from off-site sources	*34,505*
Total CY of soil exported	*3,880*
Total CYs of fill needed	*0*
Total CYs of fill to be imported	*0*
Total CYs of aggregate to be imported	*0*
Total Import	***0***

Haul truck capacities (default value: 16 CY)	*16*
Total Import + Export Trips	*2,400*
Total One-Way Trips Per Day	***50 on average***
Haul truck destination (C&D landfills)	*yes*

subtotal:	5	5	5	2	1	6	0
Equipment	**Access Road**	**Site Preparation**	**Grading**	**Install Foundations & Equipment**	**Set Modules, Inverters & Switchgear**	**Elec. Wire Install/Finish Grading**	**Commissioning/Testing**
Aerial Lifts							
Backhoes		2					
Bore/Drill Rigs				1			
Cement and Mortar Mixers				1			
Concrete/Industrial Saws		1					
Compactors	1		1				
Compressors							
Cranes					1		
Crawler Tractors							
Crushing/Processing Equipment							
Dozers	1		1			1	
Dumpers/Tenders			1				
Excavators		1					
Forklifts							
Generators							
Graders			1				
Helicopter						1	
Loaders, Front End			1				
Loaders, Rubber Tired							
Off-Highway Tractors							
Off-Highway Trucks							
Pavers	1						
Paving Equipment	1						
Pressure Washers							
Pumps							
Rollers	1						

Rough Terrain Forklifts							
Scraper							
Signal Boards							
Skid Steer Loaders							
Surfacing Equipment							
Sweepers/Scrubbers		1				1	
Tractors						1	
Trenchers						1	
Welders						1	
Worker Trips (RT)	40	40	40	40	40	40	40
Vendor Trips (RT)	10	10	10	10	10	10	10
Haul Truck Trips (one way)	**50**	**25**	**25**	**15**	**15**	**15**	**4**

For the peak time of construction activity:

- How long will peak construction time last (months)? 9-months
- Daily number of employees onsite: 50-60
- Daily number of vehicles onsite: 50

- Water exposed areas? How many times daily:
  - 2: x

- Unpaved road moisture content? <11%

- Unpaved road vehicle speed limit? 15 mph

- Other BMPs? silt fence, construction entrance, temporary seeding, designated soil stockpile, concrete washout facility, storm drain inlet protection

Percentage Paved Roads	
Site Diameter (miles)	0.1
Worker Trip Length (miles)	11.7
% Pave Worker	98.29%
Vendor Trip Length (miles)	8.4
% Pave Vendor	97.62%
Haul Trip Length (miles)	20
% Pave Haul	99.0%

Helicopter Emissions

Helicopter Type and Usage

Type	Engine	HP	Fuel Consumption (gallons/hr)
Bell 407/MD530F (Light Duty)	Alison 250-C20B	420	28
Source: Fuel Consumption is obtained from the U.S. Department of Interior National Business Center (2006)			

Helicopter Emission Factors

Helicopter Emission Factor		lbs/hr					lbs/gallon
Type	HC	NOx	CO	SOx	PM10	PM2.5	CO2
Bell 407/MD530F (Light Duty)	0.08	1.75	2.07	0.14	0.1	0.1	18.355

Source: Emission factors for HC, NOx, CO, and SOx were obtained from the California Public Utilities Commission (2007); PM10 emission factors were obtained from the CPUC (2006); and CO2 emission factor for aviation gasoline was obtained from the U.S. Department of Energy (2008).

Note: Emission factors for Bell 407/MD530F were derived from the emission factors for Bell 206 Jet Ranger (Alison 250-C20 Turboshaft 420 hp engine). Emission factors for take-off mode were used.

Helicopter Usage Schedule

Phase	Type	Hours per Day	Number of Helicopters
Vaca Dixon BESS			
Access Road	Bell 407/MD530F (Light Duty)	-	-
Site Preparation	Bell 407/MD530F (Light Duty)	-	-
Grading	Bell 407/MD530F (Light Duty)	-	-
Installation of Foundations & Equipment	Bell 407/MD530F (Light Duty)	-	-
Set Modules, Inverters, & Switchgear	Bell 407/MD530F (Light Duty)	-	-
Electrical Wire Installation/Finish Grading	Bell 407/MD530F (Light Duty)	2	1
Commissioning & Testing	Bell 407/MD530F (Light Duty)	-	-
Arges BESS			
Access Road	Bell 407/MD530F (Light Duty)	-	-
Site Preparation	Bell 407/MD530F (Light Duty)	-	-
Grading	Bell 407/MD530F (Light Duty)	-	-
Installation of Foundations & Equipment	Bell 407/MD530F (Light Duty)	-	-
Set Modules, Inverters, & Switchgear	Bell 407/MD530F (Light Duty)	-	-
Electrical Wire Installation/Finish Grading	Bell 407/MD530F (Light Duty)	2	1
Commissioning & Testing	Bell 407/MD530F (Light Duty)	-	-

Helicopter Emissions - Maximum Daily

Phase	Type	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
					lbs per day			
Vaca Dixon BESS								
Access Road	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Site Preparation	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Grading	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Installation of Foundations & Equipment	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Set Modules, Inverters, & Switchgear	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Electrical Wire Installation/Finish Grading	Bell 407/MD530F (Light Duty)	0.16	3.50	4.14	0.28	0.20	0.20	36.71
Commissioning & Testing	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Arges BESS								
Access Road	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Site Preparation	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Grading	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Installation of Foundations & Equipment	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Set Modules, Inverters, & Switchgear	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-
Electrical Wire Installation/Finish Grading	Bell 407/MD530F (Light Duty)	0.16	3.50	4.14	0.28	0.20	0.20	36.71
Commissioning & Testing	Bell 407/MD530F (Light Duty)	-	-	-	-	-	-	-

Arges BESS
SF_6 Emissions Quantifications

SF_C Emissions Quantification

0.50%	*SF_C leakage percentage per year1*
100	*lbs/ Arges BESS project*
0.5	*SF_C max lbs leakage per year*
0.000454	*lbs/MT*
0.000227	*SF_C max MT leakage per year*
24,600	*GWP*
6	*Max MT CO_2 e/year*

1 IEEE (Institute of Electrical and Electronics Engineers). 2018. PC37.122 – Standard for High Voltage GasInsulated Substations Rated Above 52 kV. March 8, 2018. https://standards.ieee.org/project/C37_122.html

Appendix B

CalEEMod Output Files

Vaca Dixon BESS Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vaca Dixon BESS
Construction Start Date	1/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.7
Precipitation (days)	35
Location	5221 Quinn Rd, Vacaville, CA 95688, USA
County	Solano-Sacramento
City	Unincorporated
Air District	Yolo/Solano AQMD
Air Basin	Sacramento Valley
TAZ	837
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.35

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
Refrigerated Warehouse-No Rail	37	1000sqft	3.3	36,771	11,865	—	—	—

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.	0.85	0.77	7.5	25	0.05	0.13	48	48	0.13	6.0	6.2	—	6,380	6,380	0.18	0.39	6.6	6,508
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.83	0.74	7.8	24	0.05	0.13	48	48	0.13	6.0	6.2	—	6,316	6,316	0.18	0.40	0.17	6,438
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.24	0.21	2.1	6.6	0.01	0.04	14	14	0.04	1.7	1.8	—	1,851	1,851	0.05	0.13	0.93	1,891
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04	0.04	0.39	1.2	< 0.005	0.01	2.5	2.5	0.01	0.32	0.32	—	307	307	0.01	0.02	0.15	313

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.85	0.77	7.5	25	0.05	0.13	48	48	0.13	6.0	6.2	—	6,380	6,380	0.18	0.39	6.6	6,508

2028	0.42	0.40	4.7	14	0.03	0.06	22	22	0.06	2.3	2.3	—	3,467	3,467	0.11	0.16	2.7	3,518
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.83	0.74	7.8	24	0.05	0.13	48	48	0.13	6.0	6.2	—	6,316	6,316	0.18	0.40	0.17	6,438
2028	0.41	0.39	4.8	14	0.03	0.06	22	22	0.06	2.3	2.3	—	3,435	3,435	0.11	0.17	0.07	3,487
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.24	0.21	2.1	6.6	0.01	0.04	14	14	0.04	1.7	1.8	—	1,851	1,851	0.05	0.13	0.93	1,891
2028	0.11	0.10	0.92	2.7	0.01	0.01	8.0	8.1	0.01	0.83	0.85	—	817	817	0.02	0.05	0.43	834
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.04	0.04	0.39	1.2	< 0.005	0.01	2.5	2.5	0.01	0.32	0.32	—	307	307	0.01	0.02	0.15	313
2028	0.02	0.02	0.17	0.50	< 0.005	< 0.005	1.5	1.5	< 0.005	0.15	0.15	—	135	135	< 0.005	0.01	0.07	138

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.	1.1	1.1	0.07	1.7	< 0.005	0.01	0.18	0.18	0.01	0.02	0.02	16	593	609	1.8	0.05	980	1,648
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.86	0.85	0.05	0.08	< 0.005	< 0.005	0.18	0.18	< 0.005	0.02	0.02	16	585	602	1.8	0.05	980	1,641
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.00	0.98	0.06	0.87	< 0.005	0.01	0.16	0.17	< 0.005	0.02	0.02	16	589	605	1.8	0.05	980	1,644
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.18	0.01	0.16	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	2.7	97	100	0.29	0.01	162	272

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	< 0.005	0.04	< 0.005	< 0.005	0.18	0.18	< 0.005	0.02	0.02	—	9.8	9.8	< 0.005	< 0.005	0.03	10
Area	1.1	1.1	0.01	1.6	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.6	6.6	< 0.005	< 0.005	—	6.6
Energy	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	561	561	0.09	0.01	—	566
Water	—	—	—	—	—	—	—	—	—	—	—	16	15	31	1.7	0.04	—	85
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	980	980
Total	1.1	1.1	0.07	1.7	< 0.005	0.01	0.18	0.18	0.01	0.02	0.02	16	593	609	1.8	0.05	980	1,648
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	< 0.005	0.01	0.04	< 0.005	< 0.005	0.18	0.18	< 0.005	0.02	0.02	—	9.1	9.1	< 0.005	< 0.005	< 0.005	9.3
Area	0.85	0.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	561	561	0.09	0.01	—	566
Water	—	—	—	—	—	—	—	—	—	—	—	16	15	31	1.7	0.04	—	85
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	980	980
Total	0.86	0.85	0.05	0.08	< 0.005	< 0.005	0.18	0.18	< 0.005	0.02	0.02	16	585	602	1.8	0.05	980	1,641
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	< 0.005	0.01	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.3	9.3	< 0.005	< 0.005	0.01	9.4
Area	0.99	0.97	0.01	0.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.2	3.2	< 0.005	< 0.005	—	3.3
Energy	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	561	561	0.09	0.01	—	566
Water	—	—	—	—	—	—	—	—	—	—	—	16	15	31	1.7	0.04	—	85
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	980	980
Total	1.00	0.98	0.06	0.87	< 0.005	0.01	0.16	0.17	< 0.005	0.02	0.02	16	589	605	1.8	0.05	980	1,644
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	1.5	1.5	< 0.005	< 0.005	< 0.005	1.6
Area	0.18	0.18	< 0.005	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.54
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	93	93	0.01	< 0.005	—	94
Water	—	—	—	—	—	—	—	—	—	—	—	2.7	2.5	5.2	0.28	0.01	—	14
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	162	162
Total	0.18	0.18	0.01	0.16	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	2.7	97	100	0.29	0.01	162	272

3. Construction Emissions Details

3.1. Site Preparation (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.14	2.9	8.0	0.01	0.02	—	0.02	0.02	—	0.02	—	1,138	1,138	0.05	0.01	—	1,142
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.3	8.3	< 0.005	< 0.005	0.01	8.7

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.14	2.9	8.0	0.01	0.02	—	0.02	0.02	—	0.02	—	1,138	1,138	0.05	0.01	—	1,142
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.4	8.4	< 0.005	< 0.005	< 0.005	8.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.58	1.6	<0.005	<0.005	—	<0.005	< 0.005	—	< 0.005	—	228	228	0.01	< 0.005	—	228
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	<0.005	< 0.005	< 0.005	<0.005	<0.005	< 0.005	0.13	0.13	<0.005	0.01	0.01	—	1.7	1.7	< 0.005	< 0.005	< 0.005	1.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.29	<0.005	<0.005	—	<0.005	< 0.005	—	< 0.005	—	38	38	< 0.005	< 0.005	—	38
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.29
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.09	1.5	0.00	0.00	14	14	0.00	1.5	1.5	—	346	346	0.01	0.01	1.1	352
Vendor	0.02	0.01	0.30	0.14	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	264	264	< 0.005	0.04	0.60	275
Hauling	0.03	0.02	0.98	0.24	0.01	0.02	4.0	4.0	0.02	0.44	0.45	—	836	836	0.01	0.13	1.6	877
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.11	1.2	0.00	0.00	14	14	0.00	1.5	1.5	—	313	313	0.01	0.01	0.03	318
Vendor	0.01	0.01	0.33	0.15	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	264	264	< 0.005	0.04	0.02	275
Hauling	0.03	0.02	1.1	0.24	0.01	0.02	4.0	4.0	0.02	0.44	0.45	—	836	836	0.01	0.13	0.04	876
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.24	0.00	0.00	2.6	2.6	0.00	0.26	0.26	—	64	64	< 0.005	< 0.005	0.10	65
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.68	0.69	< 0.005	0.07	0.07	—	53	53	< 0.005	0.01	0.05	55
Hauling	0.01	< 0.005	0.21	0.05	< 0.005	< 0.005	0.72	0.73	< 0.005	0.08	0.08	—	167	167	< 0.005	0.03	0.14	175
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.47	0.47	0.00	0.05	0.05	—	11	11	< 0.005	< 0.005	0.02	11
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.12	0.13	< 0.005	0.01	0.01	—	8.7	8.7	< 0.005	< 0.005	0.01	9.1
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.02	—	28	28	< 0.005	< 0.005	0.02	29

3.3. Commissioning & Testing (2028) - Unmitigated

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

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

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.08	1.4	0.00	0.00	14	14	0.00	1.5	1.5	—	340	340	0.01	< 0.005	1.0	342
Vendor	0.01	0.01	0.29	0.14	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	257	257	< 0.005	0.03	0.53	268
Hauling	< 0.005	< 0.005	0.15	0.04	< 0.005	< 0.005	0.63	0.63	< 0.005	0.07	0.07	—	128	128	< 0.005	0.02	0.23	134
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.02	0.02	0.23	0.00	0.00	2.6	2.6	0.00	0.26	0.26	—	63	63	< 0.005	< 0.005	0.09	64
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.68	0.69	< 0.005	0.07	0.07	—	51	51	< 0.005	0.01	0.05	54
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	26	26	< 0.005	< 0.005	0.02	27
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.47	0.47	0.00	0.05	0.05	—	10	10	< 0.005	< 0.005	0.01	11
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.12	0.13	< 0.005	0.01	0.01	—	8.5	8.5	< 0.005	< 0.005	0.01	8.9
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	4.2	4.2	< 0.005	< 0.005	< 0.005	4.4

3.5. Grading (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.30	1.8	13	0.02	0.07	—	0.07	0.07	—	0.07	—	2,334	2,334	0.09	0.02	—	2,342
Dust From Material Movement	—	—	—	—	—	—	2.8	2.8	—	1.3	1.3	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.3	8.3	< 0.005	< 0.005	0.01	8.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.30	1.8	13	0.02	0.07	—	0.07	0.07	—	0.07	—	2,334	2,334	0.09	0.02	—	2,342

Dust From Material Movement	—	—	—	—	—	—	2.8	2.8	—	1.3	1.3	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.4	8.4	< 0.005	< 0.005	< 0.005	8.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	0.36	2.6	< 0.005	0.01	—	0.01	0.01	—	0.01	—	467	467	0.02	< 0.005	—	468
Dust From Material Movement	—	—	—	—	—	—	0.55	0.55	—	0.27	0.27	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	1.7	1.7	< 0.005	< 0.005	< 0.005	1.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.48	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	77	77	< 0.005	< 0.005	—	78
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.29
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.09	1.5	0.00	0.00	14	14	0.00	1.5	1.5	—	346	346	0.01	0.01	1.1	352
Vendor	0.02	0.01	0.30	0.14	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	264	264	< 0.005	0.04	0.60	275
Hauling	0.03	0.02	0.98	0.24	0.01	0.02	4.0	4.0	0.02	0.44	0.45	—	836	836	0.01	0.13	1.6	877

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.11	1.2	0.00	0.00	14	14	0.00	1.5	1.5	—	313	313	0.01	0.01	0.03	318
Vendor	0.01	0.01	0.33	0.15	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	264	264	< 0.005	0.04	0.02	275
Hauling	0.03	0.02	1.1	0.24	0.01	0.02	4.0	4.0	0.02	0.44	0.45	—	836	836	0.01	0.13	0.04	876
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.24	0.00	0.00	2.6	2.6	0.00	0.26	0.26	—	64	64	< 0.005	< 0.005	0.10	65
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.68	0.69	< 0.005	0.07	0.07	—	53	53	< 0.005	0.01	0.05	55
Hauling	0.01	< 0.005	0.21	0.05	< 0.005	< 0.005	0.72	0.73	< 0.005	0.08	0.08	—	167	167	< 0.005	0.03	0.14	175
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.47	0.47	0.00	0.05	0.05	—	11	11	< 0.005	< 0.005	0.02	11
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.12	0.13	< 0.005	0.01	0.01	—	8.7	8.7	< 0.005	< 0.005	0.01	9.1
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.02	—	28	28	< 0.005	< 0.005	0.02	29

3.7. Set Modules, Inverters, & Switchgear (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	0.43	4.3	0.01	0.02	—	0.02	0.02	—	0.02	—	866	866	0.04	0.01	—	869
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.4	8.4	< 0.005	< 0.005	< 0.005	8.8

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26	26	< 0.005	< 0.005	—	27
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.25	0.25	< 0.005	< 0.005	< 0.005	0.27
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.4	4.4	< 0.005	< 0.005	—	4.4
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.11	1.2	0.00	0.00	14	14	0.00	1.5	1.5	—	313	313	0.01	0.01	0.03	318
Vendor	0.01	0.01	0.33	0.15	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	264	264	< 0.005	0.04	0.02	275
Hauling	0.02	0.01	0.83	0.19	< 0.005	0.01	3.1	3.1	0.01	0.34	0.36	—	659	659	0.01	0.10	0.03	690
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.39	0.39	0.00	0.04	0.04	—	9.8	9.8	< 0.005	< 0.005	0.01	9.9
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	8.1	8.1	< 0.005	< 0.005	0.01	8.4
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	20	20	< 0.005	< 0.005	0.02	21
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.07	0.07	0.00	0.01	0.01	—	1.6	1.6	< 0.005	< 0.005	< 0.005	1.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.3	1.3	< 0.005	< 0.005	< 0.005	1.4
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	3.3	3.3	< 0.005	< 0.005	< 0.005	3.5

3.9. Set Modules, Inverters, & Switchgear (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	0.43	4.3	0.01	0.02	—	0.02	0.02	—	0.02	—	867	867	0.04	0.01	—	870
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.2	8.2	< 0.005	< 0.005	< 0.005	8.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	90	90	< 0.005	< 0.005	—	90
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	0.84	0.84	< 0.005	< 0.005	< 0.005	0.88
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15	15	< 0.005	< 0.005	—	15
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.15
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.10	1.2	0.00	0.00	14	14	0.00	1.5	1.5	—	307	307	0.01	0.01	0.03	312
Vendor	0.01	0.01	0.31	0.14	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	257	257	< 0.005	0.03	0.01	268
Hauling	0.02	0.01	0.81	0.19	< 0.005	0.01	3.1	3.1	0.01	0.34	0.36	—	642	642	0.01	0.10	0.03	672
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	1.3	1.3	0.00	0.14	0.14	—	32	32	< 0.005	< 0.005	0.05	33
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.35	0.35	< 0.005	0.04	0.04	—	27	27	< 0.005	< 0.005	0.02	28
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.29	0.30	< 0.005	0.03	0.03	—	66	66	< 0.005	0.01	0.05	69
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.24	0.24	0.00	0.02	0.02	—	5.4	5.4	< 0.005	< 0.005	0.01	5.4
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	4.4	4.4	< 0.005	< 0.005	< 0.005	4.6
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	11	11	< 0.005	< 0.005	0.01	11

3.11. Electrical Wire Installation/Finish Grading (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.24	3.6	13	0.02	0.04	—	0.04	0.04	—	0.04	—	2,220	2,220	0.09	0.02	—	2,228
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.1	8.1	< 0.005	< 0.005	0.01	8.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.24	0.24	3.6	13	0.02	0.04	—	0.04	0.04	—	0.04	—	2,220	2,220	0.09	0.02	—	2,228
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.2	8.2	< 0.005	< 0.005	< 0.005	8.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.48	1.7	< 0.005	0.01	—	0.01	0.01	—	0.01	—	298	298	0.01	< 0.005	—	299
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	1.1	1.1	< 0.005	< 0.005	< 0.005	1.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49	49	< 0.005	< 0.005	—	50
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.08	1.4	0.00	0.00	14	14	0.00	1.5	1.5	—	340	340	0.01	< 0.005	1.0	342
Vendor	0.01	0.01	0.29	0.14	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	257	257	< 0.005	0.03	0.53	268
Hauling	0.02	0.01	0.75	0.19	< 0.005	0.01	3.1	3.1	0.01	0.34	0.36	—	641	641	0.01	0.10	1.2	672
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.10	1.2	0.00	0.00	14	14	0.00	1.5	1.5	—	307	307	0.01	0.01	0.03	312
Vendor	0.01	0.01	0.31	0.14	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	257	257	< 0.005	0.03	0.01	268
Hauling	0.02	0.01	0.81	0.19	< 0.005	0.01	3.1	3.1	0.01	0.34	0.36	—	642	642	0.01	0.10	0.03	672
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.01	0.15	0.00	0.00	1.7	1.7	0.00	0.18	0.18	—	42	42	< 0.005	< 0.005	0.06	43
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.46	0.46	< 0.005	0.05	0.05	—	35	35	< 0.005	< 0.005	0.03	36
Hauling	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	—	86	86	< 0.005	0.01	0.07	90
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.31	0.31	0.00	0.03	0.03	—	7.0	7.0	< 0.005	< 0.005	0.01	7.1
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	5.7	5.7	< 0.005	< 0.005	0.01	5.9
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	14	14	< 0.005	< 0.005	0.01	15

3.13. Installation of Foundations & Equipment (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.60	3.0	< 0.005	0.02	—	0.02	0.02	—	0.02	—	440	440	0.02	< 0.005	—	441
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.4	8.4	< 0.005	< 0.005	< 0.005	8.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.41	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59	59	< 0.005	< 0.005	—	59
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	1.1	1.1	< 0.005	< 0.005	< 0.005	1.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.8	9.8	< 0.005	< 0.005	—	9.8
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.19
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.11	1.2	0.00	0.00	14	14	0.00	1.5	1.5	—	313	313	0.01	0.01	0.03	318
Vendor	0.01	0.01	0.33	0.15	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	264	264	< 0.005	0.04	0.02	275
Hauling	0.02	0.01	0.83	0.19	< 0.005	0.01	3.1	3.1	0.01	0.34	0.36	—	659	659	0.01	0.10	0.03	690
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.16	0.00	0.00	1.7	1.7	0.00	0.18	0.18	—	43	43	< 0.005	< 0.005	0.07	43
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.46	0.46	< 0.005	0.05	0.05	—	35	35	< 0.005	< 0.005	0.03	37
Hauling	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	—	88	88	< 0.005	0.01	0.07	93
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.31	0.31	0.00	0.03	0.03	—	7.1	7.1	< 0.005	< 0.005	0.01	7.2
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	5.9	5.9	< 0.005	< 0.005	0.01	6.1
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	15	15	< 0.005	< 0.005	0.01	15

3.15. Acess Road (2027) - Unmitigated

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

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

Off-Road Equipment	0.24	0.23	1.7	11	0.02	0.05	—	0.05	0.05	—	0.05	—	2,059	2,059	0.08	0.02	—	2,066
Dust From Material Movement	—	—	—	—	—	—	2.6	2.6	—	1.3	1.3	—	—	—	—	—	—	—
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	1.1	1.1	< 0.005	0.11	0.11	—	12	12	< 0.005	< 0.005	0.02	12
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.12	0.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	141	141	0.01	< 0.005	—	142
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	0.79	0.79	< 0.005	< 0.005	< 0.005	0.83
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23	23	< 0.005	< 0.005	—	23
Dust From Material Movement	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	<0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.09	1.5	0.00	0.00	14	14	0.00	1.5	1.5	—	346	346	0.01	0.01	1.1	352
Vendor	0.02	0.01	0.30	0.14	< 0.005	< 0.005	3.8	3.8	< 0.005	0.39	0.39	—	264	264	< 0.005	0.04	0.60	275
Hauling	0.06	0.03	1.9	0.47	0.01	0.03	7.8	7.9	0.03	0.86	0.89	—	1,645	1,645	0.02	0.26	3.1	1,726
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.88	0.88	0.00	0.09	0.09	—	22	22	< 0.005	< 0.005	0.03	22
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.23	0.23	< 0.005	0.02	0.02	—	18	18	< 0.005	< 0.005	0.02	19
Hauling	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	0.49	0.49	< 0.005	0.05	0.06	—	113	113	< 0.005	0.02	0.09	118
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.16	0.16	0.00	0.02	0.02	—	3.6	3.6	< 0.005	< 0.005	0.01	3.7
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	3.0	3.0	< 0.005	< 0.005	< 0.005	3.1
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	19	19	< 0.005	< 0.005	0.02	20

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	503	503	0.08	0.01	—	508
Total	—	—	—	—	—	—	—	—	—	—	—	—	503	503	0.08	0.01	—	508
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	503	503	0.08	0.01	—	508
Total	—	—	—	—	—	—	—	—	—	—	—	—	503	503	0.08	0.01	—	508
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	83	83	0.01	< 0.005	—	84
Total	—	—	—	—	—	—	—	—	—	—	—	—	83	83	0.01	< 0.005	—	84

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Refrigerated	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	58	58	0.01	< 0.005	—	59
Total	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	58	58	0.01	< 0.005	—	59
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	58	58	0.01	< 0.005	—	59
Total	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	58	58	0.01	< 0.005	—	59
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.7	9.7	< 0.005	< 0.005	—	9.7
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.7	9.7	< 0.005	< 0.005	—	9.7

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	0.79	0.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.28	0.26	0.01	1.6	<0.005	<0.005	—	< 0.005	<0.005	—	< 0.005	—	6.6	6.6	< 0.005	< 0.005	—	6.6
Total	1.1	1.1	0.01	1.6	<0.005	<0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.6	6.6	< 0.005	< 0.005	—	6.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.79	0.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.85	0.85	[redacted]								—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.14	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	[redacted]								—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.02	< 0.005	0.14	<0.005	<0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.54
Total	0.18	0.18	< 0.005	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.54

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	16	15	31	1.7	0.04	—	85
Total	—	—	—	—	—	—	—	—	—	—	—	16	15	31	1.7	0.04	—	85
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	16	15	31	1.7	0.04	—	85
Total	—	—	—	—	—	—	—	—	—	—	—	16	15	31	1.7	0.04	—	85
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	2.7	2.5	5.2	0.28	0.01	—	14
Total	—	—	—	—	—	—	—	—	—	—	—	2.7	2.5	5.2	0.28	0.01	—	14

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	980	980
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	980	980
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	980	980
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	980	980
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	162	162
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	162	162

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	7/30/2027	10/22/2027	6.0	73	—
Commissioning & Testing	Site Preparation	4/11/2028	7/4/2028	6.0	73	—
Grading	Grading	7/30/2027	10/22/2027	6.0	73	—

Set Modules, Inverters, & Switchgear	Building Construction	12/19/2027	2/13/2028	6.0	48	—
Electrical Wire Installation/Finish Grading	Building Construction	2/14/2028	4/10/2028	6.0	49	—
Installation of Foundations & Equipment	Building Construction	10/23/2027	12/18/2027	6.0	49	—
Acess Road	Paving	7/1/2027	7/29/2027	6.0	25	—

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	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.0	8.0	84	0.37
Site Preparation	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.00	8.0	33	0.73
Site Preparation	Excavators	Diesel	Tier 4 Final	1.00	8.0	36	0.38
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.0	36	0.46
Grading	Graders	Diesel	Tier 4 Final	1.00	8.0	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.0	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.0	84	0.37
Grading	Plate Compactors	Diesel	Average	1.00	8.0	8.0	0.43
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.0	16	0.38
Set Modules, Inverters, & Switchgear	Cranes	Diesel	Tier 4 Final	1.00	7.0	367	0.29
Electrical Wire Installation/Finish Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	7.0	84	0.37
Electrical Wire Installation/Finish Grading	Welders	Diesel	Tier 4 Final	1.00	8.0	46	0.45

Electrical Wire Installation/Finish Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.0	367	0.40
Electrical Wire Installation/Finish Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.0	36	0.46
Electrical Wire Installation/Finish Grading	Trenchers	Diesel	Tier 4 Final	1.00	8.0	40	0.50
Installation of Foundations & Equipment	Bore/Drill Rigs	Diesel	Tier 4 Final	1.00	8.0	83	0.50
Installation of Foundations & Equipment	Cement and Mortar Mixers	Diesel	Average	1.00	8.0	10.0	0.56
Acess Road	Pavers	Diesel	Tier 4 Final	1.00	8.0	81	0.42
Acess Road	Paving Equipment	Diesel	Tier 4 Final	1.00	6.0	89	0.36
Acess Road	Rollers	Diesel	Tier 4 Final	1.00	6.0	36	0.38
Acess Road	Plate Compactors	Diesel	Average	1.00	8.0	8.0	0.43
Acess Road	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.0	367	0.40

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	Worker	40	12	LDA.LDT1.LDT2
Site Preparation	Vendor	10.0	8.4	HHDT.MHDT
Site Preparation	Hauling	13	20	HHDT
Site Preparation	Onsite truck	1.00	2.0	HHDT
Commissioning & Testing	Worker	40	12	LDA,LDT1,LDT2
Commissioning & Testing	Vendor	10.0	8.4	HHDT.MHDT
Commissioning & Testing	Hauling	2.0	20	HHDT

Commissioning & Testing	Onsite truck	0.00	0.00	HHDT
Grading	Worker	40	12	LDA,LDT1,LDT2
Grading	Vendor	10.0	8.4	HHDT.MHDT
Grading	Hauling	13	20	HHDT
Grading	Onsite truck	1.00	2.0	HHDT
Set Modules, Inverters, & Switchgear	Worker	40	12	LDA,LDT1,LDT2
Set Modules, Inverters, & Switchgear	Vendor	10.0	8.4	HHDT.MHDT
Set Modules, Inverters, & Switchgear	Hauling	10.0	20	HHDT
Set Modules, Inverters, & Switchgear	Onsite truck	1.00	2.0	HHDT
Electrical Wire Installation/Finish Grading	Worker	40	12	LDA,LDT1,LDT2
Electrical Wire Installation/Finish Grading	Vendor	10.0	8.4	HHDT.MHDT
Electrical Wire Installation/Finish Grading	Hauling	10.0	20	HHDT
Electrical Wire Installation/Finish Grading	Onsite truck	1.00	2.0	HHDT
Installation of Foundations & Equipment	Worker	40	12	LDA.LDT1.LDT2
Installation of Foundations & Equipment	Vendor	10.0	8.4	HHDT.MHDT
Installation of Foundations & Equipment	Hauling	10.0	20	HHDT
Installation of Foundations & Equipment	Onsite truck	1.00	2.0	HHDT
Acess Road	Worker	40	12	LDA.LDT1.LDT2
Acess Road	Vendor	10.0	8.4	HHDT.MHDT
Acess Road	Hauling	25	20	HHDT
Acess Road	Onsite truck	1.00	3.0	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	11,932	2,730	0.00	0.00	0.00
Commissioning & Testing	—	—	0.00	0.00	0.00
Grading	0.00	0.00	73	0.00	0.00
Acess Road	3,978	910	13	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Acess Road	Refrigerated Warehouse-No Rail	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
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	1.1	1.1	1.1	416	11	11	11	4,160

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Refrigerated Warehouse-No Rail	Wood Fireplaces	0	0
Refrigerated Warehouse-No Rail	Gas Fireplaces	0	0
Refrigerated Warehouse-No Rail	Propane Fireplaces	0	0
Refrigerated Warehouse-No Rail	Electric Fireplaces	0	0
Refrigerated Warehouse-No Rail	No Fireplaces	0	0
Refrigerated Warehouse-No Rail	Conventional Wood Stoves	0	0
Refrigerated Warehouse-No Rail	Catalytic Wood Stoves	0	0
Refrigerated Warehouse-No Rail	Non-Catalytic Wood Stoves	0	0
Refrigerated Warehouse-No Rail	Pellet Wood Stoves	0	0

5.10.2. Architectural Coatings

—	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
undefined	0.00	0.00	55,157	18,386	—

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)
Refrigerated Warehouse-No Rail	899,686	204	0.0330	0.0040	182,427

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Refrigerated Warehouse-No Rail	8,503,294	154,672

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Refrigerated Warehouse-No Rail	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Refrigerated Warehouse-No Rail	Cold storage	R-404A	3,922	7.5	7.5	7.5	25

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

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 strongjy through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27	annual days of extreme heat
Extreme Precipitation	6.9	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 % 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	4	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	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	4	1	1	4
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
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	38
AQ-PM	13
AQ-DPM	32
Drinking Water	37
Lead Risk Housing	9.2
Pesticides	81
Toxic Releases	43
Traffic	50
Effect Indicators	—
CleanUp Sites	87
Groundwater	88
Haz Waste Facilities/Generators	94
Impaired Water Bodies	44
Solid Waste	78
Sensitive Population	—
Asthma	87
Cardio-vascular	67
Low Birth Weights	21
Socioeconomic Factor Indicators	—
Education	46
Housing	18
Linguistic	26
Poverty	11
Unemployment	48

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	94.26408315
Employed	49.30065443
Median HI	79.84088284
Education	—
Bachelor's or higher	45.52803798
High school enrollment	100
Preschool enrollment	37.79032465
Transportation	—
Auto Access	93.63531374
Active commuting	3.772616451
Social	—
2-parent households	88.50250225
Voting	54.13832927
Neighborhood	—
Alcohol availability	81.95816759
Park access	4.619530348
Retail density	10.04747851
Supermarket access	9.790837931
Tree canopy	17.28474272
Housing	—
Homeownership	66.77787758
Housing habitability	86.03875273
Low-inc homeowner severe housing cost burden	84.11394842
Low-inc renter severe housing cost burden	87.5914282
Uncrowded housing	56.30694213
Health Outcomes	—

Insured adults	83.11305017
Arthritis	60.6
Asthma ER Admissions	18.3
High Blood Pressure	76.3
Cancer (excluding skin)	45.0
Asthma	55.1
Coronary Heart Disease	81.5
Chronic Obstructive Pulmonary Disease	76.7
Diagnosed Diabetes	82.1
Life Expectancy at Birth	50.8
Cognitively Disabled	24.2
Physically Disabled	37.2
Heart Attack ER Admissions	32.3
Mental Health Not Good	64.8
Chronic Kidney Disease	79.8
Obesity	59.2
Pedestrian Injuries	19.6
Physical Health Not Good	79.7
Stroke	84.7
Health Risk Behaviors	—
Binge Drinking	8.9
Current Smoker	56.8
No Leisure Time for Physical Activity	74.2
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	48.8
Elderly	37.4

English Speaking	87.9
Foreign-born	26.8
Outdoor Workers	23.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	91.2
Traffic Density	51.7
Traffic Access	23.0
Other Indices	—
Hardship	32.8
Other Decision Support	—
2016 Voting	69.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	56
Healthy Places Index Score for Project Location (b)	70
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

8.1. Justifications

Screen	Justification
Land Use	Lot acreage provided by applicant; sq ft of BESS estimated using Google Earth and facility site plans.
Construction: Construction Phases	Schedule provided by Applicant.
Construction: Off-Road Equipment	Equipment provided by Applicant.
Construction: Dust From Material Movement	Based on applicant provided information
Construction: Trips and VMT	Trip data provided by Applicant. Assuming daily onsite truck trips for watering.
Construction: On-Road Fugitive Dust	% pavement #'s based on site diameter ratioed against the default trip lengths.
Operations: Road Dust	Consistency with construction assumptions.
Operations: Solid Waste	No solid waste generation

Arges BESS Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Arges BESS
Construction Start Date	6/1/2028
Operational Year	2029
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.7
Precipitation (days)	35
Location	5221 Quinn Rd, Vacaville, CA 95688, USA
County	Solano-Sacramento
City	Unincorporated
Air District	Yolo/Solano AQMD
Air Basin	Sacramento Valley
TAZ	837
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.35

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
Refrigerated Warehouse-No Rail	66	1000sqft	5.0	65,718	11,865	—	—	—

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.	0.90	0.79	9.3	25	0.06	0.16	53	53	0.16	6.6	6.8	—	7,888	7,888	0.19	0.60	8.9	8,082
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.40	0.38	5.2	14	0.03	0.06	22	22	0.06	2.3	2.4	—	3,716	3,716	0.11	0.22	0.09	3,784
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.27	0.24	2.8	7.1	0.02	0.05	17	17	0.05	2.0	2.1	—	2,477	2,477	0.06	0.21	1.3	2,542
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05	0.04	0.51	1.3	< 0.005	0.01	3.0	3.0	0.01	0.37	0.38	—	410	410	0.01	0.03	0.22	421

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.90	0.79	9.3	25	0.06	0.16	53	53	0.16	6.6	6.8	—	7,888	7,888	0.19	0.60	8.9	8,082

2029	0.15	0.14	0.57	1.5	< 0.005	0.01	18	18	0.01	1.8	1.8	—	771	771	0.01	0.07	1.7	793
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.28	0.24	2.3	5.9	0.02	0.05	22	22	0.05	2.3	2.4	—	2,402	2,402	0.06	0.21	0.09	2,465
2029	0.40	0.38	5.2	14	0.03	0.06	22	22	0.06	2.3	2.4	—	3,716	3,716	0.11	0.22	0.08	3,784
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.27	0.24	2.8	7.1	0.02	0.05	17	17	0.05	2.0	2.1	—	2,477	2,477	0.06	0.21	1.3	2,542
2029	0.09	0.08	0.88	2.3	0.01	0.01	6.5	6.5	0.01	0.68	0.69	—	727	727	0.02	0.05	0.36	743
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.05	0.04	0.51	1.3	< 0.005	0.01	3.0	3.0	0.01	0.37	0.38	—	410	410	0.01	0.03	0.22	421
2029	0.02	0.02	0.16	0.43	< 0.005	< 0.005	1.2	1.2	< 0.005	0.12	0.13	—	120	120	< 0.005	0.01	0.06	123

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.	2.0	2.0	0.12	3.0	< 0.005	0.01	0.18	0.19	0.01	0.02	0.03	29	1,051	1,080	3.1	0.09	1,751	2,937
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.5	1.5	0.09	0.11	< 0.005	0.01	0.18	0.18	0.01	0.02	0.03	29	1,038	1,068	3.1	0.09	1,751	2,924
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.8	1.8	0.10	1.5	< 0.005	0.01	0.16	0.17	0.01	0.02	0.03	29	1,044	1,073	3.1	0.09	1,751	2,930
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.32	0.32	0.02	0.28	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	4.8	173	178	0.52	0.01	290	485

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	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	0.18	0.18	< 0.005	0.02	0.02	—	9.2	9.2	< 0.005	< 0.005	0.02	9.4
Area	2.0	2.0	0.02	2.9	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	12	12	< 0.005	< 0.005	—	12
Energy	0.01	< 0.005	0.09	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	1,003	1,003	0.15	0.02	—	1,012
Water	—	—	—	—	—	—	—	—	—	—	—	29	27	56	3.0	0.07	—	152
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,751	1,751
Total	2.0	2.0	0.12	3.0	< 0.005	0.01	0.18	0.19	0.01	0.02	0.03	29	1,051	1,080	3.1	0.09	1,751	2,937
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	0.18	0.18	< 0.005	0.02	0.02	—	8.6	8.6	< 0.005	< 0.005	< 0.005	8.7
Area	1.5	1.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.09	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	1,003	1,003	0.15	0.02	—	1,012
Water	—	—	—	—	—	—	—	—	—	—	—	29	27	56	3.0	0.07	—	152
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,751	1,751
Total	1.5	1.5	0.09	0.11	< 0.005	0.01	0.18	0.18	0.01	0.02	0.03	29	1,038	1,068	3.1	0.09	1,751	2,924
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	8.7	8.7	< 0.005	< 0.005	0.01	8.8
Area	1.8	1.7	0.01	1.4	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.8	5.8	< 0.005	< 0.005	—	5.8
Energy	0.01	< 0.005	0.09	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	1,003	1,003	0.15	0.02	—	1,012
Water	—	—	—	—	—	—	—	—	—	—	—	29	27	56	3.0	0.07	—	152
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,751	1,751
Total	1.8	1.8	0.10	1.5	< 0.005	0.01	0.16	0.17	0.01	0.02	0.03	29	1,044	1,073	3.1	0.09	1,751	2,930
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	1.4	1.4	< 0.005	< 0.005	< 0.005	1.5
Area	0.32	0.32	< 0.005	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.96	0.96	< 0.005	< 0.005	—	0.96
Energy	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	166	166	0.03	< 0.005	—	168
Water	—	—	—	—	—	—	—	—	—	—	—	4.8	4.4	9.2	0.50	0.01	—	25
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	290	290
Total	0.32	0.32	0.02	0.28	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	4.8	173	178	0.52	0.01	290	485

3. Construction Emissions Details

3.1. Site Preparation (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.14	2.9	8.0	0.01	0.02	—	0.02	0.02	—	0.02	—	1,138	1,138	0.05	0.01	—	1,142
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.1	8.1	< 0.005	< 0.005	0.01	8.5

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.58	1.6	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	228	228	0.01	< 0.005	—	228
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	1.6	1.6	< 0.005	< 0.005	< 0.005	1.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38	38	< 0.005	< 0.005	—	38
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.08	1.4	0.00	0.00	14	14	0.00	1.5	1.5	—	340	340	0.01	< 0.005	1.0	342
Vendor	0.01	0.01	0.29	0.14	< 0.005	< 0.005	2.5	2.5	< 0.005	0.27	0.27	—	257	257	< 0.005	0.03	0.53	268
Hauling	0.06	0.03	1.9	0.46	0.01	0.03	7.8	7.9	0.03	0.86	0.89	—	1,603	1,603	0.02	0.25	2.9	1,681
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.23	0.00	0.00	2.6	2.6	0.00	0.26	0.26	—	63	63	< 0.005	< 0.005	0.09	64
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.46	0.46	< 0.005	0.05	0.05	—	51	51	< 0.005	0.01	0.05	54
Hauling	0.01	0.01	0.40	0.09	< 0.005	0.01	1.4	1.4	0.01	0.16	0.16	—	321	321	< 0.005	0.05	0.25	336
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.47	0.47	0.00	0.05	0.05	—	10	10	< 0.005	< 0.005	0.01	11
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	8.5	8.5	< 0.005	< 0.005	0.01	8.9
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.26	0.26	< 0.005	0.03	0.03	—	53	53	< 0.005	0.01	0.04	56

3.3. Commissioning & Testing (2029) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.07	1.3	0.00	0.00	14	14	0.00	1.5	1.5	—	334	334	0.01	< 0.005	0.90	336
Vendor	0.01	0.01	0.28	0.12	< 0.005	< 0.005	2.5	2.5	< 0.005	0.27	0.27	—	250	250	< 0.005	0.03	0.46	260
Hauling	0.01	< 0.005	0.22	0.05	< 0.005	< 0.005	0.94	0.94	< 0.005	0.10	0.11	—	187	187	< 0.005	0.03	0.32	197
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.09	1.1	0.00	0.00	14	14	0.00	1.5	1.5	—	302	302	0.01	0.01	0.02	306
Vendor	0.01	0.01	0.30	0.13	< 0.005	< 0.005	2.5	2.5	< 0.005	0.27	0.27	—	250	250	< 0.005	0.03	0.01	260
Hauling	0.01	< 0.005	0.24	0.06	< 0.005	< 0.005	0.94	0.94	< 0.005	0.10	0.11	—	188	188	< 0.005	0.03	0.01	197
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.21	0.00	0.00	2.6	2.6	0.00	0.26	0.26	—	62	62	< 0.005	< 0.005	0.08	62
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.46	0.46	< 0.005	0.05	0.05	—	50	50	< 0.005	0.01	0.04	52
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	37	37	< 0.005	0.01	0.03	39
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.47	0.47	0.00	0.05	0.05	—	10	10	< 0.005	< 0.005	0.01	10
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	8.3	8.3	< 0.005	< 0.005	0.01	8.6
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	6.2	6.2	< 0.005	< 0.005	< 0.005	6.5

3.5. Grading (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.30	1.8	13	0.02	0.07	—	0.07	0.07	—	0.07	—	2,334	2,334	0.09	0.02	—	2,342
Dust From Material Movement	—	—	—	—	—	—	2.8	2.8	—	1.3	1.3	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.1	8.1	< 0.005	< 0.005	0.01	8.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	0.36	2.6	< 0.005	0.01	—	0.01	0.01	—	0.01	—	467	467	0.02	< 0.005	—	468
Dust From Material Movement	—	—	—	—	—	—	0.55	0.55	—	0.27	0.27	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	1.6	1.6	< 0.005	< 0.005	< 0.005	1.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.48	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	77	77	< 0.005	< 0.005	—	78
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.08	1.4	0.00	0.00	14	14	0.00	1.5	1.5	—	340	340	0.01	< 0.005	1.0	342
Vendor	0.01	0.01	0.29	0.14	< 0.005	< 0.005	2.5	2.5	< 0.005	0.27	0.27	—	257	257	< 0.005	0.03	0.53	268
Hauling	0.06	0.03	1.9	0.46	0.01	0.03	7.8	7.9	0.03	0.86	0.89	—	1,603	1,603	0.02	0.25	2.9	1,681
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.23	0.00	0.00	2.6	2.6	0.00	0.26	0.26	—	63	63	< 0.005	< 0.005	0.09	64
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.46	0.46	< 0.005	0.05	0.05	—	51	51	< 0.005	0.01	0.05	54
Hauling	0.01	0.01	0.40	0.09	< 0.005	0.01	1.4	1.4	0.01	0.16	0.16	—	321	321	< 0.005	0.05	0.25	336
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.47	0.47	0.00	0.05	0.05	—	10	10	< 0.005	< 0.005	0.01	11
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	8.5	8.5	< 0.005	< 0.005	0.01	8.9
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.26	0.26	< 0.005	0.03	0.03	—	53	53	< 0.005	0.01	0.04	56

3.7. Set Modules, Inverters, & Switchgear (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	0.43	4.3	0.01	0.02	—	0.02	0.02	—	0.02	—	867	867	0.04	0.01	—	870
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.2	8.2	< 0.005	< 0.005	< 0.005	8.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	88	88	< 0.005	< 0.005	—	88
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.86
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14	14	< 0.005	< 0.005	—	15
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.10	1.2	0.00	0.00	14	14	0.00	1.5	1.5	—	307	307	0.01	0.01	0.03	312
Vendor	0.01	0.01	0.31	0.14	< 0.005	< 0.005	2.5	2.5	< 0.005	0.27	0.27	—	257	257	< 0.005	0.03	0.01	268
Hauling	0.04	0.02	1.2	0.28	0.01	0.02	4.7	4.7	0.02	0.52	0.54	—	962	962	0.01	0.15	0.04	1,008
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	1.3	1.3	0.00	0.13	0.13	—	32	32	< 0.005	< 0.005	0.04	32
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.23	0.23	< 0.005	0.02	0.02	—	26	26	< 0.005	< 0.005	0.02	27
Hauling	< 0.005	< 0.005	0.12	0.03	< 0.005	< 0.005	0.43	0.43	< 0.005	0.05	0.05	—	97	97	< 0.005	0.02	0.08	102
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.24	0.24	0.00	0.02	0.02	—	5.2	5.2	< 0.005	< 0.005	0.01	5.3
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	4.3	4.3	< 0.005	< 0.005	< 0.005	4.5
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	16	16	< 0.005	< 0.005	0.01	17

3.9. Set Modules, Inverters, & Switchgear (2029) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	0.43	4.3	0.01	0.02	—	0.02	0.02	—	0.02	—	867	867	0.04	0.01	—	870
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.0	8.0	< 0.005	< 0.005	< 0.005	8.4

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28	28	< 0.005	< 0.005	—	29
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.7	4.7	< 0.005	< 0.005	—	4.7
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.09	1.1	0.00	0.00	14	14	0.00	1.5	1.5	—	302	302	0.01	0.01	0.02	306
Vendor	0.01	0.01	0.30	0.13	< 0.005	< 0.005	2.5	2.5	< 0.005	0.27	0.27	—	250	250	< 0.005	0.03	0.01	260
Hauling	0.03	0.02	1.2	0.28	0.01	0.02	4.7	4.7	0.02	0.52	0.54	—	938	938	0.01	0.15	0.04	983
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.42	0.42	0.00	0.04	0.04	—	10	10	< 0.005	< 0.005	0.01	10
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	8.2	8.2	< 0.005	< 0.005	0.01	8.6
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.14	0.14	< 0.005	0.02	0.02	—	31	31	< 0.005	< 0.005	0.02	32
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.08	0.08	0.00	0.01	0.01	—	1.7	1.7	< 0.005	< 0.005	< 0.005	1.7
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	1.4	1.4	< 0.005	< 0.005	< 0.005	1.4
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	5.1	5.1	< 0.005	< 0.005	< 0.005	5.3

3.11. Electrical Wire Installation/Finish Grading (2029) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.24	3.6	13	0.02	0.04	—	0.04	0.04	—	0.04	—	2,219	2,219	0.09	0.02	—	2,226
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.0	8.0	< 0.005	< 0.005	< 0.005	8.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.48	1.7	< 0.005	0.01	—	0.01	0.01	—	0.01	—	298	298	0.01	< 0.005	—	299
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	1.1	1.1	< 0.005	< 0.005	< 0.005	1.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49	49	< 0.005	< 0.005	—	49
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.09	1.1	0.00	0.00	14	14	0.00	1.5	1.5	—	302	302	0.01	0.01	0.02	306
Vendor	0.01	0.01	0.30	0.13	< 0.005	< 0.005	2.5	2.5	< 0.005	0.27	0.27	—	250	250	< 0.005	0.03	0.01	260
Hauling	0.03	0.02	1.2	0.28	0.01	0.02	4.7	4.7	0.02	0.52	0.54	—	938	938	0.01	0.15	0.04	983
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.01	0.14	0.00	0.00	1.7	1.7	0.00	0.18	0.18	—	41	41	< 0.005	< 0.005	0.05	42
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	34	34	< 0.005	< 0.005	0.03	35
Hauling	< 0.005	< 0.005	0.16	0.04	< 0.005	< 0.005	0.57	0.58	< 0.005	0.06	0.07	—	126	126	< 0.005	0.02	0.09	132
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.31	0.31	0.00	0.03	0.03	—	6.8	6.8	< 0.005	< 0.005	0.01	6.9
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	5.6	5.6	< 0.005	< 0.005	< 0.005	5.8
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	21	21	< 0.005	< 0.005	0.02	22

3.13. Access Road (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.23	1.7	11	0.02	0.05	—	0.05	0.05	—	0.05	—	2,060	2,060	0.08	0.02	—	2,067
Dust From Material Movement	—	—	—	—	—	—	2.6	2.6	—	1.3	1.3	—	—	—	—	—	—	—
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.1	8.1	< 0.005	< 0.005	0.01	8.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.12	0.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	141	141	0.01	< 0.005	—	142
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	0.56	0.56	< 0.005	< 0.005	< 0.005	0.58
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23	23	< 0.005	< 0.005	—	23
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.10
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.08	1.4	0.00	0.00	14	14	0.00	1.5	1.5	—	340	340	0.01	< 0.005	1.0	342
Vendor	0.01	0.01	0.29	0.14	< 0.005	< 0.005	2.5	2.5	< 0.005	0.27	0.27	—	257	257	< 0.005	0.03	0.53	268

Hauling	0.12	0.07	3.8	0.93	0.02	0.07	16	16	0.07	1.7	1.8	—	3,206	3,206	0.03	0.50	5.8	3,361
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.88	0.88	0.00	0.09	0.09	—	21	21	< 0.005	< 0.005	0.03	22
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	18	18	< 0.005	< 0.005	0.02	18
Hauling	0.01	< 0.005	0.27	0.06	< 0.005	< 0.005	0.97	0.98	< 0.005	0.11	0.11	—	220	220	< 0.005	0.03	0.17	230
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.16	0.16	0.00	0.02	0.02	—	3.6	3.6	< 0.005	< 0.005	< 0.005	3.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	2.9	2.9	< 0.005	< 0.005	< 0.005	3.0
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.18	0.18	< 0.005	0.02	0.02	—	36	36	< 0.005	0.01	0.03	38

3.15. Installation of Foundations & Equipment (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.60	3.0	< 0.005	0.02	—	0.02	0.02	—	0.02	—	440	440	0.02	< 0.005	—	441
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.1	8.1	< 0.005	< 0.005	0.01	8.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.10	0.09	0.60	3.0	< 0.005	0.02	—	0.02	0.02	—	0.02	—	440	440	0.02	< 0.005	—	441
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	—	8.2	8.2	< 0.005	< 0.005	< 0.005	8.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.41	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59	59	< 0.005	< 0.005	—	59
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	1.1	1.1	< 0.005	< 0.005	< 0.005	1.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.8	9.8	< 0.005	< 0.005	—	9.8
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.08	1.4	0.00	0.00	14	14	0.00	1.5	1.5	—	340	340	0.01	< 0.005	1.0	342
Vendor	0.01	0.01	0.29	0.14	< 0.005	< 0.005	2.5	2.5	< 0.005	0.27	0.27	—	257	257	< 0.005	0.03	0.53	268
Hauling	0.04	0.02	1.1	0.28	0.01	0.02	4.7	4.7	0.02	0.52	0.54	—	962	962	0.01	0.15	1.7	1,008
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.10	1.2	0.00	0.00	14	14	0.00	1.5	1.5	—	307	307	0.01	0.01	0.03	312
Vendor	0.01	0.01	0.31	0.14	< 0.005	< 0.005	2.5	2.5	< 0.005	0.27	0.27	—	257	257	< 0.005	0.03	0.01	268
Hauling	0.04	0.02	1.2	0.28	0.01	0.02	4.7	4.7	0.02	0.52	0.54	—	962	962	0.01	0.15	0.04	1,008

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.15	0.00	0.00	1.7	1.7	0.00	0.18	0.18	—	42	42	< 0.005	< 0.005	0.06	43
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	35	35	< 0.005	< 0.005	0.03	36
Hauling	< 0.005	< 0.005	0.16	0.04	< 0.005	< 0.005	0.57	0.58	< 0.005	0.06	0.07	—	129	129	< 0.005	0.02	0.10	135
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.31	0.31	0.00	0.03	0.03	—	7.0	7.0	< 0.005	< 0.005	0.01	7.1
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	5.7	5.7	< 0.005	< 0.005	0.01	5.9
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	21	21	< 0.005	< 0.005	0.02	22

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	899	899	0.15	0.02	—	907
Total	—	—	—	—	—	—	—	—	—	—	—	—	899	899	0.15	0.02	—	907

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	899	899	0.15	0.02	—	907
Total	—	—	—	—	—	—	—	—	—	—	—	—	899	899	0.15	0.02	—	907
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	149	149	0.02	< 0.005	—	150
Total	—	—	—	—	—	—	—	—	—	—	—	—	149	149	0.02	< 0.005	—	150

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	0.01	< 0.005	0.09	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	104	104	0.01	< 0.005	—	105
Total	0.01	< 0.005	0.09	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	104	104	0.01	< 0.005	—	105
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Refrigerated Warehouse-No	0.01	< 0.005	0.09	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	104	104	0.01	< 0.005	—	105
Total	0.01	< 0.005	0.09	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	104	104	0.01	< 0.005	—	105
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17	17	< 0.005	< 0.005	—	17
Total	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17	17	< 0.005	< 0.005	—	17

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	1.4	1.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.10	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.51	0.47	0.02	2.9	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	12	12	< 0.005	< 0.005	—	12
Total	2.0	2.0	0.02	2.9	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	12	12	< 0.005	< 0.005	—	12

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.4	1.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.10	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.5	1.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.26	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.05	0.04	< 0.005	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.96	0.96	< 0.005	< 0.005	—	0.96
Total	0.32	0.32	< 0.005	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.96	0.96	< 0.005	< 0.005	—	0.96

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	29	27	56	3.0	0.07	—	152
Total	—	—	—	—	—	—	—	—	—	—	—	29	27	56	3.0	0.07	—	152
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	29	27	56	3.0	0.07	—	152
Total	—	—	—	—	—	—	—	—	—	—	—	29	27	56	3.0	0.07	—	152
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	4.8	4.4	9.2	0.50	0.01	—	25
Total	—	—	—	—	—	—	—	—	—	—	—	4.8	4.4	9.2	0.50	0.01	—	25

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,751	1,751
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,751	1,751

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,751	1,751
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,751	1,751
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	290	290
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	290	290

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	6/30/2028	9/22/2028	6.0	73	—
Commissioning & Testing	Site Preparation	3/13/2029	6/5/2029	6.0	73	—
Grading	Grading	6/30/2028	9/22/2028	6.0	73	—
Set Modules, Inverters, & Switchgear	Building Construction	11/19/2028	1/14/2029	6.0	48	—
Electrical Wire Installation/Finish Grading	Building Construction	1/15/2029	3/12/2029	6.0	49	—
Access Road	Paving	6/1/2028	6/29/2028	6.0	25	—
Installation of Foundations & Equipment	Trenching	9/23/2028	11/18/2028	6.0	49	—

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	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.0	8.0	84	0.37
Site Preparation	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.00	8.0	33	0.73
Site Preparation	Excavators	Diesel	Tier 4 Final	1.00	8.0	36	0.38
Site Preparation	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.0	36	0.46
Grading	Graders	Diesel	Tier 4 Final	1.00	8.0	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.0	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.0	84	0.37
Grading	Plate Compactors	Diesel	Average	1.00	8.0	8.0	0.43
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.0	16	0.38
Set Modules, Inverters, & Switchgear	Cranes	Diesel	Tier 4 Final	1.00	7.0	367	0.29
Electrical Wire Installation/Finish Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	7.0	84	0.37
Electrical Wire Installation/Finish Grading	Welders	Diesel	Tier 4 Final	1.00	8.0	46	0.45
Electrical Wire Installation/Finish Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.0	367	0.40
Electrical Wire Installation/Finish Grading	Sweepers/Scrubbers	Diesel	Tier 4 Final	1.00	8.0	36	0.46
Electrical Wire Installation/Finish Grading	Trenchers	Diesel	Tier 4 Final	1.00	8.0	40	0.50
Access Road	Pavers	Diesel	Tier 4 Final	1.00	8.0	81	0.42
Access Road	Paving Equipment	Diesel	Tier 4 Final	1.00	6.0	89	0.36
Access Road	Rollers	Diesel	Tier 4 Final	1.00	6.0	36	0.38
Access Road	Plate Compactors	Diesel	Average	1.00	8.0	8.0	0.43

Access Road	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.0	367	0.40
Installation of Foundations & Equipment	Cement and Mortar Mixers	Diesel	Average	1.00	8.0	10.0	0.56
Installation of Foundations & Equipment	Bore/Drill Rigs	Diesel	Tier 4 Final	1.00	8.0	83	0.50

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	Worker	40	12	LDA,LDT1,LDT2
Site Preparation	Vendor	10.0	8.4	HHDT,MHDT
Site Preparation	Hauling	25	20	HHDT
Site Preparation	Onsite truck	1.00	2.0	HHDT
Commissioning & Testing	Worker	40	12	LDA,LDT1,LDT2
Commissioning & Testing	Vendor	10.0	8.4	HHDT,MHDT
Commissioning & Testing	Hauling	3.0	20	HHDT
Commissioning & Testing	Onsite truck	0.00	0.00	HHDT
Grading	Worker	40	12	LDA,LDT1,LDT2
Grading	Vendor	10.0	8.4	HHDT.MHDT
Grading	Hauling	25	20	HHDT
Grading	Onsite truck	1.00	2.0	HHDT
Set Modules, Inverters, & Switchgear	Worker	40	12	LDA,LDT1,LDT2
Set Modules, Inverters, & Switchgear	Vendor	10.0	8.4	HHDT.MHDT
Set Modules, Inverters, & Switchgear	Hauling	15	20	HHDT
Set Modules, Inverters, & Switchgear	Onsite truck	1.00	2.0	HHDT
Electrical Wire Installation/Finish Grading	Worker	40	12	LDA,LDT1,LDT2

Electrical Wire Installation/Finish Grading	Vendor	10.0	8.4	HHDT,MHDT
Electrical Wire Installation/Finish Grading	Hauling	15	20	HHDT
Electrical Wire Installation/Finish Grading	Onsite truck	1.00	2.0	HHDT
Access Road	Worker	40	12	LDA,LDT1,LDT2
Access Road	Vendor	10.0	8.4	HHDT.MHDT
Access Road	Hauling	50	20	HHDT
Access Road	Onsite truck	1.00	2.0	HHDT
Installation of Foundations & Equipment	Worker	40	12	LDA,LDT1,LDT2
Installation of Foundations & Equipment	Vendor	10.0	8.4	HHDT,MHDT
Installation of Foundations & Equipment	Hauling	15	20	HHDT
Installation of Foundations & Equipment	Onsite truck	1.00	2.0	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	25,879	2,910	0.00	0.00	0.00
Commissioning & Testing	—	—	0.00	0.00	0.00
Grading	0.00	0.00	73	0.00	0.00
Access Road	8,626	970	13	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

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

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Access Road	Refrigerated Warehouse-No Rail	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
2028	0.00	204	0.03	< 0.005
2029	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	1.1	1.1	1.1	416	11	11	11	4,160

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Refrigerated Warehouse-No Rail	Wood Fireplaces	0	0
Refrigerated Warehouse-No Rail	Gas Fireplaces	0	0
Refrigerated Warehouse-No Rail	Propane Fireplaces	0	0
Refrigerated Warehouse-No Rail	Electric Fireplaces	0	0
Refrigerated Warehouse-No Rail	No Fireplaces	0	0
Refrigerated Warehouse-No Rail	Conventional Wood Stoves	0	0
Refrigerated Warehouse-No Rail	Catalytic Wood Stoves	0	0
Refrigerated Warehouse-No Rail	Non-Catalytic Wood Stoves	0	0
Refrigerated Warehouse-No Rail	Pellet Wood Stoves	0	0

5.10.2. Architectural Coatings

—	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
undefined	0.00	0.00	98,577	32,859	—

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)
Refrigerated Warehouse-No Rail	1,607,941	204	0.0330	0.0040	326,038

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Refrigerated Warehouse-No Rail	15,197,288	154,672

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Refrigerated Warehouse-No Rail	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Refrigerated Warehouse-No Rail	Cold storage	R-404A	3,922	7.5	7.5	7.5	25

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

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	annual days of extreme heat

Extreme Precipitation	6.9	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	4	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	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	4	1	1	4
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
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 (Le., 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	38
AQ-PM	13
AQ-DPM	32
Drinking Water	37
Lead Risk Housing	9.2
Pesticides	81
Toxic Releases	43
Traffic	50

Effect Indicators	—
Cleanup Sites	87
Groundwater	88
Haz Waste Facilities/Generators	94
Impaired Water Bodies	44
Solid Waste	78
Sensitive Population	—
Asthma	87
Cardio-vascular	67
Low Birth Weights	21
Socioeconomic Factor Indicators	—
Education	46
Housing	18
Linguistic	26
Poverty	11
Unemployment	48

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	94.26408315
Employed	49.30065443
Median HI	79.84088284
Education	—
Bachelor's or higher	45.52803798
High school enrollment	100
Preschool enrollment	37.79032465

Transportation	—
Auto Access	93.63531374
Active commuting	3.772616451
Social	—
2-parent households	88.50250225
Voting	54.13832927
Neighborhood	—
Alcohol availability	81.95816759
Park access	4.619530348
Retail density	10.04747851
Supermarket access	9.790837931
Tree canopy	17.28474272
Housing	—
Homeownership	66.77787758
Housing habitability	86.03875273
Low-Inc homeowner severe housing cost burden	84.11394842
Low-Inc renter severe housing cost burden	87.5914282
Uncrowded housing	56.30694213
Health Outcomes	—
Insured adults	83.11305017
Arthritis	60.6
Asthma ER Admissions	18.3
High Blood Pressure	76.3
Cancer (excluding skin)	45.0
Asthma	55.1
Coronary Heart Disease	81.5
Chronic Obstructive Pulmonary Disease	76.7
Diagnosed Diabetes	82.1

Life Expectancy at Birth	50.8
Cognitively Disabled	24.2
Physically Disabled	37.2
Heart Attack ER Admissions	32.3
Mental Health Not Good	64.8
Chronic Kidney Disease	79.8
Obesity	59.2
Pedestrian Injuries	19.6
Physical Health Not Good	79.7
Stroke	84.7
Health Risk Behaviors	—
Binge Drinking	8.9
Current Smoker	56.8
No Leisure Time for Physical Activity	74.2
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	48.8
Elderly	37.4
English Speaking	87.9
Foreign-born	26.8
Outdoor Workers	23.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	91.2
Traffic Density	51.7
Traffic Access	23.0
Other Indices	—
Hardship	32.8

Other Decision Support	—
2016 Voting	69.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	56
Healthy Places Index Score for Project Location (b)	70
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

8.1. Justifications

Screen	Justification
Land Use	Lot acreage provided by applicant; sq ft of BESS estimated using Google Earth and facility site plans.
Construction: Construction Phases	Schedule provided by Applicant.
Construction: Off-Road Equipment	Equipment provided by Applicant.

Construction: Dust From Material Movement	Information provided by Applicant.
Construction: Trips and VMT	Trip data provided by Applicant. Assuming daily onsite truck trips for watering.
Construction: On-Road Fugitive Dust	% pavement #'s based on site diameter ratioed against the default trip lengths.
Operations: Road Dust	Consistency with construction assumptions.
Operations: Solid Waste	No soild waste generation