AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT

3730 Francis Avenue Battery Storage Project
San Bernardino County, California

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Prepared for

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Acronyms and Abbreviations

AB	Assembly Bill
AQMP	Air Quality Management Plan
BESS	battery energy storage system
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
$CO2_e$	CO_2 equivalent
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutants
HFC	hydrofluorocarbon
MT	metric tons
NAAQS	National Ambient Air Quality Standards
N_2O	nitrous oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
O_3	ozone
PFC	perfluorocarbons
PM	Particulate Matter
Project	3730 Francis Avenue Battery Storage Project
ROG	reactive organic gases
RR	regulatory requirement

SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SF_6	sulfur hexafluoride
SO_2	sulfur dioxide

1.0 INTRODUCTION

1.1 Purpose and Scope

Tetra Tech has prepared an air quality analysis report to evaluate potential air quality and greenhouse gas (GHG) impacts associated with the proposed battery storage project. This analysis was prepared in accordance with the South Coast Air Quality Management District (SCAQMD) guidance. This report has been prepared to support an environmental review with San Bernardino County as lead CEQA agency for the Project. The California Air Resources Board (CARB) and the SCAQMD's methods, standards, and significance thresholds used in this analysis are considered appropriate for determining whether impacts require mitigation measures to be implemented.

Air quality impacts from construction (including demolition and grading) sources were analyzed based on the expected equipment to be used, length of time for a specific construction task, equipment power type (gasoline or diesel engine), equipment emission factors established by the U.S. Environmental Protection Agency (EPA) (EPA 2009), horsepower, load factor, and percentage of time in use. Exhaust and dust emissions from worker commutes, delivery truck, and haul truck travel were calculated based on available information regarding these activities. Fugitive dust (fine particulate matter equal to or less than 10 microns [PM_{10}] and fine particulate matter equal to or less than 2.5 microns [$PM_{2.5}$]) emissions would result from demolition, grading operations, and vehicles traveling on paved and unpaved roads. These emissions were calculated based on construction information available and provided to Tetra Tech. Motor vehicle pollutant emissions, water usage, and waste generation associated with the Project were estimated for future conditions, utilizing information on facility operations. The California Emissions Estimator Model (CalEEMod; CAPCOA 2021) was used to calculate the emissions associated with vehicle trips to and from the Project site. The total Project construction and operational emissions were compared to the South Coast Air Quality Management District (SCAQMD) threshold criteria, and a determination of significance was made.

A discussion of GHGs and their potential effects on global climate change is included in this analysis. Emissions of carbon dioxide (CO_2), a key GHG identified in Assembly Bill (AB) 32, and other major GHGs such as methane (CH_4) and nitrous oxide (N_2O) from direct and indirect Project-related sources were calculated. Tetra Tech calculated the construction related GHG emissions commensurate with available Project specific information. Standard measures for construction activities recommended by the SCAQMD were identified and incorporated as part of the Project's standard conditions.

1.2 Project Description

Capacity Power Group, LLC in coordination with ENGIE Distributed Storage Development LLC (Applicant), is proposing to construct and operate the 3730 Francis Avenue Battery Storage Project (Project), a 40-megawatt, 160 megawatt-hour stand-alone energy storage facility with a footprint of 18,160 square feet (0.42 acre), to provide reliable and flexible power to the local electrical system. The property on which the Project would be built on consists of approximately 1.5 acres of land on a parcel is currently occupied by residential structures which would be removed as part of the Project. The

proposed battery energy storage system would deliver power to the Southern California Edison (SCE) system at 66 kilovolts through a new gen-tie line that connects the Project to the existing Francis Substation. The approximately 100-foot-long gen-tie line would include a gen-tie pole on the Project site and a new pole on SCE-property at the Francis Substation. SCE would also install minor equipment upgrades to the existing Francis Substation. The Project site and the substation project construction is scheduled to take place in 2023 and 2024, and the Project is anticipated to come online in the last quarter of 2024.

The Project would support the state policies necessary to meet the California renewable energy standards. California has proceeded to advance energy storage uses to support the grid, including the passage of Assembly Bill 2514, as well as the resulting California Public Utilities Commission decision for energy procurement targets for each of the investor-owned utilities. Assembly Bill 2514 was designed to encourage California to incorporate energy storage into the electricity grid. The proposed Project would substantially increase local energy storage capacity and address the limitations of the electrical grid. Layering energy storage systems into the energy grid improves grid reliability and makes it more resilient to disturbances and peaks in energy demand. The Project and other energy storage systems are used to supply power during brief disturbances, reduce outages and associated impacts to the community, and substitute for certain large footprint transmission and disruption upgrades. To ensure electricity reliability in California, meet clean energy goals, respond to more extreme weather events, and replace electricity from retiring facilities, the California Public Utilities Commission ordered utilities to procure 11,500 megawatt of new renewable electricity resources, including a ten-fold increase in battery energy storage systems (BESS), to come online between the years 2023 and 2026, enough to power approximately 2.5 million homes (CPUC 2021).

In accordance with state priority and emphasis on bringing BESS online, the Applicant has identified the following Project Objectives:

1. Construct and operate a 40-megawatt BESS in San Bernardino County with an interconnection at the Francis Substation in a cost-competitive manner.
2. Assist California utilities in meeting their obligations under California's Renewable Portfolio Standard Program and Senate Bill 100, which calls for 100 percent of all electricity sold in California to come from carbon-free resources by 2045, including 60 percent renewables by 2030.
3. Assist California utilities in meeting their obligations under the California Public Utilities Commission's Energy Storage Framework and Design Program.
4. Provide for the economically viable, commercial financeable, and environmentally beneficial use of the site.
5. Develop a site in proximity to transmission infrastructure in order to minimize environmental impacts; and
6. Develop a BESS in San Bernardino County, which would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

The Project would contain pad-mounted energy storage units, in addition to inverters, supervisory control and data acquisition equipment, a collector substation, and an interconnection gen-tie line to the Francis Substation. The Project would also include related and supporting facilities such as on-site service roads, gates and security fencing, and temporary laydown and construction areas.

Access, including emergency access, onto the Project site would be provided from Francis Avenue through a 20-foot-wide gate that leads to the Project site. An additional emergency access gate would be located on S. East End Avenue. No Project vehicles would back into or out of the Project site and all Project driveways would always remain unobstructed. Internal access roads would be gravel or aggregate base.

1.3 Regional and Local Setting

The Project site is approximately 1 mile north of Highway 60 and approximately 2.8 miles south of Interstate 10, adjacent to the city of Pomona boundary. Delivery of material and supplies would reach the Project site through on-road truck delivery from State Route 60 to South Reservoir Street to S. East End Avenue to Francis Avenue. The SCE Francis Substation is directly north of the Project site, as shown on Figure 1. The physical address of the Project site is 3730 Francis Avenue, Chino, California 91766.

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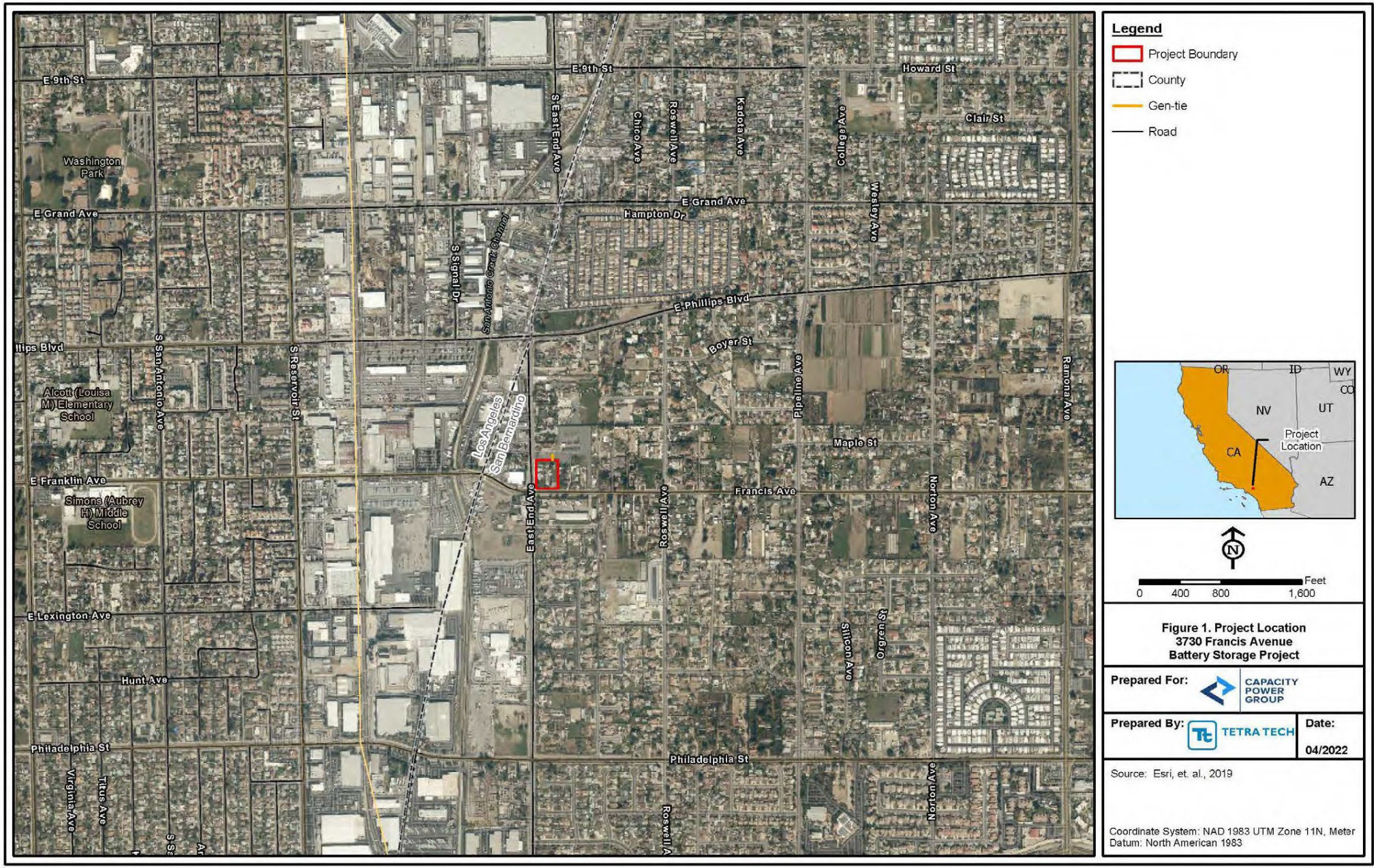

Figure 1 Project Location

2.0 AIR QUALITY

2.1 Environmental Setting

2.1.1 Climate and Topography

The Project is located in the South Coast Air Basin (SCAB). The Basin is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and major portions of Los Angeles, Riverside, and San Bernardino counties.

The topography and climate of Southern California combine to make the Basin an area highly favorable for forming air pollution. Weather conditions such as low wind speed and low mixing heights hampers the dispersion of emissions in the air basin, and frequent strong temperature inversions form a cap that traps the emissions close to the ground. The mountainous terrain surrounding the Basin further traps pollutants as they are pushed inland with the sea breeze. Additionally, the region experiences more days of sunlight than any other major urban area in the nation except Phoenix, Arizona. This abundant sunlight triggers the photochemical reactions which produce ozone and $PM_{2.5}$ (SCAQMD 2022).

2.1.2 Pollutants and Effects

The federal Clean Air Act (CAA) requires U.S. EPA to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants, listed below. EPA calls these "criteria" air pollutants because it regulates them by developing health-based (primary) or environmentally based (secondary) standards. These pollutants are summarized below. The California Air Resources Board (CARB) has also developed California Ambient Air Quality Standards for the same six criteria pollutants as well as other pollutants such as hydrogen sulfide, sulfates, and visibility reducing particles.

Ozone (O_3) is a secondary pollutant that is formed from the reaction of nitrogen oxides and volatile organic compounds (also called reactive organic gases [ROG]) in the presence of sunlight. Ozone exists naturally in the stratosphere, shielding Earth from harmful ultraviolet radiation. However, at ground-level, ozone causes adverse health effects and is a major component of smog. Both short-term and long-term exposures to ozone have been linked to respiratory effects. Upon coming into contact with the respiratory tract, it can react with tissues and cause damage to airways. Breathing high concentrations of Ozone have been tied to respiratory ailments such as asthma, chronic bronchitis, and emphysema and increased susceptibility to lung infection especially in individuals with pre-existing lung disease, and certain nutritional diseases (SCAQMD 2022a). Additionally, increased ozone levels can also cause damage to natural ecosystems, agricultural crops, and materials such as rubber, paint, and plastics. The main sources of nitrogen oxides (NO_X) and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines), the evaporation of solvents, paints, and fuels, and biogenic sources. High levels of ozone are typically observed from April through October, when longer days and more intense sunlight drives the photochemical reactions that form ozone. Pollutant concentrations are also influenced by mixing and ventilation. Stagnant summer days under high pressure limit ventilation of the Basin and allow for the accumulation of pollution

(SCAQMD 2022). Ozone is regulated under the NAAQS and California Ambient Air Quality Standards (CAAQS).

Reactive organic gases (ROG) are composed of hydrocarbon compounds that contribute to the formation of smog through atmospheric chemical reactions. Since they are not considered a criteria pollutant, there are no state or national ambient air quality standards. ROG are emitted from fuel combustion and industrial and agricultural processes. Compounds that make up ROG are often evaluated as part of a toxic risk assessment under Assembly Bill (AB) 2588 provisions, a California law that regulations toxic air contaminants. Some examples of such compounds that are known to cause health effects include benzene, toluene, ethylbenzene, and xylenes (abbreviated BTEX), 1,3 butadiene, formaldehyde, and perchloroethylene. Both cancer and non-cancer effects have been linked to ROGs (SCAQMD 2022a). In the basin, area sources, including the consumer products are the major contributors to ROG emissions (SCAQMD 2022). The Office of Environmental Health Hazard Assessment (OEHHA) maintains information about the various health effects caused by specific toxics. ROGs are regulated as precursors to ozone under the NAAQS and CAAQS.

Nitrogen Oxides (NO_x) are a family of gaseous nitrogen compounds that are created during combustion processes and are major contributors to smog formation and acid deposition. These compounds result in a brownish-red cast to the atmosphere and causes reduced visibility (SCAQMD 2022). It is a precursor to the formation of ozone and particulate matter. Nitrogen dioxide (NO_2) is regulated directly under the NAAQS and California Ambient Air Quality Standards (CAAQS) and NO_x is regulated as a precursor to ozone under NAAQS and CAAQS. In addition to its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. Epidemiologic studies that were conducted to evaluate the associations between exposure to NO_2 have provided robust evidence that link long-term exposure to NO_2 with respiratory effects such as decreased lung function and increases in airway responsiveness and pulmonary inflammation (SCAQMD 2022a). Short term exposure can exacerbate existing respiratory illness such as asthma. Mobile sources such as heavy-duty trucks, ships, airplanes, locomotives, and construction equipment make up for 80 percent of NO_x emissions in the basin. Although the Basin is in attainment of the State and federal standards, NO_2 is still of concern since oxides of nitrogen (NO_x) are precursors to both ozone and particulate matter (SCAQMD 2022). NOx is regulated as a precursor to ozone under NAAQS and CAAQS.

Particulate Matter (PM) is comprised of solid particles and liquid droplets, including smoke, dust, organic compounds, soil particles, and aerosols. Particles that are 10 micrometers in diameter or smaller (also called respirable particles) are a potential human health concern because they can be inhaled and deposited throughout the upper and lower respiratory system, depositing in both airways and gas-exchange areas of the lung. The major types of health effects associated with particulate matter include Increased mortality, respiratory infections, effects on lung functions etc., In addition, new evidence is suggestive of metabolic, nervous system, and reproductive and developmental effects for short-term and long-term exposure to $PM_{2.5}$ (SCAQMD 2022a). They can be emitted directly to the atmosphere as well as be formed by chemical reactions among precursors from mobile, stationary, and area sources, with the largest portion resulting from fuel combustion. Particulate matter can be categorized based on their size:

- Inhalable coarse particles ($PM_{2.5}$ to PM_{10}) are between 2.5 and 10 micrometers in diameter. Mechanical processes such as tire wear, industrial processes such as cutting and grinding, and resuspension of particles from the ground or road surfaces by wind and human activities, such as agricultural, mining, and construction operations (particularly important in rural areas) are the main sources of PM10 (SCAQMD 2022a).
- Fine particles ($PM_{2.5}$) are 2.5 micrometers in diameter or smaller, and are generally emitted by combustion sources like vehicles, power generation, industrial processes and wood burning. Most PM2.5 in the Basin is formed from secondary processes. High PM2.5 levels tend to occur most frequently in fall and winter when stagnant conditions trap pollutants and enhance formation of PM2.5 in the atmosphere (SCAQMD 2022).

Both PM_{10} and $PM_{2.5}$ are regulated under the NAAQS and CAAQS.

Carbon Monoxide (CO) is an odorless, colorless gas formed by incomplete combustion from sources such as internal combustion engines, fires, improperly adjusted gas and oil appliances, water heaters etc. Over 80 percent of the CO emitted in urban areas is contributed by mobile sources (SCAQMD 2022). When inhaled at high concentrations, CO combines with hemoglobin in the blood to form Carboxyhemoglobin (COHb). This compound reduces the oxygen-carrying capacity of the blood and is responsible for the toxic effects of CO. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as fetuses. Even healthy people exposed to high CO concentrations can experience chest pain, headaches, dizziness, fatigue, unconsciousness, and even death (SCAQMD 2022a). CO problems tend to be localized with nonattainment areas designated in urban areas rather than the entire basin. With the introduction of new automotive emission controls and fleet turnover, emissions from motor vehicles have been declining. The highest concentrations of CO continued to be recorded in the areas of Los Angeles County, where vehicular traffic is most dense (SCAQMD 2022). CO is regulated under the NAAQS and CAAQS.

Sulfur Dioxide (SO_2) is a strong smelling, colorless gas formed by the combustion of fossil fuels. It has potential to damage materials and can have health effects at high concentrations. Ocean-going vessels, which may use oil high in sulfur content, can be major sources of SO_2. SO_2 and other sulfur oxides contribute to ambient $PM_{2.5}$ (SCAQMD 2022).SO_2 can cause a variety of respiratory symptoms such as decreased lung function and increased airway resistance. Controlled laboratory studies involving human volunteers have clearly identified asthmatics as a very sensitive group to the effects of ambient SO_2 exposures (SCAQMD 2022a). The County is in attainment of both the Federal and California standards for SO_2. The use of low-sulfur fuel has minimized problems with this pollutant. SO_2 is regulated under the NAAQS and CAAQS.

Diesel Particulate Matter (DPM): The mixture of solid particles from equipment with diesel engines are collectively known as diesel particulate matter (DPM). These include many known or suspected cancer-causing substances, such as benzene, arsenic, and formaldehyde. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any toxic air contaminant evaluated by OEHHA. ARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles. It also contains other harmful

pollutants, including NO_x. Diesel exhaust particles and gases are suspended in the air, so exposure to this pollutant occurs whenever a person breathes air that contains these substances. Exposure to this pollutant is highest near roads and freeways, truck loading and unloading operations, diesel-powered machinery operations. Exposure to diesel exhaust can have immediate health effects such as irritation to the eyes, nose, throat, and lungs. It can also cause coughs, headaches, light-headedness, and nausea (OEHHA 2023).

2.1.3 Sensitive Receptors

Sensitive receptors are segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems related to respiratory distress). Land uses often identified as sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. The nearest sensitive receptor is on a property adjacent to the Project site,a residential structure located 30 feet to the east of the Project boundary. The next closest sensitive receptors are residential structures more than 85 feet away.

Construction activities occurring near sensitive receptors receive a higher level of preventive planning for controlling emissions and fugitive dust. The greatest potential for exposure to air pollutants would occur during construction, when the ground would be disturbed from grading and delivery of materials. The construction emissions presented in this analysis are based on worst-case conditions, assuming maximum construction activity would occur simultaneously. In reality, exposure to emissions would vary substantially throughout construction, and would depend on the staging of the work being conducted, location of work relative to receptors, and weather conditions. Emissions during operation would be minimal and would involve workers coming to the site for maintenance. No stationary sources will operate at the site during operation.

2.2 Regulatory Setting

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

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

2.2.1 Federal Regulations

2.2.1.1 Criteria Air Pollutants

The CAA (42 United States Code Section 7401-7671q) is a comprehensive Federal law that regulates air emissions from area, stationary, and mobile sources and requires the adoption of the NAAQS to

protect public health and welfare from the effects of air pollution. The Federal CAA Amendments of 1990 (1990 CAAA) required that the EPA review all NAAQS with respect to health impacts and propose modifications or new rules as appropriate. In addition, the 1990 CAAA are associated with the attainment and maintenance of air quality standards, permits and enforcement, toxic air pollutants, acid deposition, stratospheric ozone protection and motor vehicles and fuels.

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

2.2.1.2 Hazardous Air Pollutants

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

2.2.2 State Regulations

2.2.2.1 Criteria Air Pollutants

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

Table 1. State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12 µg/m³	15 µg/m³	

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO2)[8]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemilumine-scence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[9]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)[9]	—	
	Annual Arithmetic Mean	—		0.30 ppm (for certain areas)[9]	—	

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
Lead (Pb)[10, 11]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[9]	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates (SO_4)	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	24 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: California Air Resources Board (https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf,updated 5/4/2016 and U.S. Environmental Protection Agency (https://www.epa.gov/environmental-topics/air-topics accessed February 2023]

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

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

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

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

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

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

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

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

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

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

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

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

The CCAA requires each air pollution control district of an air basin designated as nonattainment of state ambient air quality standards to prepare and submit a plan for attaining and maintaining state standards. After further review of the relationship between fine particulate matter and human health effects, the CARB adopted new state standards on June 20, 2002 for $PM_{2.5}$ that are more stringent than the federal standards. No specific control programs are in place to achieve this more stringent standard. However, it does represent an air quality goal to dramatically reduce the adverse health effects from small-particle air pollution.

2.2.2.2 Toxic Air Contaminants

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

In 1998, California identified diesel PM as a toxic air contaminant (TAC) based on its potential to cause cancer. In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The regulation was anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. In 2020, CARB adopted the Advanced Clean Truck Regulations that requires truck manufacturers to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, every new truck sold in California will be zero-emission.

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

California Health and Safety Code Section 41700

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

2.2.3 Regional Regulations

2.2.3.1 South Coast Air Quality Management District

The SCAQMD regulates air pollution control for San Bernardino County as well as for Orange, Riverside and the urban portions of Los Angeles counties. It has primary authority to reduce local emissions by adopting control regulations for stationary sources including point sources, such as power plants and refineries, and selected area sources, such as gas stations, dry cleaners, and paints and coatings. The SCAQMD also has limited authority to address mobile sources through incentive programs and implementation of indirect source and transportation control measures (e.g., employee ridesharing rules).

SCAQMD regulations consists of rules which address specific topics within the regulation. Rules applicable to this project include:

Rule 402. 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, or have a natural tendency to cause, injury or damage to business or property (SCAQMD 2023a).

Rule 403. Any activity capable of generating fugitive dust during active operations requires best available control measures to be applied. The project involves a demolition phase and as per the guidance provided, the site will be watered in sufficient quantities to prevent the generation of visible dust plumes (SCAQMD 2023b). Since the disturbed surface area is 1.5 acres, the project does not qualify as a “large operation” as per SCAQMD.

The SCAQMD has developed clean air plans to bring the area into compliance with federal and state clean air standards. Currently, the region is not in attainment of the ozone and two of the $PM_{2.5}$ standards.

The Air Quality Management Plan (AQMP) demonstrates attainment of the federal national ambient air quality standards by providing the latest control strategies to achieve attainment expeditiously. The Ozone Plan was approved in 1999 as an Amendment to the 1997 Ozone SIP. The Clean Communities Plan (formerly known as the Air Toxics Control Plan) was approved on November 5, 2010 and includes strategies to reduce toxic emissions and risk from both mobile and stationary sources, with an emphasis on cumulative impacts. The Draft Vision for Clean Air: A Framework for Air Quality and Climate Planning is a collaboration between SCAQMD, CARB, and the San Joaquin Valley Air Pollution Control District that examines how zero- and near-zero emission technologies can meet 2023 and 2032 air quality standards and 2050 climate goals (SCAQMD 2022).

LOCAL Policies

2.2.3.2 San Bernardino County Plan Updated October 2020

The Project site is located within unincorporated San Bernardino County; development in such areas is governed by the policies, procedures, and standards set forth in the San Bernardino County General Plan (San Bernardino County, 2020). On October 27, 2020, the San Bernardino County Board of Supervisors adopted a Countywide Plan which includes a new set of plans and tools for its unincorporated communities. The San Bernardino County is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. Air quality impacts are addressed in the Natural Resources Element of the Plan, which includes Air Quality Goal NR-1 and policies to meet Goal NR-1:

Goal NR-1: Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally generated emissions.

To achieve NR-1, the County Plan will implement the following policies:

- Policy NR-1.1 **Land use.** We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicle miles traveled and greenhouse gas emissions.
- Policy NR-1.2 **Indoor air quality.** We promote the improvement of indoor air quality through the California Building and Energy Codes and through the provision of public health programs and services.
- Policy NR-1.3 **Coordination on air pollution.** We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source.
- Policy NR-1.4 **Military coordination on air quality.** We collaborate with the military to avoid or minimize impacts on military training and operations from air pollution and haze.
- Policy NR-1.5 **Sensitive land uses.** We consider recommendations from the California Air Resources Board on the siting of new sensitive land uses and exposure to specific source categories.
- Policy NR-1.6 **Fugitive dust emissions.** We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions.
- Policy NR-1.7 **Greenhouse gas reduction targets.** We strive to meet the 2040 and 2050 greenhouse gas emission reduction targets in accordance with state law. The renewable energy Project will assist the County in meeting GHG reduction targets.
- Policy NR-1.8 **Construction and operations.** We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.
- Policy NR-1.9 **Building design and upgrades.** We use the CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to

incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.

Policies NR-1.6, 1.7, and 1.8 will apply to the Project.
Measures to reduce construction-related emissions in the County Plan could include, but are not limited to:

- Use of construction equipment rated by the United States Environmental Protection Agency as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower. A list of construction equipment by type and model year shall be maintained by the construction contractor on-site and available for County review upon request.
- Ensure construction equipment is properly serviced and maintained to the manufacturer's standards.
- Use of alternative-fueled or catalyst-equipped diesel construction equipment, if available and feasible.
- Clearly posted signs that require operators of trucks and construction equipment to minimize idling time (e.g., five-minute maximum).
- Preparation and implementation of a fugitive dust control plan that may include the following measures:
    - Disturbed areas (including storage piles) that are not being actively utilized for construction purposes shall be effectively stabilized using water or chemical stabilizer/suppressant or covered with a tarp or other suitable cover (e.g., revegetated).
    - On-site unpaved roads and offsite unpaved access roads shall be effectively stabilized using water or chemical stabilizer/suppressant.
    - Land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled utilizing application of water or by presoaking.
    - Material shall be covered or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained when materials are transported off-site.
    - Operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)
    - Following the addition of materials to or the removal of materials from the surface of outdoor storage piles, said piles shall be effectively stabilized to prevent fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
    - Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
    - Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.
- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the project area.

2.3 Regional and Local Air Quality Conditions

2.3.1 San Bernardino County (South Coast Air Basin) Attainment Status

In an effort to protect human health and welfare, the CARB and EPA have established Ambient Air Quality Standards. Areas are considered in "attainment" if standards are met and "nonattainment" if they are not met. For federal designations, nonattainment status is further classified as marginal, moderate, serious, severe or extreme. The Project is located in a portion of San Bernardino County that is part of the South Coast Air Basin (SCAB). The SCAB has been designated as a non-attainment area for O_3, PM_{10}, and $PM_{2.5}$ as it does not meet California Ambient Air Quality Standards (CAAQS) for certain pollutants regulated under the Federal Clean Air Act. Conditions within the SCAB also fail to meet National Ambient Air Quality Standards (NAAQS) for O_3 and $PM_{2.5}$ and therefore the SCAB is considered to be a Federal non-attainment area for these pollutants. Table 2 lists criteria air pollutants and their current attainment status in the SCAB.

Table 2. San Bernardino County (South Coast Air Basin) Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone (1-Hour)	No federal standard	Nonattainment
Ozone (8-Hour)	Nonattainment (Extreme)	Nonattainment
NO_2	Attainment (Maintenance)	Attainment
CO	Attainment (Maintenance)	Attainment
PM_{10}	Attainment (Maintenance)	Nonattainment
$PM_{2.5}$	Nonattainment (Serious)	Nonattainment
SO_2	Attainment/Unclassified	Attainment
Lead	Attainment/Unclassified	Attainment
Hydrogen Sulfide	No Federal Standard	Attainment
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: CARB 2022a

2.3.2 Local Ambient Air Quality

Table 3. Local Ambient Air Quality Monitoring Data for the Years 2019–2021

Averaging Period	2019	2020	2021
Ozone (O_3) – *924 N. Garey Ave., Pomona, California Monitoring Station (AQS Site ID: 06-037-1701)*			
1-hour Maximum Concentration (ppm)	0.098	0.180	0.120
Number of days exceeding CAAQS = **0.09 ppm**	3	51	27
8-hour Maximum Concentration	0.083	0.124	0.092
Number of days exceeding CAAQS = **0.070 ppm**	12	84	41
Number of days exceeding NAAQS = **0.070 ppm**	12	84	41
Nitrogen Dioxide (NO_2) – *924 N. Garey Ave., Pomona, California Monitoring Station (AQS Site ID: 06-037-1701)*			
1-hour Maximum Concentration (ppb)	64.4	67.9	71.4
Number of days exceeding CAAQS = **180 ppb**	0	0	0
Number of days exceeding NAAQS = **100 ppb**	0	0	0
Annual Average Concentration (ppm) (**53 ppb**)	17	18	18
Carbon Monoxide (CO) – *924 N. Garey Ave., Pomona, California Monitoring Station (AQS Site ID: 06-037-1701)*			
1-hour Maximum Concentration (ppm)	1.7	1.5	1.7
Number of days exceeding CAAQS = **20 ppm**	--	--	--
Number of days exceeding NAAQS = **35 ppm**	0	0	0
8-hour Maximum Concentration	1.3	1.1	1.3
Number of days exceeding CAAQS = **9.0 ppm**	--	--	--
Number of days exceeding NAAQS = **9.0 ppm**	0	0	0
Coarse Particulate Matter (PM_{10}) – *5130 Poinsettia Place, Mira Loma, California Monitoring Station (AQS Site ID: 06-065-8005)*			
24-hour Maximum Concentration (µg/m^3)	118.8	162.5	98.7
Number of days exceeding CAAQS = **50 µg/m^3**	14	16	15
Number of days exceeding NAAQS = **150 µg/m^3**	0	1	0
Annual Average Concentration (state method) (µg/m^3) (**20 µg/m^3**)	38.9	52.2	39.6
Fine Particulate Matter ($PM_{2.5}$) – *Ontario-Route 60 Near Road, California Monitoring Station (AQS Site ID: 06-071-0027)*			
24-hour Maximum Concentration (µg/m^3)	57.7	59.2	84.1
Number of days exceeding NAAQS = **35 µg/m^3**	6	14	14
Annual Average Concentration (µg/m^3) (**12 µg/m^3**)	15.5	15.2	17.8
Sulfur Dioxide (SO_2) – *14360 Arrow Blvd., Fontana, California Monitoring Station (AQS Site ID: 06-071-2002)*			
1-hour Maximum Concentration (ppm)	2.4	2.5	5
Number of days exceeding NAAQS = **75 ppb**	0	0	0
24-hour Maximum Concentration (ppm)	0.9	0.9	0.9
Number of days exceeding NAAQS = **140 ppb**	0	0	0
Annual Average Concentration (ppm) (**30 ppb**)	0.41	0.41	0.24

µg/m^3 – microgram per cubic meter; CAAQS – California ambient air quality standards; NAAQS – National ambient air quality standards; ppb – parts per billion; ppm – parts per million

*insufficient data available

Sources: CARB 2023; EPA 2022

The poor air quality in the air basin is the result of cumulative emissions from motor vehicles, off-road equipment, commercial and industrial facilities, and other emissions sources. Projects that emit these pollutants or their precursors (i.e., volatile organic compounds and NO_x for ozone) potentially contribute to poor air quality.

For most construction projects, motor vehicles and construction equipment make up the bulk of GHG emissions. The primary GHGs emitted by motor vehicles and construction include CO_2, CH_4, and N_2O.

2.4 Significance Criteria and Methodology

2.4.1 Thresholds of Significance

2.4.1.1 California Environmental Quality Act Guidelines

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

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; or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

2.4.1.2 South Coast Air Quality Management District

The SCAQMD provides significance thresholds for criteria pollutants [and GHGs]. These significance thresholds (revised March 2023) are based on either daily or total annual air pollutant emissions and thresholds vary for construction and operation. If emissions exceed the thresholds, then a project is considered to have a significant impact on air quality and must incorporate all feasible mitigation measures.

For the purposes of this analysis, an impact is considered significant if a project:

- Generates total emissions (direct and indirect) in excess of the thresholds given in Table 4;
- Generates a violation of any ambient air quality standard when added to the local background;
- Does not conform with the applicable attainment or maintenance plan(s); or
- Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to ten in a million, and/or a health index (non-cancerous) greater than or equal to one.

Table 4. SCAQMD Significance Thresholds

Mass Daily Thresholds (lbs/day)		
Pollutant	**Construction**	**Operation**
Carbon Monoxide (CO)	550	550
Nitrogen Oxide (NO_x)	100	55
Volatile Organic Compounds (VOCs)	75	55
Oxides of Sulfur (SO_X)	150	150
Particulate Matter (PM_{10})	150	150
Particulate Matter ($PM_{2.5}$)	55	55
Lead (Pb)	3	3
GHG Threshold		
10,000 MT/yr. CO_2eq for industrial facilities		

Source: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed February 2023.

In addition to these thresholds, SCAQMD developed Localized Significant Thresholds (LSTs), applicable to projects less than five acres, as a part of their environmental justice program to focus on localized effects of air quality. This methodology involves using a mass rate look-up table by source receptor area (SRA) that can be used by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts (SCAQMD 2008a). LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area.

The thresholds are only applicable to the following criteria pollutants: oxides of nitrogen, carbon monoxide, particulate matter less than 10 microns in aerodynamic diameter (PM_{10}) and particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$). Table 5 represents the LSTs that were used for the purpose of this project, which were determined based on a one-acre Project site in the Southwest San Bernardino Valley SRA and a receptor distance of 30 feet (~9 meters) from the project boundary. Since the receptor distance is less than 25 meters, the LST for receptors located at 25 meters was used as per SCAQMD's LST Methodology,

Table 5. Localized Significance Thresholds

Mass Daily Thresholds (lbs/day)		
Pollutant	**Construction**	**Operation**
Carbon Monoxide (CO)	863	863
Nitrogen Oxide (NO_x)	118	118
Particulate Matter (PM_{10})	5	2
Particulate Matter ($PM_{2.5}$)	4	1

2.4.2 Approach and Methodology

Air quality impacts associated with the proposed Project are related to emissions that would occur during construction and subsequent operation of the proposed Project. The principal sources of

pollutants during construction would be earth-moving activities, construction equipment, trucks bringing materials to the site, and construction crew commuting vehicles. There are numerous air quality modeling tools available to assess air quality impacts of the Project. Emissions were estimated based on the air emission modeling software package CalEEMod (Version 2020.4.0). The model contains data specific to each California air basin. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use and water use. For calculation of on-road (off-site) mobile sources, CalEEMod uses the EMFAC2017 emissions model.

2.4.2.1 Construction

The Project Owner's construction schedule and anticipated construction equipment and vehicles were used to determine emissions. The construction will occur in the following stages:

Table 6. Construction Schedule

Stage	Description	Duration (Days)
1	Demolition, Site and Substation Preparation and Grading	40
2	Energy Storage and Substation Installation	100
3	Gen-Tie Construction and Installation	50
4	Testing and Commissioning	40

Construction would begin in 2023 and last approximately 11 months. The on-site construction workforce would consist of laborers, craftspeople, supervisory personnel, and support personnel. The on-site assembly and construction workforce are expected to reach a peak of approximately 20 workers; the average number of workers on-site is anticipated to be approximately 10-20, depending on the construction activity, as shown in Table 7.

Construction vehicles would access the Project site from Francis Avenue. Vehicle use of area roadways resulting from Project construction activities would be limited to the 9-month construction period, as workers and materials are transported to and from the Project site. Construction workers would be encouraged to carpool in order to minimize vehicle trips. Typical equipment during construction would include scrapers, dozers, tractors, backhoes, excavators, and other common types of construction equipment. A maximum of approximately 14 average daily truck trips (during site preparation and grading) and 40 average daily worker vehicle trips (during energy storage enclosure installation) are anticipated, as shown in Table 7.

Table 7. Construction Scenario Assumptions

Construction Phase	Equipment			Daily Worker Vehicle Trips[1]	Daily Vendor Trips[1]	Total Haul Truck Trips[2]
	Equipment Type	Quantity	Usage Hours			
Demolition	Graders	1	8	20	4	926
	Off-Highway Trucks	2	8			
	Rollers	1	8			
	Rubber Tired Dozers	1	8			

	Rubber Tired Loaders	1	8			
	Skid Steer Loaders	1	8			
	Tractors/Loaders/Backhoes	1	8			
	Trenchers	1	8			
	Air Compressor	2	8			
	Generator	2	24			
	Dump Truck	1	8			
	Water Trucks	1	8			
Site and Substation Preparation and Grading	Air Compressors	4	8	20	4	60
	Graders	1	8			
	Off-Highway Trucks	2	8			
	Rollers	1	8			
	Rubber Tired Dozers	1	8			
	Rubber Tired Loaders	1	8			
	Skid Steer Loaders	1	8			
	Tractors/Loaders/Backhoes	1	8			
	Trenchers	1	8			
	Air Compressor	2	8			
	Generator	2	24			
	Dump Truck	1	8			
	Water Trucks	1	8			
Energy Storage Enclosure and Substation Installation	Backhoe	1	8	40	12	200
	Compactor	1	8			
	Air Compressor	1	8			
	Crane	1	8			
	Excavator	1	8			
	Forklift	1	8			
	Loader	1	8			
	Generator	2	8			
	Roller	1	8			
	Tractor	1	8			
Gen-Tie Installation and Construction	Air Compressor	2	8	40	4	100
	Crane	2	8			
	Forklift	2	8			
	Generator	2	24			
	Pumps	2	8			
	Welder	2	8			
Testing and Commissioning	Off-Highway Trucks	2	8	20	0	0

[1]Number reflects daily one-way trips.

[2]Number reflects total trips per phase.

Construction would occur primarily during daylight hours between 7:00 am and 7:00 pm. Workers would reach the site using existing roads.

During construction, an estimated 270,000 gallons of non-potable water (approximately 0.8 acre-feet) are anticipated to be required for dust suppression and other purposes. Water would be from an onsite municipal supply.

2.4.2.2 Operation

Once constructed, the Project would operate seven days per week (365 days per year). The facility would be operated by the Applicant or an affiliated company remotely. Operations and maintenance would require one or two workers in a light utility truck to visit the facility on a weekly basis. Heavy equipment would not be utilized during normal operation. During operation of the Project substation, operation and maintenance staff would visit the substation periodically for switching and other operation activities.

Periodic augmentation of batteries within the Project site may occur. Only occasional, on-site maintenance is expected to be required following commissioning, including replacement of inverter power modules, filters, and miscellaneous electrical repairs on an as-needed basis. Maintenance trucks would be utilized to perform routine maintenance, including but not limited to equipment testing, monitoring, repair, routine procedures to ensure service continuity, and standard preventative maintenance. Typically, one major maintenance inspection would take place annually. The expected maintenance would generate little traffic during operation.

Expected water usage would be less than 100,000 gallons or 0.3 acre-feet per year for irrigation of landscaping. No permanent sanitary facilities would be required during operations, such that no sewer connection would be required.

2.4.2.3 Emission Calculation Assumptions

On-Road Equipment Assumptions

1. Trip lengths reflect CalEEMod defaults for the Project location.
2. Exhaust emissions for on-road equipment were calculated using CalEEMod for years 2023 and 2024.
3. All on-road construction equipment emissions were determined using on-road emission factors; none were estimated using off-road emission factors.
4. Fugitive dust emissions were estimated for both paved roads and unpaved roads, where applicable.

A summary of on-road equipment is provided in Table 7.

Off-Road Equipment Assumptions

1. Exhaust emissions were calculated using the CalEEMod for years 2023 and 2024.
2. Fugitive dust emissions were estimated for demolition and grading activities and truck loading using CalEEMod.
3. Haul trips for demolition were calculated using CalEEMod defaults and estimated water truck trips.

A list of the types and quantity of construction equipment is provided in Table 7.

Construction Information and Assumptions

Construction-related emissions are based on the following:

1. The site total acreage inside the proposed fence-line is 1.5 acres.
2. The Project includes demolition of existing buildings (9,160 sq. ft)
3. Construction activity is expected to last for a total of 11 months.

Combustion

Combustion emissions during construction will result from:

1. Exhaust from the on-site diesel construction equipment;
2. Exhaust from on-site water trucks used to control construction dust emissions;
3. Exhaust from pickup trucks and diesel trucks used to transport workers and materials around the project site;
4. Exhaust from diesel trucks used to deliver equipment and materials; and
5. Exhaust from automobiles used by workers to commute to the project site.

Fugitive Dust

Fugitive dust emissions during construction will result from:

1. Dust entrained during demolition, grading, and mobilization at the construction site; and
2. Dust entrained during off-site travel on paved and unpaved surfaces.

2.5 Impact Analysis

2.5.1 Construction Emissions

To determine the potential worst-case daily construction impacts, exhaust and dust emission rates have been evaluated for each source of emissions. Worst-case daily dust emissions are expected to occur during grading and other earth-moving activities. The worst-case daily exhaust emissions are expected to occur during on-site use of construction equipment. Daily emissions are based on the maximum equipment mix and use rates during the peak construction day. Annual emissions are based on equipment mix and use rates through the duration of the construction time frame.

Project construction emissions were calculated using the CalEEMod. Table 8 presents the estimated maximum annual emissions generated during construction of the Project. The annual emissions conservatively assume that all of construction emissions occur in a single calendar year . If construction were to start in the middle of the year, then construction emissions would occur over more than one calendar year and emissions would be spread over two calendar years. Table 9 presents the estimated maximum daily on-site and off-site emissions generated during construction of the Project. While the total maximum daily emissions are compared to SCAQMD Regional Thresholds, only on-site emissions are compared to LSTs. Construction emissions from the Project are expected to be well below the SCAQMD daily significance thresholds and the LSTs. Therefore, no

mitigation is required. However, in accordance with SCAQMD Regulation 4, Best Available Control Measures (BACM) outlined in Table 1 of Rule 403 have resulted in fugitive dust emissions reductions. The mitigated scenario incorporates watering of disturbed areas up to three times per day. Detailed CalEEMod output is provided in Appendix A.

During construction, additional vehicle traffic includes approximately 14 average daily truck trips and 20 workers commuting to the site. Construction workers would be encouraged to carpool to in order to minimize vehicle trips. Due to the limited traffic, CO hotspots are not expected due to construction at the site.

Table 8. Estimated Maximum Annual Construction Criteria Air Pollutant Emissions

Total Construction Period	Emissions (tons per year)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Unmitigated	0.37	3.19	3.64	0.01	0.29	0.20
With BACM	0.37	3.19	3.64	0.01	0.23	0.17
No Annual Significance Thresholds	--	--	--	--	--	--

Table 9. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Maximum Daily	Emissions (lbs/day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Unmitigated (Total)	6.30	63.62	55.28	0.18	10.40	6.16
Onsite[1]	5.99	52.61	51.33	0.12	8.42	5.55
Offsite	0.31	11.00	3.95	0.05	1.98	0.62
With BACM (Total)	6.30	63.62	55.28	0.18	6.69	4.14
Onsite[1]	5.99	52.61	51.33	0.12	4.71	3.53
Offsite	0.31	11.00	3.95	0.05	1.98	0.62
SCAQMD Regional Threshold	*75*	*100*	*550*	*150*	*150*	*55*
SCAQMD Localized Significance Threshold (LST)	--	*118*	*863*	--	*5*	*4*
Thresholds Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

[1] For comparison to SCAQMD Localized Significance Threshold (LST)

2.5.2 Operational Emissions

Project operational emissions were calculated using CalEEMod. Operational emissions result from workers visiting the site for maintenance and energy consumption for lighting and HVAC for thermal management of the batteries. Table 10 presents the estimated maximum annual operational emissions. Table 11 presents the estimated maximum daily operational emissions. Operational emissions from the project are expected to be well below the SCAQMD daily regional and localized significance thresholds. Detailed CalEEMod output is provided in Appendix A.

Table 10. Estimated Maximum Annual Operational Criteria Air Pollutant Emissions

Maximum Annual	Emissions (tons per year)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Energy, Mobile, Offroad, Water	0.01	0.08	0.08	0.0004	0.01	0.004
No Annual Significance Thresholds	--	--	--	--	--	--

Table 11. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Maximum Daily	Emissions (lbs/day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Energy, Mobile, Offroad, Water	0.5	3.5	3.4	0.01	0.2	0.1
SCAQMD Regional Threshold	*55*	*55*	*550*	*150*	*150*	*55*
SCAQMD Localized Significance Threshold (LST)	--	*118*	*863*	--	*2*	*1*
Thresholds Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

2.5.1 CEQA Checklist

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

No impact. The Project would be subject to the SCAQMD's AQMP, which contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections.

The Project will be consistent with the AQMP, which is primarily concerned with long-term influence on air quality in the Basin. Neither the implementation of the Project nor its operation would result in long-term regional impacts. In addition, because the proposed Project would not result in a change in dwelling units or occupants or activities, it is not in conflict with the AQMP restrictions relative to land use and transportation. The Project will comply with SCAQMD Rules 402 (Nuisance) and 403 (fugitive dust), which would implement all feasible BACM required controls for PM_{10} and $PM_{2.5}$. In addition, the Project would not result in a long-term increase in the number of trips or increase the overall vehicle miles traveled in the area. Vendor truck and worker vehicle trips would be generated during the proposed construction activities but would be limited after construction is completed. Daily and annual emissions are below the significance thresholds for all pollutants. During the longer-term operational phase, the Project would have routine inspection and maintenance activities that would result in a net increase in emissions. However, the increase in emissions would not exceed any significance threshold or violate any SCAQMD rule regulation.

2.5.1.2 Would the Project 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?

Less Than Significant Impact. The Project site is located in a region that is in non-attainment for O_3, PM_{10}, and $PM_{2.5}$. Construction and operational emissions for the proposed Project are presented in Tables 8 through 11, which included conservative assumptions for equipment and vehicle mix and a worst-case construction schedule. Construction emissions include operation of on-site construction equipment, fugitive dust from site disturbance activities, and vehicle travel by construction workers, deliveries, and hauling during construction. Once construction is complete, there would only be occasional and minor vehicle traffic, water use, energy use, or any activities resulting in air emissions. The CalEEMod model runs, which estimate the construction and operational emissions in detail, are presented in Appendix A.

The incremental increase in regional emissions from Project activities would fall below SCAQMD significance thresholds. The Project will not result in the violation of air quality standards or contribute substantially to an existing or projected air quality violation. Under this condition, the Project would not make a cumulatively considerable contribution during construction and operation. Therefore, impacts would be less than significant.

The Project area is non-attainment for the CAAQS for 1-hour ozone, 8-hour ozone, PM_{10}, and $PM_{2.5}$. The Project area is also non-attainment for the 8-hour ozone and $PM_{2.5}$ NAAQS. SCAQMD requires the use of the air district's daily and annual significance thresholds to address pollution sources associated with general construction activities, such as the operation of on-site construction equipment, fugitive dust from site grading activities, and travel by construction workers. Although the Project site is located in a region that is in non-attainment for O_3, PM_{10} and $PM_{2.5}$, the cumulative emissions associated with the Project would not be considerable as the emissions would fall below SCAQMD thresholds. Under this condition, the Project would not make a cumulatively considerable contribution during construction or operations.

2.5.1.3 Would the Project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. As described in the previous section, construction and operation of the Project would not result in emissions of criteria pollutants in excess of established thresholds. SCAQMD also identifies significance thresholds for toxic air contaminants (TAC) that are based on localized impacts. These include a maximum incremental lifetime cancer risk of 10 in a million or more, a cancer burden (i.e., estimated potential increase in cancer diagnoses) of 0.5 or more, and a chronic and acute hazard index (i.e., ratio of concentrations to Reference Exposure Levels [RELs]) of one or more. The primary TAC emitted from construction activities is diesel PM; however, because emissions of TACs from diesel-powered construction equipment are expected to be minimal, intermittent, in compliance with all CARB heavy-duty construction equipment rules and of short duration, the Project is not expected to substantially increase ambient concentrations of TACs regionally or locally. Diesel PM is expected to be negligible during operations due to the infrequent site visits for maintenance. Therefore, the Project would not expose sensitive receptors to substantial

pollutant concentrations. As such, localized impacts to off-site sensitive receptors would be less than significant.

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

Less Than Significant Impact. During Project-related construction activities, various diesel-powered vehicles and equipment could create minor odors. These odors are not likely to be noticeable beyond the immediate vicinity and would be temporary and short-lived due to rapid dissipation. Rule 402 prohibits nuisance conditions such as odor. Construction odor impacts would be less than significant. Long-term odors are associated typically with industrial projects involving use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes. Odors also are associated with such uses as sewage treatment facilities and landfills. The Project involves no elements related to these types of uses. Therefore, no long-term odor impacts would occur with Project implementation.

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3.0 GREENHOUSE GAS EMISSIONS

3.1 Environmental Setting

3.1.1 The Greenhouse Effect

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

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

3.1.2 Greenhouse Gases and Global Warming Potential

GHGs are emitted by natural processes and human activities. Natural GHG sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Human activities known to emit GHGs include industrial manufacturing, utilities, transportation, residential, and agricultural activities. The GHGs that enter the atmosphere because of human activities are CO_2, CH_4, N_2O, fluorinated carbons (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF_3).

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

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

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

Fluorinated Gases are synthetic and emitted from a variety of industrial processes.

> **HFCs** are man-made chemicals used as a substitute for CFCs (chlorofluorocarbons) for automobile air conditioners and refrigerants.
>
> **PFCs** are very stable and do not break down through the chemical processes in the lower atmosphere and they have long lifetimes (between 10,000 and 50,000 years). The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.
>
> **SF_6** is an inorganic, colorless, odorless, nontoxic, nonflammable gas used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.
>
> **NF_3** is an inorganic, non-toxic, odorless, nonflammable gas used in the manufacture of semi-conductors, as an oxidizer of high energy fuels, for the preparation of tetrafluorohydrazine, as an etchant gas in the electronic industry, and as a fluorine source in high power chemical lasers.

Global Warming Potential

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to that of one kilogram of a reference gas. The reference gas used is CO_2. Therefore, GWP-weighted emissions are measured in metric tons (MT) of CO_2 equivalent ($CO2_e$). It was assumed that the GWP for CH_4 is 25 (which means that emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), the GWP for N_2O is 298, and the GWP for SF6 is 22,800 based on the Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC 2007). These GWPs have been adopted by EPA into 40 CFR 98 *Mandatory Greenhouse Gas Reporting*.

3.2 Regulatory Setting

3.2.1 Federal Regulations

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

Mandatory Greenhouse Gas Reporting Rule

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

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

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

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

The Administrator also found that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHGs fit within the CAA definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but rather allow the EPA to define the GHG standards proposed earlier in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.

Various subsequent federal rulemakings limit GHG emissions from fossil fuel-fired power plants through EPA's major stationary source permitting program and through EPA's New Source Performance Standards. In addition, federal rules include vehicle emissions rules and Corporate Average Fuel Efficiency (CAFE) standards. These rulemakings have been subject to court challenges and political manipulation, such that applicants for air permits are required to evaluate the current

status of the regulatory requirements. These GHG rules do not apply to the activities associated with the Project.

3.2.2 State Regulations

While climate change has been a concern since at least 1988, the efforts devoted to GHG emissions reduction and climate change policy have increased dramatically in recent years. In 2002, California passed AB 1493, which requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions beginning with the 2009 model year. In June 2005, Executive Order S-3-05 was signed to reduce California's GHG emissions to: (1) 2000 levels by 2010; (2) 1990 levels by the 2020; and (3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan (Scoping Plan), which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." CARB's 2022 Scoping Plan for Achieving Carbon Neutrality (Scoping Plan, CARB 2022b) was prepared to address climate legislation passed since the last scoping plan, which was prepared in 2017. The Scoping Plan addresses AB 1279, SB 905, SB 1065, SB 1075, and other legislation and executive orders addressing GHG reductions in various manufacturing sectors and managing natural lands. Senate Bill (SB) 32 codifies the emissions reduction goal of 40 percent below 1990 levels by 2030.

In 2022, California passed AB 1279 (California Crisis Act), which introduced a statewide policy to "achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045, and achieve and maintain net negative greenhouse gas emissions thereafter, and to ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85% below the 1990 levels". The bill would require the state board to work with relevant state agencies to ensure that updates to the scoping plan identify and recommend measures to achieve these policy goals and to identify and implement a variety of policies and strategies that enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies in California, as specified.

AB 32 requires the state to create an opportunity for interested parties to comment on the scoping plan by conducting public workshops. It is required to conduct a portion of these workshops in regions with low- income communities, and minority populations. SB 1020 (2022) would instead include "federal extreme nonattainment areas that have communities with minority populations, communities with low-income populations, or both" as regions for these workshops. Additionally, this bill would "accelerate the timeline required to have 100 percent renewable energy and zero carbon energy procured to serve state agencies from the original target year of 2045 to 2035".

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

SB 1075 requires the state board to specify information relative to the deployment, development, and use of hydrogen as part of the evaluation posted to the state board's internet website by June 1, 2024.

Additionally, the Energy Commission is expected "to study and model potential growth for hydrogen and its role in decarbonizing" as part of the 2023 and 2025 editions of the integrated energy policy report.

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

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

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

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

3.2.3 Local Regulations

3.2.3.1 San Bernardino County Greenhouse Gas Reduction Plan

In September 2011, San Bernardino County adopted a Greenhouse Gas Reduction Plan (San Bernardino County 2015) to include a policy addressing the County's intention to reduce GHG emissions that are reasonably attributable to (1) the County's internal activities, services, and facilities; and (2) private industry and development that is located within the area subject to the County's land use and building permit authority. The 2011 GHG Plan included reducing 159,423 MT of carbon dioxide equivalents (MTCO2e) per year from new development by 2020 as compared to the 2020 unmitigated conditions.

Since the adoption of County's GHGRP, the State has enacted new climate change regulations, most notably the Senate Bill (SB) 32, which provides statewide targets to reduce GHG emissions to 40 percent below 1990 levels by 2030. The County's 2021 Update to the Greenhouse Gas Reduction Plan was updated to reflect the changes in state laws and regulations. The 2021 update serves as a comprehensive roadmap to outline strategies that the County will implement to continue achieving its GHG emissions reductions into the year 2030 and beyond, thereby ensuring sustainable and healthy growth (San Bernardino County 2021). The 2021 update provides performance standards for construction projects in the county. The County performance standards apply to development projects in San Bernardino County (the County). The County has established an emissions threshold of 3,000 MT per year CO2e for residential/commercial development projects. Projects that exceed the 3,000 MT threshold are required to contact CARB and SCAQMD for further review. Projects with less than 3,000 MT of emissions are assumed to conform with the plan.

3.3 Significance Criteria and Methodology

3.3.1 Thresholds of Significance

3.3.1.1 California Environmental Quality Act Guidelines

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

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

3.3.1.2 South Coast Air Quality Management District

The SCAQMD provides significance thresholds for GHGs that are used to determine if a significant impact under Appendix G has occurred. If emissions exceed the thresholds, then a project is considered to have a significant impact on air quality and must incorporate all feasible mitigation measures. SCAQMD has established a screening significance threshold of 3,000 metric tons of CO_2 equivalent emissions per year for commercial/residential projects and 10,000 MT of CO_2e per year for industrial projects (SCAQMD 2008c). Though this is not a residential or commercial project, the significance threshold of 3,000 MT CO_2e per year was conservatively used for this analysis.

3.3.2 Approach and Methodology

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

There are three types of GHG from fuel combustion, including CO_2, CH_4 and N_2O. GHG emissions are presented as CO_2e. CO_2e is computed based on global warming equivalence. The CH_4 global warming

equivalence is 25 times that of CO_2, and the N_2O global warming equivalence is 298 times that of CO_2. Mathematically, the CO_2e can be represented by the following equation:

$$CO_2e \text{ Emissions} = CO_2 \text{ Emissions} + (25 \times CH_4 \text{ Emissions}) + (298 \times N_2O \text{ Emissions})$$

The CalEEMod model was used to estimate the GHG emissions during the construction and operational phases of the proposed Project. Based on the construction schedule, types and quantities of construction equipment, and haul trucks, etc., the maximum $CO2_e$ emissions were estimated. The CalEEMod model quantifies CO_2, CH_4, N_2O, and CO_2e emissions. For typical diesel-fueled combustion equipment used in construction activities, the emissions factors adjusted with global warming equivalence are the following:

1. CO_2 emission factors are 22.4 pounds of CO_{2e} per gallon consumed;
2. CH_4 emission factors are 0.065 pounds of CO_{2e} per gallon consumed; and
3. N_2O emission factors are 0.068 pounds of CO_{2e} per gallon consumed.

Additionally, GHG emissions are associated with fugitive emissions of SF_6 from gas-insulated switchgear equipment, such as the high voltage circuit breakers at the on-site substation. There will be no new SF6-containing switchgear at the site as a result of the Project. Therefore, SF_6 has not been included in the impact analysis.

3.4 Impact Analysis

3.4.1 Construction Emissions

Construction of the Project would increase GHG generation, which can contribute to global climate change. Construction emissions would be associated with vehicle engine exhaust from construction equipment and vehicles, vendor trips, and construction worker commuting trips. Construction-related GHG emissions are considered temporary and short term. Estimated construction CO_2e emissions occurring over the course of one year are shown in Table 11.

Table 11. Estimated Short-Term Annual Construction Greenhouse Gas Emissions

Total Project Emissions	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Emissions	694.38	0.12	0.009	--
Global Warming Equivalence Factor	1	25	298	--
Equivalent CO_2e Emissions[1]	694.38	3	2.68	700.1
Total Construction GHG (CO_2e) Amortized Emissions over 30 Years				*23.3*

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

3.4.2 Operational Emissions

Operation of the Project would generate GHG emissions through motor vehicle trips to and from the Project site, on-site maintenance, water usage, and energy consumption. Operational GHG emissions are primarily due to on-site energy consumption. Operational GHGs are below the SCAQMD annual significance thresholds. The estimated operational GHG emissions are shown in Table 12.

Table 12. Estimated Annual Operational Greenhouse Gas Emissions

Total Project Emissions	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Emissions	89.15	0.009	0.001	--
Global Warming Equivalence Factor	1	25	298	--
Equivalent CO_2e Emissions[1]	89.15	0.225	0.298	89.7
Total Operational GHG (CO_2e) Amortized Emissions over 30 Years + Annual Operational GHG Emissions				113
SCAQMD GHG Screening Threshold				*3,000*
Exceeds screening threshold?				**No**

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

3.4.3 CEQA Checklist

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

Less than Significant Impact. As indicated in Table 11, short-term and temporary construction CO_2e emissions will not exceed the annual GHG threshold of 3,000 MT. GHGs persist in the atmosphere for time periods long enough to cause them to be dispersed around the globe and are therefore cumulative in nature. The Project's GHG emissions cumulatively are not a considerable contribution to climate change and, therefore, are less than significant.

Due to the complex physical, chemical and atmospheric mechanisms involved in global climate change, there is no basis for concluding that the Project's theoretically small emissions increase could cause a measurable increase in global GHG emissions necessary to influence global climate change. Global emissions in their aggregate contribute to climate change, not any one source of Project emissions alone. Therefore, due to the incremental amount of GHG emissions estimated for this Project, and the lack of any evidence for concluding that the Project's GHG emissions could cause any measurable increase in global GHG emissions necessary to force global climate change, the Project is not considered to be hindering the goals of AB 32. Thus, because the Project would result in total GHG emissions less than the residential SCAQMD 3,000 tons CO_2e annual threshold, it is not considered to have a significant impact on a cumulative level. The BESS project will enhance the State's use of renewable energy by enabling the storage of renewable energy when the renewable source may not be operating.

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

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

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

3.4.3.2 Would the project conflict with an applicable plan, policy, or regulations adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. The proposed Project would not conflict with any applicable plan, policy, or regulation in regard to GHG emissions. As shown in Table 12, the Project results in GHG emissions below the SCAQMD threshold of 3,000 tons per year. By meeting SCAQMD's significance thresholds and by storing renewable energy, the Project will assist San Bernardino County in achieving the requirements of the San Bernardino County GHG Reduction Plan. Therefore, the Project would not conflict with any applicable plan, policy, and/or regulation to reduce GHG emissions and is considered to have no impact.

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APPENDIX A: DETAILED CALEEMOD OUTPUT

Zephyr Battery Storage - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Zephyr Battery Storage

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.50	User Defined Unit	1.50	18,160.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Provided by Applicant

Construction Phase - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Trips and VMT - Provided by applicant; HHDT vehicle class assumed for vendor trips and haul trips

Demolition - Provided by applicant

Grading - Provided by applicant

Zephyr Battery Storage - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Trips - Assumed 1-2 workers on a weekly basis

Consumer Products - No Consumer Product Emissions

Area Coating - Not Applicable

Energy Use - Default data used

Water And Wastewater - Provided by Applicant- Water Use for general maintenance

Land Use Change -

Construction Off-road Equipment Mitigation - Water Exposed Area: 3 times per day

Operational Off-Road Equipment - Up to 30 days/year for infrequent maintenance

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	9080	0
tblAreaCoating	Area_Nonresidential_Interior	27240	0
tblConstructionPhase	NumDays	200.00	100.00
tblConstructionPhase	NumDays	200.00	50.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	2.00	30.00
tblConsumerProducts	ROG_EF	1.98E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	0.00	3.62
tblEnergyUse	NT24E	0.00	5.02
tblEnergyUse	NT24NG	0.00	17.00
tblEnergyUse	T24E	0.00	2.89
tblEnergyUse	T24NG	0.00	17.00
tblGrading	AcresOfGrading	30.00	1.50
tblLandUse	LandUseSquareFeet	0.00	18,160.00
tblLandUse	LotAcreage	0.00	1.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

Zephyr Battery Storage - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	30.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	42.00	926.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	200.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	12.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	38.00	20.00
tblTripsAndVMT	WorkerTripNumber	38.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	40.00
tblTripsAndVMT	WorkerTripNumber	8.00	40.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.67
tblWater	OutdoorWaterUseRate	0.00	100,000.00

2.0 Emissions Summary

Zephyr Battery Storage - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2385	2.1623	2.3786	5.2100e-003	0.1362	0.0965	0.2327	0.0613	0.0918	0.1531	0.0000	459.8350	459.8350	0.0859	8.0700e-003	464.3856
2024	0.1279	1.0279	1.2617	2.7100e-003	0.0168	0.0437	0.0605	4.4800e-003	0.0425	0.0470	0.0000	234.5450	234.5450	0.0325	1.0600e-003	235.6740
Maximum	**0.2385**	**2.1623**	**2.3786**	**5.2100e-003**	**0.1362**	**0.0965**	**0.2327**	**0.0613**	**0.0918**	**0.1531**	**0.0000**	**459.8350**	**459.8350**	**0.0859**	**8.0700e-003**	**464.3856**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2385	2.1623	2.3786	5.2100e-003	0.0779	0.0965	0.1744	0.0306	0.0918	0.1224	0.0000	459.8345	459.8345	0.0859	8.0700e-003	464.3851
2024	0.1279	1.0279	1.2617	2.7100e-003	0.0168	0.0437	0.0605	4.4800e-003	0.0425	0.0470	0.0000	234.5447	234.5447	0.0325	1.0600e-003	235.6737
Maximum	**0.2385**	**2.1623**	**2.3786**	**5.2100e-003**	**0.0779**	**0.0965**	**0.1744**	**0.0306**	**0.0918**	**0.1224**	**0.0000**	**459.8345**	**459.8345**	**0.0859**	**8.0700e-003**	**464.3851**

Zephyr Battery Storage - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**38.12**	**0.00**	**19.90**	**46.74**	**0.01**	**15.36**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-19-2023**	**9-18-2023**	1.5000	1.5000
2	**9-19-2023**	**12-18-2023**	0.7564	0.7564
3	**12-19-2023**	**3-18-2024**	1.1219	1.1219
4	**3-19-2024**	**6-18-2024**	0.1276	0.1276
		Highest	1.5000	1.5000

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	70.0824	70.0824	3.7700e-003	9.8000e-004	70.4698
Mobile	5.2000e-004	9.7000e-004	6.4000e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4520	1.4520	7.0000e-005	7.0000e-005	1.4738
Offroad	7.4600e-003	0.0499	0.0488	2.0000e-004		1.8000e-003	1.8000e-003		1.6500e-003	1.6500e-003	0.0000	17.4227	17.4227	5.6300e-003	0.0000	17.5636
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.1970	0.1970	2.0000e-005	0.0000	0.1981
Total	**0.0113**	**0.0812**	**0.0806**	**4.0000e-004**	**1.6400e-003**	**4.1100e-003**	**5.7500e-003**	**4.4000e-004**	**3.9600e-003**	**4.4000e-003**	**0.0000**	**89.1542**	**89.1542**	**9.4900e-003**	**1.0500e-003**	**89.7053**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	70.0824	70.0824	3.7700e-003	9.8000e-004	70.4698
Mobile	5.2000e-004	9.7000e-004	6.4000e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4520	1.4520	7.0000e-005	7.0000e-005	1.4738
Offroad	7.4600e-003	0.0499	0.0488	2.0000e-004		1.8000e-003	1.8000e-003		1.6500e-003	1.6500e-003	0.0000	17.4227	17.4227	5.6300e-003	0.0000	17.5636
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.1970	0.1970	2.0000e-005	0.0000	0.1981
Total	**0.0113**	**0.0812**	**0.0806**	**4.0000e-004**	**1.6400e-003**	**4.1100e-003**	**5.7500e-003**	**4.4000e-004**	**3.9600e-003**	**4.4000e-003**	**0.0000**	**89.1542**	**89.1542**	**9.4900e-003**	**1.0500e-003**	**89.7053**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/19/2023	6/30/2023	5	10	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2	Site and Substation Preparation and Grading	Site Preparation	7/1/2023	8/11/2023	5	30	
3	Energy Storage and Substation Installation	Building Construction	8/12/2023	12/29/2023	5	100	
4	Gen-Tie Construction and Installation	Building Construction	12/30/2023	3/8/2024	5	50	
5	Testing and Commissioning	Building Construction	3/9/2024	5/3/2024	5	40	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Dumpers/Tenders	1	8.00	16	0.38
Demolition	Generator Sets	2	24.00	84	0.74
Demolition	Graders	1	8.00	187	0.41
Demolition	Off-Highway Trucks	3	8.00	402	0.38
Demolition	Rollers	1	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Trenchers	1	8.00	78	0.50
Site and Substation Preparation and Grading	Air Compressors	2	8.00	78	0.48
Site and Substation Preparation and Grading	Dumpers/Tenders	1	8.00	16	0.38
Site and Substation Preparation and Grading	Generator Sets	2	24.00	84	0.74

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site and Substation Preparation and Grading	Graders	1	8.00	187	0.41
Site and Substation Preparation and Grading	Off-Highway Trucks	3	8.00	402	0.38
Site and Substation Preparation and Grading	Rollers	1	8.00	80	0.38
Site and Substation Preparation and Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site and Substation Preparation and Grading	Rubber Tired Loaders	1	8.00	203	0.36
Site and Substation Preparation and Grading	Skid Steer Loaders	1	8.00	65	0.37
Site and Substation Preparation and Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site and Substation Preparation and Grading	Trenchers	1	8.00	78	0.50
Energy Storage and Substation Installation	Air Compressors	1	8.00	78	0.48
Energy Storage and Substation Installation	Cranes	1	8.00	231	0.29
Energy Storage and Substation Installation	Excavators	1	8.00	158	0.38
Energy Storage and Substation Installation	Forklifts	1	8.00	89	0.20
Energy Storage and Substation Installation	Generator Sets	2	8.00	84	0.74
Energy Storage and Substation Installation	Plate Compactors	1	8.00	8	0.43
Energy Storage and Substation Installation	Rollers	1	8.00	80	0.38
Energy Storage and Substation Installation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Gen-Tie Construction and Installation	Air Compressors	2	8.00	78	0.48
Gen-Tie Construction and Installation	Cranes	2	8.00	231	0.29
Gen-Tie Construction and Installation	Forklifts	2	8.00	89	0.20
Gen-Tie Construction and Installation	Generator Sets	2	24.00	84	0.74
Gen-Tie Construction and Installation	Pumps	2	8.00	84	0.74
Gen-Tie Construction and Installation	Welders	2	8.00	46	0.45
Testing and Commissioning	Off-Highway Trucks	2	8.00	402	0.38

Trips and VMT

Zephyr Battery Storage - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	15	20.00	4.00	926.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Site and Substation Preparation and Gradi	15	20.00	4.00	60.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Energy Storage and Substation Installation	11	40.00	12.00	200.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Gen-Tie Construction and Installation	12	40.00	4.00	100.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Testing and Commissioning	2	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.5100e-003	0.0000	4.5100e-003	6.8000e-004	0.0000	6.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0299	0.2631	0.2567	6.0000e-004		0.0117	0.0117		0.0112	0.0112	0.0000	52.3724	52.3724	0.0112	0.0000	52.6534
Total	**0.0299**	**0.2631**	**0.2567**	**6.0000e-004**	**4.5100e-003**	**0.0117**	**0.0162**	**6.8000e-004**	**0.0112**	**0.0118**	**0.0000**	**52.3724**	**52.3724**	**0.0112**	**0.0000**	**52.6534**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0800e-003	0.0539	0.0156	2.6000e-004	7.9700e-003	5.4000e-004	8.5100e-003	2.1900e-003	5.1000e-004	2.7000e-003	0.0000	25.7291	25.7291	1.1000e-003	4.0800e-003	26.9718
Vendor	3.0000e-005	1.0800e-003	4.8000e-004	0.0000	1.2000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4242	0.4242	2.0000e-005	7.0000e-005	0.4447
Worker	3.5000e-004	2.6000e-004	3.2500e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8564	0.8564	2.0000e-005	2.0000e-005	0.8638
Total	**1.4600e-003**	**0.0552**	**0.0194**	**2.7000e-004**	**9.1900e-003**	**5.6000e-004**	**9.7400e-003**	**2.5100e-003**	**5.3000e-004**	**3.0400e-003**	**0.0000**	**27.0097**	**27.0097**	**1.1400e-003**	**4.1700e-003**	**28.2803**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7600e-003	0.0000	1.7600e-003	2.7000e-004	0.0000	2.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0299	0.2631	0.2567	6.0000e-004		0.0117	0.0117		0.0112	0.0112	0.0000	52.3723	52.3723	0.0112	0.0000	52.6534
Total	**0.0299**	**0.2631**	**0.2567**	**6.0000e-004**	**1.7600e-003**	**0.0117**	**0.0135**	**2.7000e-004**	**0.0112**	**0.0114**	**0.0000**	**52.3723**	**52.3723**	**0.0112**	**0.0000**	**52.6534**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0800e-003	0.0539	0.0156	2.6000e-004	7.9700e-003	5.4000e-004	8.5100e-003	2.1900e-003	5.1000e-004	2.7000e-003	0.0000	25.7291	25.7291	1.1000e-003	4.0800e-003	26.9718
Vendor	3.0000e-005	1.0800e-003	4.8000e-004	0.0000	1.2000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4242	0.4242	2.0000e-005	7.0000e-005	0.4447
Worker	3.5000e-004	2.6000e-004	3.2500e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8564	0.8564	2.0000e-005	2.0000e-005	0.8638
Total	**1.4600e-003**	**0.0552**	**0.0194**	**2.7000e-004**	**9.1900e-003**	**5.6000e-004**	**9.7400e-003**	**2.5100e-003**	**5.3000e-004**	**3.0400e-003**	**0.0000**	**27.0097**	**27.0097**	**1.1400e-003**	**4.1700e-003**	**28.2803**

3.3 Site and Substation Preparation and Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0911	0.0000	0.0911	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0898	0.7892	0.7700	1.8100e-003		0.0351	0.0351		0.0335	0.0335	0.0000	157.1171	157.1171	0.0337	0.0000	157.9603
Total	**0.0898**	**0.7892**	**0.7700**	**1.8100e-003**	**0.0911**	**0.0351**	**0.1263**	**0.0497**	**0.0335**	**0.0832**	**0.0000**	**157.1171**	**157.1171**	**0.0337**	**0.0000**	**157.9603**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site and Substation Preparation and Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	3.4900e-003	1.0100e-003	2.0000e-005	5.2000e-004	3.0000e-005	5.5000e-004	1.4000e-004	3.0000e-005	1.8000e-004	0.0000	1.6671	1.6671	7.0000e-005	2.6000e-004	1.7476
Vendor	1.0000e-004	3.2400e-003	1.4500e-003	1.0000e-005	3.6000e-004	2.0000e-005	3.8000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.2726	1.2726	5.0000e-005	2.0000e-004	1.3340
Worker	1.0500e-003	7.8000e-004	9.7600e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.5691	2.5691	7.0000e-005	7.0000e-005	2.5915
Total	**1.2200e-003**	**7.5100e-003**	**0.0122**	**6.0000e-005**	**4.1700e-003**	**7.0000e-005**	**4.2400e-003**	**1.1100e-003**	**7.0000e-005**	**1.1900e-003**	**0.0000**	**5.5088**	**5.5088**	**1.9000e-004**	**5.3000e-004**	**5.6731**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0355	0.0000	0.0355	0.0194	0.0000	0.0194	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0898	0.7892	0.7700	1.8100e-003		0.0351	0.0351		0.0335	0.0335	0.0000	157.1169	157.1169	0.0337	0.0000	157.9601
Total	**0.0898**	**0.7892**	**0.7700**	**1.8100e-003**	**0.0355**	**0.0351**	**0.0707**	**0.0194**	**0.0335**	**0.0529**	**0.0000**	**157.1169**	**157.1169**	**0.0337**	**0.0000**	**157.9601**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site and Substation Preparation and Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	3.4900e-003	1.0100e-003	2.0000e-005	5.2000e-004	3.0000e-005	5.5000e-004	1.4000e-004	3.0000e-005	1.8000e-004	0.0000	1.6671	1.6671	7.0000e-005	2.6000e-004	1.7476
Vendor	1.0000e-004	3.2400e-003	1.4500e-003	1.0000e-005	3.6000e-004	2.0000e-005	3.8000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.2726	1.2726	5.0000e-005	2.0000e-004	1.3340
Worker	1.0500e-003	7.8000e-004	9.7600e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.5691	2.5691	7.0000e-005	7.0000e-005	2.5915
Total	**1.2200e-003**	**7.5100e-003**	**0.0122**	**6.0000e-005**	**4.1700e-003**	**7.0000e-005**	**4.2400e-003**	**1.1100e-003**	**7.0000e-005**	**1.1900e-003**	**0.0000**	**5.5088**	**5.5088**	**1.9000e-004**	**5.3000e-004**	**5.6731**

3.4 Energy Storage and Substation Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1079	0.9980	1.2374	2.1000e-003		0.0486	0.0486		0.0461	0.0461	0.0000	182.4170	182.4170	0.0384	0.0000	183.3763
Total	**0.1079**	**0.9980**	**1.2374**	**2.1000e-003**		**0.0486**	**0.0486**		**0.0461**	**0.0461**	**0.0000**	**182.4170**	**182.4170**	**0.0384**	**0.0000**	**183.3763**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Energy Storage and Substation Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-004	0.0116	3.3700e-003	6.0000e-005	1.7200e-003	1.2000e-004	1.8400e-003	4.7000e-004	1.1000e-004	5.8000e-004	0.0000	5.5571	5.5571	2.4000e-004	8.8000e-004	5.8255
Vendor	9.9000e-004	0.0325	0.0145	1.3000e-004	3.5700e-003	2.4000e-004	3.8200e-003	9.8000e-004	2.3000e-004	1.2200e-003	0.0000	12.7259	12.7259	5.2000e-004	2.0200e-003	13.3397
Worker	6.9700e-003	5.2000e-003	0.0651	1.8000e-004	0.0219	1.1000e-004	0.0220	5.8200e-003	1.0000e-004	5.9300e-003	0.0000	17.1272	17.1272	4.5000e-004	4.6000e-004	17.2769
Total	**8.1900e-003**	**0.0493**	**0.0830**	**3.7000e-004**	**0.0272**	**4.7000e-004**	**0.0277**	**7.2700e-003**	**4.4000e-004**	**7.7300e-003**	**0.0000**	**35.4101**	**35.4101**	**1.2100e-003**	**3.3600e-003**	**36.4420**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1079	0.9980	1.2374	2.1000e-003		0.0486	0.0486		0.0461	0.0461	0.0000	182.4167	182.4167	0.0384	0.0000	183.3761
Total	**0.1079**	**0.9980**	**1.2374**	**2.1000e-003**		**0.0486**	**0.0486**		**0.0461**	**0.0461**	**0.0000**	**182.4167**	**182.4167**	**0.0384**	**0.0000**	**183.3761**

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3.4 Energy Storage and Substation Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-004	0.0116	3.3700e-003	6.0000e-005	1.7200e-003	1.2000e-004	1.8400e-003	4.7000e-004	1.1000e-004	5.8000e-004	0.0000	5.5571	5.5571	2.4000e-004	8.8000e-004	5.8255
Vendor	9.9000e-004	0.0325	0.0145	1.3000e-004	3.5700e-003	2.4000e-004	3.8200e-003	9.8000e-004	2.3000e-004	1.2200e-003	0.0000	12.7259	12.7259	5.2000e-004	2.0200e-003	13.3397
Worker	6.9700e-003	5.2000e-003	0.0651	1.8000e-004	0.0219	1.1000e-004	0.0220	5.8200e-003	1.0000e-004	5.9300e-003	0.0000	17.1272	17.1272	4.5000e-004	4.6000e-004	17.2769
Total	**8.1900e-003**	**0.0493**	**0.0830**	**3.7000e-004**	**0.0272**	**4.7000e-004**	**0.0277**	**7.2700e-003**	**4.4000e-004**	**7.7300e-003**	**0.0000**	**35.4101**	**35.4101**	**1.2100e-003**	**3.3600e-003**	**36.4420**

3.5 Gen-Tie Construction and Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Gen-Tie Construction and Installation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1032	0.8803	1.0851	2.0100e-003		0.0388	0.0388		0.0380	0.0380	0.0000	171.5359	171.5359	0.0170	0.0000	171.9599
Total	**0.1032**	**0.8803**	**1.0851**	**2.0100e-003**		**0.0388**	**0.0388**		**0.0380**	**0.0380**	**0.0000**	**171.5359**	**171.5359**	**0.0170**	**0.0000**	**171.9599**

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3.5 Gen-Tie Construction and Installation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	5.8300e-003	1.6900e-003	3.0000e-005	8.6000e-004	6.0000e-005	9.2000e-004	2.4000e-004	5.0000e-005	2.9000e-004	0.0000	2.7303	2.7303	1.1000e-004	4.3000e-004	2.8621
Vendor	1.6000e-004	5.4200e-003	2.4200e-003	2.0000e-005	6.0000e-004	4.0000e-005	6.4000e-004	1.6000e-004	4.0000e-005	2.0000e-004	0.0000	2.0845	2.0845	8.0000e-005	3.3000e-004	2.1850
Worker	3.2400e-003	2.3100e-003	0.0303	9.0000e-005	0.0110	5.0000e-005	0.0110	2.9100e-003	5.0000e-005	2.9600e-003	0.0000	8.3813	8.3813	2.0000e-004	2.2000e-004	8.4505
Total	**3.5200e-003**	**0.0136**	**0.0344**	**1.4000e-004**	**0.0124**	**1.5000e-004**	**0.0126**	**3.3100e-003**	**1.4000e-004**	**3.4500e-003**	**0.0000**	**13.1960**	**13.1960**	**3.9000e-004**	**9.8000e-004**	**13.4976**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1032	0.8803	1.0851	2.0100e-003		0.0388	0.0388		0.0380	0.0380	0.0000	171.5357	171.5357	0.0170	0.0000	171.9597
Total	**0.1032**	**0.8803**	**1.0851**	**2.0100e-003**		**0.0388**	**0.0388**		**0.0380**	**0.0380**	**0.0000**	**171.5357**	**171.5357**	**0.0170**	**0.0000**	**171.9597**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	5.8300e-003	1.6900e-003	3.0000e-005	8.6000e-004	6.0000e-005	9.2000e-004	2.4000e-004	5.0000e-005	2.9000e-004	0.0000	2.7303	2.7303	1.1000e-004	4.3000e-004	2.8621
Vendor	1.6000e-004	5.4200e-003	2.4200e-003	2.0000e-005	6.0000e-004	4.0000e-005	6.4000e-004	1.6000e-004	4.0000e-005	2.0000e-004	0.0000	2.0845	2.0845	8.0000e-005	3.3000e-004	2.1850
Worker	3.2400e-003	2.3100e-003	0.0303	9.0000e-005	0.0110	5.0000e-005	0.0110	2.9100e-003	5.0000e-005	2.9600e-003	0.0000	8.3813	8.3813	2.0000e-004	2.2000e-004	8.4505
Total	**3.5200e-003**	**0.0136**	**0.0344**	**1.4000e-004**	**0.0124**	**1.5000e-004**	**0.0126**	**3.3100e-003**	**1.4000e-004**	**3.4500e-003**	**0.0000**	**13.1960**	**13.1960**	**3.9000e-004**	**9.8000e-004**	**13.4976**

3.6 Testing and Commissioning - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0199	0.1331	0.1300	5.3000e-004		4.7900e-003	4.7900e-003		4.4100e-003	4.4100e-003	0.0000	46.4606	46.4606	0.0150	0.0000	46.8362
Total	**0.0199**	**0.1331**	**0.1300**	**5.3000e-004**		**4.7900e-003**	**4.7900e-003**		**4.4100e-003**	**4.4100e-003**	**0.0000**	**46.4606**	**46.4606**	**0.0150**	**0.0000**	**46.8362**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Testing and Commissioning - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	9.2000e-004	0.0121	4.0000e-005	4.3900e-003	2.0000e-005	4.4100e-003	1.1600e-003	2.0000e-005	1.1800e-003	0.0000	3.3525	3.3525	8.0000e-005	9.0000e-005	3.3802
Total	**1.3000e-003**	**9.2000e-004**	**0.0121**	**4.0000e-005**	**4.3900e-003**	**2.0000e-005**	**4.4100e-003**	**1.1600e-003**	**2.0000e-005**	**1.1800e-003**	**0.0000**	**3.3525**	**3.3525**	**8.0000e-005**	**9.0000e-005**	**3.3802**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0199	0.1331	0.1300	5.3000e-004		4.7900e-003	4.7900e-003		4.4100e-003	4.4100e-003	0.0000	46.4605	46.4605	0.0150	0.0000	46.8362
Total	**0.0199**	**0.1331**	**0.1300**	**5.3000e-004**		**4.7900e-003**	**4.7900e-003**		**4.4100e-003**	**4.4100e-003**	**0.0000**	**46.4605**	**46.4605**	**0.0150**	**0.0000**	**46.8362**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Testing and Commissioning - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	9.2000e-004	0.0121	4.0000e-005	4.3900e-003	2.0000e-005	4.4100e-003	1.1600e-003	2.0000e-005	1.1800e-003	0.0000	3.3525	3.3525	8.0000e-005	9.0000e-005	3.3802
Total	**1.3000e-003**	**9.2000e-004**	**0.0121**	**4.0000e-005**	**4.3900e-003**	**2.0000e-005**	**4.4100e-003**	**1.1600e-003**	**2.0000e-005**	**1.1800e-003**	**0.0000**	**3.3525**	**3.3525**	**8.0000e-005**	**9.0000e-005**	**3.3802**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.2000e-004	9.7000e-004	6.4000e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4520	1.4520	7.0000e-005	7.0000e-005	1.4738
Unmitigated	5.2000e-004	9.7000e-004	6.4000e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4520	1.4520	7.0000e-005	7.0000e-005	1.4738

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	1.01	0.00	0.00	4,338	4,338
Total	1.01	0.00	0.00	4,338	4,338

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	37.1335	37.1335	3.1300e-003	3.8000e-004	37.3250
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	37.1335	37.1335	3.1300e-003	3.8000e-004	37.3250
NaturalGas Mitigated	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9490	32.9490	6.3000e-004	6.0000e-004	33.1448
NaturalGas Unmitigated	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9490	32.9490	6.3000e-004	6.0000e-004	33.1448

Zephyr Battery Storage - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	617440	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9490	32.9490	6.3000e-004	6.0000e-004	33.1448
Total		**3.3300e-003**	**0.0303**	**0.0254**	**1.8000e-004**		**2.3000e-003**	**2.3000e-003**		**2.3000e-003**	**2.3000e-003**	**0.0000**	**32.9490**	**32.9490**	**6.3000e-004**	**6.0000e-004**	**33.1448**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	617440	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9490	32.9490	6.3000e-004	6.0000e-004	33.1448
Total		**3.3300e-003**	**0.0303**	**0.0254**	**1.8000e-004**		**2.3000e-003**	**2.3000e-003**		**2.3000e-003**	**2.3000e-003**	**0.0000**	**32.9490**	**32.9490**	**6.3000e-004**	**6.0000e-004**	**33.1448**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	209385	37.1335	3.1300e-003	3.8000e-004	37.3250
Total		**37.1335**	**3.1300e-003**	**3.8000e-004**	**37.3250**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	209385	37.1335	3.1300e-003	3.8000e-004	37.3250
Total		**37.1335**	**3.1300e-003**	**3.8000e-004**	**37.3250**

6.0 Area Detail

6.1 Mitigation Measures Area

Zephyr Battery Storage - San Bernardino-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Unmitigated	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1970	2.0000e-005	0.0000	0.1981
Unmitigated	0.1970	2.0000e-005	0.0000	0.1981

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0.1	0.1970	2.0000e-005	0.0000	0.1981
Total		**0.1970**	**2.0000e-005**	**0.0000**	**0.1981**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0.1	0.1970	2.0000e-005	0.0000	0.1981
Total		**0.1970**	**2.0000e-005**	**0.0000**	**0.1981**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	8.00	30	402	0.38	Diesel

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Off-Highway Trucks	7.4600e-003	0.0499	0.0488	2.0000e-004		1.8000e-003	1.8000e-003		1.6500e-003	1.6500e-003	0.0000	17.4227	17.4227	5.6300e-003	0.0000	17.5636
Total	**7.4600e-003**	**0.0499**	**0.0488**	**2.0000e-004**		**1.8000e-003**	**1.8000e-003**		**1.6500e-003**	**1.6500e-003**	**0.0000**	**17.4227**	**17.4227**	**5.6300e-003**	**0.0000**	**17.5636**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Zephyr Battery Storage

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.50	User Defined Unit	1.50	18,160.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Provided by Applicant

Construction Phase - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Trips and VMT - Provided by applicant; HHDT vehicle class assumed for vendor trips and haul trips

Demolition - Provided by applicant

Grading - Provided by applicant

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Trips - Assumed 1-2 workers on a weekly basis

Consumer Products - No Consumer Product Emissions

Area Coating - Not Applicable

Energy Use - Default data used

Water And Wastewater - Provided by Applicant- Water Use for general maintenance

Land Use Change -

Construction Off-road Equipment Mitigation - Water Exposed Area: 3 times per day

Operational Off-Road Equipment - Up to 30 days/year for infrequent maintenance

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	9080	0
tblAreaCoating	Area_Nonresidential_Interior	27240	0
tblConstructionPhase	NumDays	200.00	100.00
tblConstructionPhase	NumDays	200.00	50.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	2.00	30.00
tblConsumerProducts	ROG_EF	1.98E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	0.00	3.62
tblEnergyUse	NT24E	0.00	5.02
tblEnergyUse	NT24NG	0.00	17.00
tblEnergyUse	T24E	0.00	2.89
tblEnergyUse	T24NG	0.00	17.00
tblGrading	AcresOfGrading	30.00	1.50
tblLandUse	LandUseSquareFeet	0.00	18,160.00
tblLandUse	LotAcreage	0.00	1.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	30.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	42.00	926.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	200.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	12.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	38.00	20.00
tblTripsAndVMT	WorkerTripNumber	38.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	40.00
tblTripsAndVMT	WorkerTripNumber	8.00	40.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.67
tblWater	OutdoorWaterUseRate	0.00	100,000.00

2.0 Emissions Summary

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	6.2951	63.0520	55.2840	0.1753	6.3579	2.4512	8.7044	3.3915	2.3372	5.6284	0.0000	17,512.5379	17,512.5379	2.7293	0.9181	17,854.3687
2024	4.2846	35.7220	44.9731	0.0861	0.5064	1.5560	2.0624	0.1348	1.5242	1.6590	0.0000	8,175.4009	8,175.4009	0.8326	0.0425	8,207.2088
Maximum	**6.2951**	**63.0520**	**55.2840**	**0.1753**	**6.3579**	**2.4512**	**8.7044**	**3.3915**	**2.3372**	**5.6284**	**0.0000**	**17,512.5379**	**17,512.5379**	**2.7293**	**0.9181**	**17,854.3687**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	6.2951	63.0520	55.2840	0.1753	2.6521	2.4512	4.9985	1.3688	2.3372	3.6057	0.0000	17,512.5379	17,512.5379	2.7293	0.9181	17,854.3687
2024	4.2846	35.7220	44.9731	0.0861	0.5064	1.5560	2.0624	0.1348	1.5242	1.6590	0.0000	8,175.4009	8,175.4009	0.8326	0.0425	8,207.2088
Maximum	**6.2951**	**63.0520**	**55.2840**	**0.1753**	**2.6521**	**2.4512**	**4.9985**	**1.3688**	**2.3372**	**3.6057**	**0.0000**	**17,512.5379**	**17,512.5379**	**2.7293**	**0.9181**	**17,854.3687**

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.99**	**0.00**	**34.42**	**57.36**	**0.00**	**27.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963
Mobile	4.4100e-003	6.8900e-003	0.0539	1.3000e-004	0.0128	9.0000e-005	0.0129	3.4200e-003	9.0000e-005	3.5100e-003		13.1014	13.1014	5.9000e-004	5.5000e-004	13.2794
Offroad	0.4970	3.3279	3.2502	0.0132		0.1198	0.1198		0.1102	0.1102	0.0000	1,280.3504	1,280.3504	0.4141		1,290.7027
Total	**0.5197**	**3.5006**	**3.4436**	**0.0144**	**0.0128**	**0.1325**	**0.1453**	**3.4200e-003**	**0.1229**	**0.1263**	**0.0000**	**1,492.4658**	**1,492.4658**	**0.4185**	**4.2000e-003**	**1,504.1788**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963
Mobile	4.4100e-003	6.8900e-003	0.0539	1.3000e-004	0.0128	9.0000e-005	0.0129	3.4200e-003	9.0000e-005	3.5100e-003		13.1014	13.1014	5.9000e-004	5.5000e-004	13.2794
Offroad	0.4970	3.3279	3.2502	0.0132		0.1198	0.1198		0.1102	0.1102	0.0000	1,280.3504	1,280.3504	0.4141		1,290.7027
Total	**0.5197**	**3.5006**	**3.4436**	**0.0144**	**0.0128**	**0.1325**	**0.1453**	**3.4200e-003**	**0.1229**	**0.1263**	**0.0000**	**1,492.4658**	**1,492.4658**	**0.4185**	**4.2000e-003**	**1,504.1788**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/19/2023	6/30/2023	5	10	
2	Site and Substation Preparation and Grading	Site Preparation	7/1/2023	8/11/2023	5	30	
3	Energy Storage and Substation Installation	Building Construction	8/12/2023	12/29/2023	5	100	
4	Gen-Tie Construction and Installation	Building Construction	12/30/2023	3/8/2024	5	50	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5	Testing and Commissioning	Building Construction	3/9/2024	5/3/2024	5	40	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Dumpers/Tenders	1	8.00	16	0.38
Demolition	Generator Sets	2	24.00	84	0.74
Demolition	Graders	1	8.00	187	0.41
Demolition	Off-Highway Trucks	3	8.00	402	0.38
Demolition	Rollers	1	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Trenchers	1	8.00	78	0.50
Site and Substation Preparation and Grading	Air Compressors	2	8.00	78	0.48
Site and Substation Preparation and Grading	Dumpers/Tenders	1	8.00	16	0.38
Site and Substation Preparation and Grading	Generator Sets	2	24.00	84	0.74
Site and Substation Preparation and Grading	Graders	1	8.00	187	0.41
Site and Substation Preparation and Grading	Off-Highway Trucks	3	8.00	402	0.38
Site and Substation Preparation and Grading	Rollers	1	8.00	80	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site and Substation Preparation and Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site and Substation Preparation and Grading	Rubber Tired Loaders	1	8.00	203	0.36
Site and Substation Preparation and Grading	Skid Steer Loaders	1	8.00	65	0.37
Site and Substation Preparation and Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site and Substation Preparation and Grading	Trenchers	1	8.00	78	0.50
Energy Storage and Substation Installation	Air Compressors	1	8.00	78	0.48
Energy Storage and Substation Installation	Cranes	1	8.00	231	0.29
Energy Storage and Substation Installation	Excavators	1	8.00	158	0.38
Energy Storage and Substation Installation	Forklifts	1	8.00	89	0.20
Energy Storage and Substation Installation	Generator Sets	2	8.00	84	0.74
Energy Storage and Substation Installation	Plate Compactors	1	8.00	8	0.43
Energy Storage and Substation Installation	Rollers	1	8.00	80	0.38
Energy Storage and Substation Installation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Gen-Tie Construction and Installation	Air Compressors	2	8.00	78	0.48
Gen-Tie Construction and Installation	Cranes	2	8.00	231	0.29
Gen-Tie Construction and Installation	Forklifts	2	8.00	89	0.20
Gen-Tie Construction and Installation	Generator Sets	2	24.00	84	0.74
Gen-Tie Construction and Installation	Pumps	2	8.00	84	0.74
Gen-Tie Construction and Installation	Welders	2	8.00	46	0.45
Testing and Commissioning	Off-Highway Trucks	2	8.00	402	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	15	20.00	4.00	926.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Site and Substation Preparation and Gradi	15	20.00	4.00	60.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Energy Storage and Substation Installation	11	40.00	12.00	200.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Gen-Tie Construction and Installation	12	40.00	4.00	100.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Testing and Commissioning	2	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9017	0.0000	0.9017	0.1365	0.0000	0.1365			0.0000			0.0000
Off-Road	5.9869	52.6148	51.3319	0.1204		2.3414	2.3414		2.2322	2.2322		11,546.1286	11,546.1286	2.4787		11,608.0958
Total	**5.9869**	**52.6148**	**51.3319**	**0.1204**	**0.9017**	**2.3414**	**3.2431**	**0.1365**	**2.2322**	**2.3687**		**11,546.1286**	**11,546.1286**	**2.4787**		**11,608.0958**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2231	10.1845	3.1021	0.0520	1.6216	0.1071	1.7287	0.4447	0.1025	0.5471		5,668.7114	5,668.7114	0.2419	0.8985	5,942.5175
Vendor	6.9200e-003	0.2056	0.0958	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2000e-003		93.3642	93.3642	3.8300e-003	0.0148	97.8679
Worker	0.0782	0.0472	0.7542	2.0000e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		204.3337	204.3337	4.8800e-003	4.8000e-003	205.8876
Total	**0.3082**	**10.4372**	**3.9521**	**0.0549**	**1.8694**	**0.1098**	**1.9792**	**0.5106**	**0.1051**	**0.6156**		**5,966.4093**	**5,966.4093**	**0.2506**	**0.9181**	**6,246.2729**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3517	0.0000	0.3517	0.0532	0.0000	0.0532			0.0000			0.0000
Off-Road	5.9869	52.6148	51.3319	0.1204		2.3414	2.3414		2.2322	2.2322	0.0000	11,546.1286	11,546.1286	2.4787		11,608.0958
Total	**5.9869**	**52.6148**	**51.3319**	**0.1204**	**0.3517**	**2.3414**	**2.6930**	**0.0532**	**2.2322**	**2.2854**	**0.0000**	**11,546.1286**	**11,546.1286**	**2.4787**		**11,608.0958**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2231	10.1845	3.1021	0.0520	1.6216	0.1071	1.7287	0.4447	0.1025	0.5471		5,668.7114	5,668.7114	0.2419	0.8985	5,942.5175
Vendor	6.9200e-003	0.2056	0.0958	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2000e-003		93.3642	93.3642	3.8300e-003	0.0148	97.8679
Worker	0.0782	0.0472	0.7542	2.0000e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		204.3337	204.3337	4.8800e-003	4.8000e-003	205.8876
Total	**0.3082**	**10.4372**	**3.9521**	**0.0549**	**1.8694**	**0.1098**	**1.9792**	**0.5106**	**0.1051**	**0.6156**		**5,966.4093**	**5,966.4093**	**0.2506**	**0.9181**	**6,246.2729**

3.3 Site and Substation Preparation and Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0751	0.0000	6.0751	3.3160	0.0000	3.3160			0.0000			0.0000
Off-Road	5.9869	52.6148	51.3319	0.1204		2.3414	2.3414		2.2322	2.2322		11,546.1286	11,546.1286	2.4787		11,608.0958
Total	**5.9869**	**52.6148**	**51.3319**	**0.1204**	**6.0751**	**2.3414**	**8.4165**	**3.3160**	**2.2322**	**5.5481**		**11,546.1286**	**11,546.1286**	**2.4787**		**11,608.0958**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site and Substation Preparation and Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8200e-003	0.2200	0.0670	1.1200e-003	0.0350	2.3100e-003	0.0373	9.6000e-003	2.2100e-003	0.0118		122.4344	122.4344	5.2200e-003	0.0194	128.3481
Vendor	6.9200e-003	0.2056	0.0958	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2000e-003		93.3642	93.3642	3.8300e-003	0.0148	97.8679
Worker	0.0782	0.0472	0.7542	2.0000e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		204.3337	204.3337	4.8800e-003	4.8000e-003	205.8876
Total	**0.0899**	**0.4728**	**0.9170**	**3.9800e-003**	**0.2828**	**5.0400e-003**	**0.2879**	**0.0755**	**4.7900e-003**	**0.0803**		**420.1323**	**420.1323**	**0.0139**	**0.0390**	**432.1036**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3693	0.0000	2.3693	1.2932	0.0000	1.2932			0.0000			0.0000
Off-Road	5.9869	52.6148	51.3319	0.1204		2.3414	2.3414		2.2322	2.2322	0.0000	11,546.1286	11,546.1286	2.4787		11,608.0958
Total	**5.9869**	**52.6148**	**51.3319**	**0.1204**	**2.3693**	**2.3414**	**4.7107**	**1.2932**	**2.2322**	**3.5254**	**0.0000**	**11,546.1286**	**11,546.1286**	**2.4787**		**11,608.0958**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site and Substation Preparation and Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8200e-003	0.2200	0.0670	1.1200e-003	0.0350	2.3100e-003	0.0373	9.6000e-003	2.2100e-003	0.0118		122.4344	122.4344	5.2200e-003	0.0194	128.3481
Vendor	6.9200e-003	0.2056	0.0958	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2000e-003		93.3642	93.3642	3.8300e-003	0.0148	97.8679
Worker	0.0782	0.0472	0.7542	2.0000e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		204.3337	204.3337	4.8800e-003	4.8000e-003	205.8876
Total	**0.0899**	**0.4728**	**0.9170**	**3.9800e-003**	**0.2828**	**5.0400e-003**	**0.2879**	**0.0755**	**4.7900e-003**	**0.0803**		**420.1323**	**420.1323**	**0.0139**	**0.0390**	**432.1036**

3.4 Energy Storage and Substation Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1578	19.9607	24.7472	0.0420		0.9712	0.9712		0.9224	0.9224		4,021.6055	4,021.6055	0.8460		4,042.7553
Total	**2.1578**	**19.9607**	**24.7472**	**0.0420**		**0.9712**	**0.9712**		**0.9224**	**0.9224**		**4,021.6055**	**4,021.6055**	**0.8460**		**4,042.7553**

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Energy Storage and Substation Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8200e-003	0.2200	0.0670	1.1200e-003	0.0350	2.3100e-003	0.0373	9.6000e-003	2.2100e-003	0.0118		122.4344	122.4344	5.2200e-003	0.0194	128.3481
Vendor	0.0208	0.6168	0.2875	2.5700e-003	0.0727	4.8800e-003	0.0776	0.0199	4.6700e-003	0.0246		280.0926	280.0926	0.0115	0.0444	293.6037
Worker	0.1564	0.0944	1.5084	3.9900e-003	0.4471	2.2100e-003	0.4493	0.1186	2.0300e-003	0.1206		408.6674	408.6674	9.7600e-003	9.6100e-003	411.7752
Total	**0.1820**	**0.9311**	**1.8629**	**7.6800e-003**	**0.5548**	**9.4000e-003**	**0.5642**	**0.1481**	**8.9100e-003**	**0.1570**		**811.1944**	**811.1944**	**0.0265**	**0.0734**	**833.7270**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1578	19.9607	24.7472	0.0420		0.9712	0.9712		0.9224	0.9224	0.0000	4,021.6055	4,021.6055	0.8460		4,042.7553
Total	**2.1578**	**19.9607**	**24.7472**	**0.0420**		**0.9712**	**0.9712**		**0.9224**	**0.9224**	**0.0000**	**4,021.6055**	**4,021.6055**	**0.8460**		**4,042.7553**

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Energy Storage and Substation Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8200e-003	0.2200	0.0670	1.1200e-003	0.0350	2.3100e-003	0.0373	9.6000e-003	2.2100e-003	0.0118		122.4344	122.4344	5.2200e-003	0.0194	128.3481
Vendor	0.0208	0.6168	0.2875	2.5700e-003	0.0727	4.8800e-003	0.0776	0.0199	4.6700e-003	0.0246		280.0926	280.0926	0.0115	0.0444	293.6037
Worker	0.1564	0.0944	1.5084	3.9900e-003	0.4471	2.2100e-003	0.4493	0.1186	2.0300e-003	0.1206		408.6674	408.6674	9.7600e-003	9.6100e-003	411.7752
Total	**0.1820**	**0.9311**	**1.8629**	**7.6800e-003**	**0.5548**	**9.4000e-003**	**0.5642**	**0.1481**	**8.9100e-003**	**0.1570**		**811.1944**	**811.1944**	**0.0265**	**0.0734**	**833.7270**

3.5 Gen-Tie Construction and Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.4188	37.6653	43.6107	0.0803		1.7757	1.7757		1.7407	1.7407		7,563.4603	7,563.4603	0.7689		7,582.6815
Total	**4.4188**	**37.6653**	**43.6107**	**0.0803**		**1.7757**	**1.7757**		**1.7407**	**1.7407**		**7,563.4603**	**7,563.4603**	**0.7689**		**7,582.6815**

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8200e-003	0.2200	0.0670	1.1200e-003	0.0350	2.3100e-003	0.0373	9.6000e-003	2.2100e-003	0.0118		122.4344	122.4344	5.2200e-003	0.0194	128.3481
Vendor	6.9200e-003	0.2056	0.0958	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2000e-003		93.3642	93.3642	3.8300e-003	0.0148	97.8679
Worker	0.1564	0.0944	1.5084	3.9900e-003	0.4471	2.2100e-003	0.4493	0.1186	2.0300e-003	0.1206		408.6674	408.6674	9.7600e-003	9.6100e-003	411.7752
Total	**0.1682**	**0.5199**	**1.6713**	**5.9700e-003**	**0.5064**	**6.1500e-003**	**0.5125**	**0.1348**	**5.8000e-003**	**0.1406**		**624.4660**	**624.4660**	**0.0188**	**0.0438**	**637.9912**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.4188	37.6653	43.6107	0.0803		1.7757	1.7757		1.7407	1.7407	0.0000	7,563.4603	7,563.4603	0.7689		7,582.6815
Total	**4.4188**	**37.6653**	**43.6107**	**0.0803**		**1.7757**	**1.7757**		**1.7407**	**1.7407**	**0.0000**	**7,563.4603**	**7,563.4603**	**0.7689**		**7,582.6815**

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8200e-003	0.2200	0.0670	1.1200e-003	0.0350	2.3100e-003	0.0373	9.6000e-003	2.2100e-003	0.0118		122.4344	122.4344	5.2200e-003	0.0194	128.3481
Vendor	6.9200e-003	0.2056	0.0958	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2000e-003		93.3642	93.3642	3.8300e-003	0.0148	97.8679
Worker	0.1564	0.0944	1.5084	3.9900e-003	0.4471	2.2100e-003	0.4493	0.1186	2.0300e-003	0.1206		408.6674	408.6674	9.7600e-003	9.6100e-003	411.7752
Total	**0.1682**	**0.5199**	**1.6713**	**5.9700e-003**	**0.5064**	**6.1500e-003**	**0.5125**	**0.1348**	**5.8000e-003**	**0.1406**		**624.4660**	**624.4660**	**0.0188**	**0.0438**	**637.9912**

3.5 Gen-Tie Construction and Installation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1276	35.2116	43.4053	0.0803		1.5500	1.5500		1.5185	1.5185		7,563.4365	7,563.4365	0.7479		7,582.1347
Total	**4.1276**	**35.2116**	**43.4053**	**0.0803**		**1.5500**	**1.5500**		**1.5185**	**1.5185**		**7,563.4365**	**7,563.4365**	**0.7479**		**7,582.1347**

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.7800e-003	0.2207	0.0672	1.1000e-003	0.0350	2.2800e-003	0.0373	9.6000e-003	2.1800e-003	0.0118		120.3079	120.3079	5.0700e-003	0.0191	126.1172
Vendor	6.8800e-003	0.2059	0.0959	8.4000e-004	0.0242	1.6100e-003	0.0258	6.6500e-003	1.5400e-003	8.1800e-003		91.7566	91.7566	3.7200e-003	0.0145	96.1816
Worker	0.1453	0.0838	1.4047	3.8800e-003	0.4471	2.1200e-003	0.4492	0.1186	1.9500e-003	0.1205		399.8999	399.8999	8.8300e-003	8.9100e-003	402.7753
Total	**0.1570**	**0.5104**	**1.5678**	**5.8200e-003**	**0.5064**	**6.0100e-003**	**0.5124**	**0.1348**	**5.6700e-003**	**0.1405**		**611.9644**	**611.9644**	**0.0176**	**0.0425**	**625.0741**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1276	35.2116	43.4053	0.0803		1.5500	1.5500		1.5185	1.5185	0.0000	7,563.4365	7,563.4365	0.7479		7,582.1347
Total	**4.1276**	**35.2116**	**43.4053**	**0.0803**		**1.5500**	**1.5500**		**1.5185**	**1.5185**	**0.0000**	**7,563.4365**	**7,563.4365**	**0.7479**		**7,582.1347**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.7800e-003	0.2207	0.0672	1.1000e-003	0.0350	2.2800e-003	0.0373	9.6000e-003	2.1800e-003	0.0118		120.3079	120.3079	5.0700e-003	0.0191	126.1172
Vendor	6.8800e-003	0.2059	0.0959	8.4000e-004	0.0242	1.6100e-003	0.0258	6.6500e-003	1.5400e-003	8.1800e-003		91.7566	91.7566	3.7200e-003	0.0145	96.1816
Worker	0.1453	0.0838	1.4047	3.8800e-003	0.4471	2.1200e-003	0.4492	0.1186	1.9500e-003	0.1205		399.8999	399.8999	8.8300e-003	8.9100e-003	402.7753
Total	**0.1570**	**0.5104**	**1.5678**	**5.8200e-003**	**0.5064**	**6.0100e-003**	**0.5124**	**0.1348**	**5.6700e-003**	**0.1405**		**611.9644**	**611.9644**	**0.0176**	**0.0425**	**625.0741**

3.6 Testing and Commissioning - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9941	6.6557	6.5005	0.0265		0.2396	0.2396		0.2205	0.2205		2,560.7009	2,560.7009	0.8282		2,581.4054
Total	**0.9941**	**6.6557**	**6.5005**	**0.0265**		**0.2396**	**0.2396**		**0.2205**	**0.2205**		**2,560.7009**	**2,560.7009**	**0.8282**		**2,581.4054**

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Testing and Commissioning - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0727	0.0419	0.7024	1.9400e-003	0.2236	1.0600e-003	0.2246	0.0593	9.8000e-004	0.0603		199.9500	199.9500	4.4200e-003	4.4500e-003	201.3877
Total	**0.0727**	**0.0419**	**0.7024**	**1.9400e-003**	**0.2236**	**1.0600e-003**	**0.2246**	**0.0593**	**9.8000e-004**	**0.0603**		**199.9500**	**199.9500**	**4.4200e-003**	**4.4500e-003**	**201.3877**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9941	6.6557	6.5005	0.0265		0.2396	0.2396		0.2205	0.2205	0.0000	2,560.7009	2,560.7009	0.8282		2,581.4054
Total	**0.9941**	**6.6557**	**6.5005**	**0.0265**		**0.2396**	**0.2396**		**0.2205**	**0.2205**	**0.0000**	**2,560.7009**	**2,560.7009**	**0.8282**		**2,581.4054**

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Testing and Commissioning - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0727	0.0419	0.7024	1.9400e-003	0.2236	1.0600e-003	0.2246	0.0593	9.8000e-004	0.0603		199.9500	199.9500	4.4200e-003	4.4500e-003	201.3877
Total	**0.0727**	**0.0419**	**0.7024**	**1.9400e-003**	**0.2236**	**1.0600e-003**	**0.2246**	**0.0593**	**9.8000e-004**	**0.0603**		**199.9500**	**199.9500**	**4.4200e-003**	**4.4500e-003**	**201.3877**

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.4100e-003	6.8900e-003	0.0539	1.3000e-004	0.0128	9.0000e-005	0.0129	3.4200e-003	9.0000e-005	3.5100e-003		13.1014	13.1014	5.9000e-004	5.5000e-004	13.2794
Unmitigated	4.4100e-003	6.8900e-003	0.0539	1.3000e-004	0.0128	9.0000e-005	0.0129	3.4200e-003	9.0000e-005	3.5100e-003		13.1014	13.1014	5.9000e-004	5.5000e-004	13.2794

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	1.01	0.00	0.00	4,338	4,338
Total	1.01	0.00	0.00	4,338	4,338

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963
NaturalGas Unmitigated	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	1691.62	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963
Total		**0.0182**	**0.1658**	**0.1393**	**1.0000e-003**		**0.0126**	**0.0126**		**0.0126**	**0.0126**		**199.0137**	**199.0137**	**3.8100e-003**	**3.6500e-003**	**200.1963**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	1.69162	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963
Total		**0.0182**	**0.1658**	**0.1393**	**1.0000e-003**		**0.0126**	**0.0126**		**0.0126**	**0.0126**		**199.0137**	**199.0137**	**3.8100e-003**	**3.6500e-003**	**200.1963**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Unmitigated	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004

Zephyr Battery Storage - San Bernardino-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	**1.0000e-005**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.3000e-004**	**3.3000e-004**	**0.0000**		**3.5000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	**1.0000e-005**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.3000e-004**	**3.3000e-004**	**0.0000**		**3.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	8.00	30	402	0.38	Diesel

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Off-Highway Trucks	0.4970	3.3279	3.2502	0.0132		0.1198	0.1198		0.1102	0.1102	0.0000	1,280.3504	1,280.3504	0.4141		1,290.7027
Total	**0.4970**	**3.3279**	**3.2502**	**0.0132**		**0.1198**	**0.1198**		**0.1102**	**0.1102**	**0.0000**	**1,280.3504**	**1,280.3504**	**0.4141**		**1,290.7027**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Zephyr Battery Storage

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.50	User Defined Unit	1.50	18,160.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Provided by Applicant

Construction Phase - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Trips and VMT - Provided by applicant; HHDT vehicle class assumed for vendor trips and haul trips

Demolition - Provided by applicant

Grading - Provided by applicant

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Trips - Assumed 1-2 workers on a weekly basis

Consumer Products - No Consumer Product Emissions

Area Coating - Not Applicable

Energy Use - Default data used

Water And Wastewater - Provided by Applicant- Water Use for general maintenance

Land Use Change -

Construction Off-road Equipment Mitigation - Water Exposed Area: 3 times per day

Operational Off-Road Equipment - Up to 30 days/year for infrequent maintenance

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	9080	0
tblAreaCoating	Area_Nonresidential_Interior	27240	0
tblConstructionPhase	NumDays	200.00	100.00
tblConstructionPhase	NumDays	200.00	50.00
tblConstructionPhase	NumDays	200.00	40.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	2.00	30.00
tblConsumerProducts	ROG_EF	1.98E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	0.00	3.62
tblEnergyUse	NT24E	0.00	5.02
tblEnergyUse	NT24NG	0.00	17.00
tblEnergyUse	T24E	0.00	2.89
tblEnergyUse	T24NG	0.00	17.00
tblGrading	AcresOfGrading	30.00	1.50
tblLandUse	LandUseSquareFeet	0.00	18,160.00
tblLandUse	LotAcreage	0.00	1.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	30.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	42.00	926.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	200.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	12.00
tblTripsAndVMT	VendorTripNumber	3.00	4.00
tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	38.00	20.00
tblTripsAndVMT	WorkerTripNumber	38.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	40.00
tblTripsAndVMT	WorkerTripNumber	8.00	40.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.67
tblWater	OutdoorWaterUseRate	0.00	100,000.00

2.0 Emissions Summary

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	6.2747	63.6191	55.2090	0.1752	6.3579	2.4514	8.7044	3.3915	2.3374	5.6284	0.0000	17,502.2486	17,502.2486	2.7284	0.9197	17,844.5242
2024	4.2785	35.7512	44.7294	0.0857	0.5064	1.5560	2.0624	0.1348	1.5242	1.6590	0.0000	8,138.4278	8,138.4278	0.8326	0.0429	8,170.3453
Maximum	**6.2747**	**63.6191**	**55.2090**	**0.1752**	**6.3579**	**2.4514**	**8.7044**	**3.3915**	**2.3374**	**5.6284**	**0.0000**	**17,502.2486**	**17,502.2486**	**2.7284**	**0.9197**	**17,844.5242**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	6.2747	63.6191	55.2090	0.1752	2.6521	2.4514	4.9985	1.3688	2.3374	3.6057	0.0000	17,502.2486	17,502.2486	2.7284	0.9197	17,844.5242
2024	4.2785	35.7512	44.7294	0.0857	0.5064	1.5560	2.0624	0.1348	1.5242	1.6590	0.0000	8,138.4278	8,138.4278	0.8326	0.0429	8,170.3453
Maximum	**6.2747**	**63.6191**	**55.2090**	**0.1752**	**2.6521**	**2.4514**	**4.9985**	**1.3688**	**2.3374**	**3.6057**	**0.0000**	**17,502.2486**	**17,502.2486**	**2.7284**	**0.9197**	**17,844.5242**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.99**	**0.00**	**34.42**	**57.36**	**0.00**	**27.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963
Mobile	3.9700e-003	7.3100e-003	0.0471	1.2000e-004	0.0128	9.0000e-005	0.0129	3.4200e-003	9.0000e-005	3.5100e-003		12.1435	12.1435	6.0000e-004	5.6000e-004	12.3254
Offroad	0.4970	3.3279	3.2502	0.0132		0.1198	0.1198		0.1102	0.1102	0.0000	1,280.3504	1,280.3504	0.4141		1,290.7027
Total	**0.5192**	**3.5010**	**3.4368**	**0.0144**	**0.0128**	**0.1325**	**0.1453**	**3.4200e-003**	**0.1229**	**0.1263**	**0.0000**	**1,491.5079**	**1,491.5079**	**0.4185**	**4.2100e-003**	**1,503.2248**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963
Mobile	3.9700e-003	7.3100e-003	0.0471	1.2000e-004	0.0128	9.0000e-005	0.0129	3.4200e-003	9.0000e-005	3.5100e-003		12.1435	12.1435	6.0000e-004	5.6000e-004	12.3254
Offroad	0.4970	3.3279	3.2502	0.0132		0.1198	0.1198		0.1102	0.1102	0.0000	1,280.3504	1,280.3504	0.4141		1,290.7027
Total	**0.5192**	**3.5010**	**3.4368**	**0.0144**	**0.0128**	**0.1325**	**0.1453**	**3.4200e-003**	**0.1229**	**0.1263**	**0.0000**	**1,491.5079**	**1,491.5079**	**0.4185**	**4.2100e-003**	**1,503.2248**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/19/2023	6/30/2023	5	10	
2	Site and Substation Preparation and Grading	Site Preparation	7/1/2023	8/11/2023	5	30	
3	Energy Storage and Substation Installation	Building Construction	8/12/2023	12/29/2023	5	100	
4	Gen-Tie Construction and Installation	Building Construction	12/30/2023	3/8/2024	5	50	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5	Testing and Commissioning	Building Construction	3/9/2024	5/3/2024	5	40	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Dumpers/Tenders	1	8.00	16	0.38
Demolition	Generator Sets	2	24.00	84	0.74
Demolition	Graders	1	8.00	187	0.41
Demolition	Off-Highway Trucks	3	8.00	402	0.38
Demolition	Rollers	1	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Trenchers	1	8.00	78	0.50
Site and Substation Preparation and Grading	Air Compressors	2	8.00	78	0.48
Site and Substation Preparation and Grading	Dumpers/Tenders	1	8.00	16	0.38
Site and Substation Preparation and Grading	Generator Sets	2	24.00	84	0.74
Site and Substation Preparation and Grading	Graders	1	8.00	187	0.41
Site and Substation Preparation and Grading	Off-Highway Trucks	3	8.00	402	0.38
Site and Substation Preparation and Grading	Rollers	1	8.00	80	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site and Substation Preparation and Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site and Substation Preparation and Grading	Rubber Tired Loaders	1	8.00	203	0.36
Site and Substation Preparation and Grading	Skid Steer Loaders	1	8.00	65	0.37
Site and Substation Preparation and Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site and Substation Preparation and Grading	Trenchers	1	8.00	78	0.50
Energy Storage and Substation Installation	Air Compressors	1	8.00	78	0.48
Energy Storage and Substation Installation	Cranes	1	8.00	231	0.29
Energy Storage and Substation Installation	Excavators	1	8.00	158	0.38
Energy Storage and Substation Installation	Forklifts	1	8.00	89	0.20
Energy Storage and Substation Installation	Generator Sets	2	8.00	84	0.74
Energy Storage and Substation Installation	Plate Compactors	1	8.00	8	0.43
Energy Storage and Substation Installation	Rollers	1	8.00	80	0.38
Energy Storage and Substation Installation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Gen-Tie Construction and Installation	Air Compressors	2	8.00	78	0.48
Gen-Tie Construction and Installation	Cranes	2	8.00	231	0.29
Gen-Tie Construction and Installation	Forklifts	2	8.00	89	0.20
Gen-Tie Construction and Installation	Generator Sets	2	24.00	84	0.74
Gen-Tie Construction and Installation	Pumps	2	8.00	84	0.74
Gen-Tie Construction and Installation	Welders	2	8.00	46	0.45
Testing and Commissioning	Off-Highway Trucks	2	8.00	402	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	15	20.00	4.00	926.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Site and Substation Preparation and Gradi	15	20.00	4.00	60.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Energy Storage and Substation Installation	11	40.00	12.00	200.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Gen-Tie Construction and Installation	12	40.00	4.00	100.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT
Testing and Commissioning	2	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9017	0.0000	0.9017	0.1365	0.0000	0.1365			0.0000			0.0000
Off-Road	5.9869	52.6148	51.3319	0.1204		2.3414	2.3414		2.2322	2.2322		11,546.1286	11,546.1286	2.4787		11,608.0958
Total	**5.9869**	**52.6148**	**51.3319**	**0.1204**	**0.9017**	**2.3414**	**3.2431**	**0.1365**	**2.2322**	**2.3687**		**11,546.1286**	**11,546.1286**	**2.4787**		**11,608.0958**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2063	10.7361	3.1581	0.0521	1.6216	0.1073	1.7289	0.4447	0.1027	0.5473		5,677.2651	5,677.2651	0.2410	0.8999	5,951.4533
Vendor	6.1900e-003	0.2185	0.0983	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2100e-003		93.7337	93.7337	3.7900e-003	0.0149	98.2539
Worker	0.0753	0.0496	0.6208	1.8100e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		185.1212	185.1212	4.8900e-003	4.9600e-003	186.7212
Total	**0.2878**	**11.0043**	**3.8771**	**0.0548**	**1.8694**	**0.1100**	**1.9794**	**0.5106**	**0.1052**	**0.6158**		**5,956.1200**	**5,956.1200**	**0.2497**	**0.9197**	**6,236.4284**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3517	0.0000	0.3517	0.0532	0.0000	0.0532			0.0000			0.0000
Off-Road	5.9869	52.6148	51.3319	0.1204		2.3414	2.3414		2.2322	2.2322	0.0000	11,546.1286	11,546.1286	2.4787		11,608.0958
Total	**5.9869**	**52.6148**	**51.3319**	**0.1204**	**0.3517**	**2.3414**	**2.6930**	**0.0532**	**2.2322**	**2.2854**	**0.0000**	**11,546.1286**	**11,546.1286**	**2.4787**		**11,608.0958**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2063	10.7361	3.1581	0.0521	1.6216	0.1073	1.7289	0.4447	0.1027	0.5473		5,677.2651	5,677.2651	0.2410	0.8999	5,951.4533
Vendor	6.1900e-003	0.2185	0.0983	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2100e-003		93.7337	93.7337	3.7900e-003	0.0149	98.2539
Worker	0.0753	0.0496	0.6208	1.8100e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		185.1212	185.1212	4.8900e-003	4.9600e-003	186.7212
Total	**0.2878**	**11.0043**	**3.8771**	**0.0548**	**1.8694**	**0.1100**	**1.9794**	**0.5106**	**0.1052**	**0.6158**		**5,956.1200**	**5,956.1200**	**0.2497**	**0.9197**	**6,236.4284**

3.3 Site and Substation Preparation and Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0751	0.0000	6.0751	3.3160	0.0000	3.3160			0.0000			0.0000
Off-Road	5.9869	52.6148	51.3319	0.1204		2.3414	2.3414		2.2322	2.2322		11,546.1286	11,546.1286	2.4787		11,608.0958
Total	**5.9869**	**52.6148**	**51.3319**	**0.1204**	**6.0751**	**2.3414**	**8.4165**	**3.3160**	**2.2322**	**5.5481**		**11,546.1286**	**11,546.1286**	**2.4787**		**11,608.0958**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site and Substation Preparation and Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.4600e-003	0.2319	0.0682	1.1300e-003	0.0350	2.3200e-003	0.0373	9.6000e-003	2.2200e-003	0.0118		122.6191	122.6191	5.2100e-003	0.0194	128.5411
Vendor	6.1900e-003	0.2185	0.0983	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2100e-003		93.7337	93.7337	3.7900e-003	0.0149	98.2539
Worker	0.0753	0.0496	0.6208	1.8100e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		185.1212	185.1212	4.8900e-003	4.9600e-003	186.7212
Total	**0.0860**	**0.5000**	**0.7873**	**3.8000e-003**	**0.2828**	**5.0500e-003**	**0.2879**	**0.0755**	**4.8000e-003**	**0.0803**		**401.4740**	**401.4740**	**0.0139**	**0.0393**	**413.5162**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3693	0.0000	2.3693	1.2932	0.0000	1.2932			0.0000			0.0000
Off-Road	5.9869	52.6148	51.3319	0.1204		2.3414	2.3414		2.2322	2.2322	0.0000	11,546.1286	11,546.1286	2.4787		11,608.0958
Total	**5.9869**	**52.6148**	**51.3319**	**0.1204**	**2.3693**	**2.3414**	**4.7107**	**1.2932**	**2.2322**	**3.5254**	**0.0000**	**11,546.1286**	**11,546.1286**	**2.4787**		**11,608.0958**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site and Substation Preparation and Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.4600e-003	0.2319	0.0682	1.1300e-003	0.0350	2.3200e-003	0.0373	9.6000e-003	2.2200e-003	0.0118		122.6191	122.6191	5.2100e-003	0.0194	128.5411
Vendor	6.1900e-003	0.2185	0.0983	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2100e-003		93.7337	93.7337	3.7900e-003	0.0149	98.2539
Worker	0.0753	0.0496	0.6208	1.8100e-003	0.2236	1.1000e-003	0.2247	0.0593	1.0200e-003	0.0603		185.1212	185.1212	4.8900e-003	4.9600e-003	186.7212
Total	**0.0860**	**0.5000**	**0.7873**	**3.8000e-003**	**0.2828**	**5.0500e-003**	**0.2879**	**0.0755**	**4.8000e-003**	**0.0803**		**401.4740**	**401.4740**	**0.0139**	**0.0393**	**413.5162**

3.4 Energy Storage and Substation Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1578	19.9607	24.7472	0.0420		0.9712	0.9712		0.9224	0.9224		4,021.6055	4,021.6055	0.8460		4,042.7553
Total	**2.1578**	**19.9607**	**24.7472**	**0.0420**		**0.9712**	**0.9712**		**0.9224**	**0.9224**		**4,021.6055**	**4,021.6055**	**0.8460**		**4,042.7553**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Energy Storage and Substation Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.4600e-003	0.2319	0.0682	1.1300e-003	0.0350	2.3200e-003	0.0373	9.6000e-003	2.2200e-003	0.0118		122.6191	122.6191	5.2100e-003	0.0194	128.5411
Vendor	0.0186	0.6555	0.2948	2.5800e-003	0.0727	4.9000e-003	0.0776	0.0199	4.6900e-003	0.0246		281.2012	281.2012	0.0114	0.0446	294.7617
Worker	0.1507	0.0992	1.2415	3.6200e-003	0.4471	2.2100e-003	0.4493	0.1186	2.0300e-003	0.1206		370.2423	370.2423	9.7700e-003	9.9200e-003	373.4424
Total	**0.1737**	**0.9866**	**1.6046**	**7.3300e-003**	**0.5548**	**9.4300e-003**	**0.5642**	**0.1481**	**8.9400e-003**	**0.1571**		**774.0626**	**774.0626**	**0.0264**	**0.0739**	**796.7452**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1578	19.9607	24.7472	0.0420		0.9712	0.9712		0.9224	0.9224	0.0000	4,021.6055	4,021.6055	0.8460		4,042.7553
Total	**2.1578**	**19.9607**	**24.7472**	**0.0420**		**0.9712**	**0.9712**		**0.9224**	**0.9224**	**0.0000**	**4,021.6055**	**4,021.6055**	**0.8460**		**4,042.7553**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Energy Storage and Substation Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.4600e-003	0.2319	0.0682	1.1300e-003	0.0350	2.3200e-003	0.0373	9.6000e-003	2.2200e-003	0.0118		122.6191	122.6191	5.2100e-003	0.0194	128.5411
Vendor	0.0186	0.6555	0.2948	2.5800e-003	0.0727	4.9000e-003	0.0776	0.0199	4.6900e-003	0.0246		281.2012	281.2012	0.0114	0.0446	294.7617
Worker	0.1507	0.0992	1.2415	3.6200e-003	0.4471	2.2100e-003	0.4493	0.1186	2.0300e-003	0.1206		370.2423	370.2423	9.7700e-003	9.9200e-003	373.4424
Total	**0.1737**	**0.9866**	**1.6046**	**7.3300e-003**	**0.5548**	**9.4300e-003**	**0.5642**	**0.1481**	**8.9400e-003**	**0.1571**		**774.0626**	**774.0626**	**0.0264**	**0.0739**	**796.7452**

3.5 Gen-Tie Construction and Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.4188	37.6653	43.6107	0.0803		1.7757	1.7757		1.7407	1.7407		7,563.4603	7,563.4603	0.7689		7,582.6815
Total	**4.4188**	**37.6653**	**43.6107**	**0.0803**		**1.7757**	**1.7757**		**1.7407**	**1.7407**		**7,563.4603**	**7,563.4603**	**0.7689**		**7,582.6815**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.4600e-003	0.2319	0.0682	1.1300e-003	0.0350	2.3200e-003	0.0373	9.6000e-003	2.2200e-003	0.0118		122.6191	122.6191	5.2100e-003	0.0194	128.5411
Vendor	6.1900e-003	0.2185	0.0983	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2100e-003		93.7337	93.7337	3.7900e-003	0.0149	98.2539
Worker	0.1507	0.0992	1.2415	3.6200e-003	0.4471	2.2100e-003	0.4493	0.1186	2.0300e-003	0.1206		370.2423	370.2423	9.7700e-003	9.9200e-003	373.4424
Total	**0.1613**	**0.5496**	**1.4080**	**5.6100e-003**	**0.5064**	**6.1600e-003**	**0.5125**	**0.1348**	**5.8100e-003**	**0.1406**		**586.5952**	**586.5952**	**0.0188**	**0.0442**	**600.2374**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.4188	37.6653	43.6107	0.0803		1.7757	1.7757		1.7407	1.7407	0.0000	7,563.4603	7,563.4603	0.7689		7,582.6815
Total	**4.4188**	**37.6653**	**43.6107**	**0.0803**		**1.7757**	**1.7757**		**1.7407**	**1.7407**	**0.0000**	**7,563.4603**	**7,563.4603**	**0.7689**		**7,582.6815**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.4600e-003	0.2319	0.0682	1.1300e-003	0.0350	2.3200e-003	0.0373	9.6000e-003	2.2200e-003	0.0118		122.6191	122.6191	5.2100e-003	0.0194	128.5411
Vendor	6.1900e-003	0.2185	0.0983	8.6000e-004	0.0242	1.6300e-003	0.0259	6.6500e-003	1.5600e-003	8.2100e-003		93.7337	93.7337	3.7900e-003	0.0149	98.2539
Worker	0.1507	0.0992	1.2415	3.6200e-003	0.4471	2.2100e-003	0.4493	0.1186	2.0300e-003	0.1206		370.2423	370.2423	9.7700e-003	9.9200e-003	373.4424
Total	**0.1613**	**0.5496**	**1.4080**	**5.6100e-003**	**0.5064**	**6.1600e-003**	**0.5125**	**0.1348**	**5.8100e-003**	**0.1406**		**586.5952**	**586.5952**	**0.0188**	**0.0442**	**600.2374**

3.5 Gen-Tie Construction and Installation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1276	35.2116	43.4053	0.0803		1.5500	1.5500		1.5185	1.5185		7,563.4365	7,563.4365	0.7479		7,582.1347
Total	**4.1276**	**35.2116**	**43.4053**	**0.0803**		**1.5500**	**1.5500**		**1.5185**	**1.5185**		**7,563.4365**	**7,563.4365**	**0.7479**		**7,582.1347**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.4100e-003	0.2327	0.0684	1.1100e-003	0.0350	2.2900e-003	0.0373	9.6000e-003	2.1900e-003	0.0118		120.4908	120.4908	5.0500e-003	0.0191	126.3082
Vendor	6.1500e-003	0.2189	0.0983	8.5000e-004	0.0242	1.6100e-003	0.0258	6.6500e-003	1.5400e-003	8.1900e-003		92.1224	92.1224	3.6900e-003	0.0146	96.5637
Worker	0.1403	0.0881	1.1575	3.5100e-003	0.4471	2.1200e-003	0.4492	0.1186	1.9500e-003	0.1205		362.3781	362.3781	8.8600e-003	9.1900e-003	365.3387
Total	**0.1509**	**0.5396**	**1.3241**	**5.4700e-003**	**0.5064**	**6.0200e-003**	**0.5124**	**0.1348**	**5.6800e-003**	**0.1405**		**574.9913**	**574.9913**	**0.0176**	**0.0429**	**588.2105**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1276	35.2116	43.4053	0.0803		1.5500	1.5500		1.5185	1.5185	0.0000	7,563.4365	7,563.4365	0.7479		7,582.1347
Total	**4.1276**	**35.2116**	**43.4053**	**0.0803**		**1.5500**	**1.5500**		**1.5185**	**1.5185**	**0.0000**	**7,563.4365**	**7,563.4365**	**0.7479**		**7,582.1347**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Gen-Tie Construction and Installation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.4100e-003	0.2327	0.0684	1.1100e-003	0.0350	2.2900e-003	0.0373	9.6000e-003	2.1900e-003	0.0118		120.4908	120.4908	5.0500e-003	0.0191	126.3082
Vendor	6.1500e-003	0.2189	0.0983	8.5000e-004	0.0242	1.6100e-003	0.0258	6.6500e-003	1.5400e-003	8.1900e-003		92.1224	92.1224	3.6900e-003	0.0146	96.5637
Worker	0.1403	0.0881	1.1575	3.5100e-003	0.4471	2.1200e-003	0.4492	0.1186	1.9500e-003	0.1205		362.3781	362.3781	8.8600e-003	9.1900e-003	365.3387
Total	**0.1509**	**0.5396**	**1.3241**	**5.4700e-003**	**0.5064**	**6.0200e-003**	**0.5124**	**0.1348**	**5.6800e-003**	**0.1405**		**574.9913**	**574.9913**	**0.0176**	**0.0429**	**588.2105**

3.6 Testing and Commissioning - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9941	6.6557	6.5005	0.0265		0.2396	0.2396		0.2205	0.2205		2,560.7009	2,560.7009	0.8282		2,581.4054
Total	**0.9941**	**6.6557**	**6.5005**	**0.0265**		**0.2396**	**0.2396**		**0.2205**	**0.2205**		**2,560.7009**	**2,560.7009**	**0.8282**		**2,581.4054**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Testing and Commissioning - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0702	0.0440	0.5787	1.7600e-003	0.2236	1.0600e-003	0.2246	0.0593	9.8000e-004	0.0603		181.1891	181.1891	4.4300e-003	4.6000e-003	182.6693
Total	**0.0702**	**0.0440**	**0.5787**	**1.7600e-003**	**0.2236**	**1.0600e-003**	**0.2246**	**0.0593**	**9.8000e-004**	**0.0603**		**181.1891**	**181.1891**	**4.4300e-003**	**4.6000e-003**	**182.6693**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9941	6.6557	6.5005	0.0265		0.2396	0.2396		0.2205	0.2205	0.0000	2,560.7009	2,560.7009	0.8282		2,581.4054
Total	**0.9941**	**6.6557**	**6.5005**	**0.0265**		**0.2396**	**0.2396**		**0.2205**	**0.2205**	**0.0000**	**2,560.7009**	**2,560.7009**	**0.8282**		**2,581.4054**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Testing and Commissioning - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0702	0.0440	0.5787	1.7600e-003	0.2236	1.0600e-003	0.2246	0.0593	9.8000e-004	0.0603		181.1891	181.1891	4.4300e-003	4.6000e-003	182.6693
Total	**0.0702**	**0.0440**	**0.5787**	**1.7600e-003**	**0.2236**	**1.0600e-003**	**0.2246**	**0.0593**	**9.8000e-004**	**0.0603**		**181.1891**	**181.1891**	**4.4300e-003**	**4.6000e-003**	**182.6693**

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.9700e-003	7.3100e-003	0.0471	1.2000e-004	0.0128	9.0000e-005	0.0129	3.4200e-003	9.0000e-005	3.5100e-003		12.1435	12.1435	6.0000e-004	5.6000e-004	12.3254
Unmitigated	3.9700e-003	7.3100e-003	0.0471	1.2000e-004	0.0128	9.0000e-005	0.0129	3.4200e-003	9.0000e-005	3.5100e-003		12.1435	12.1435	6.0000e-004	5.6000e-004	12.3254

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	1.01	0.00	0.00	4,338	4,338
Total	1.01	0.00	0.00	4,338	4,338

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.540566	0.056059	0.172680	0.136494	0.026304	0.007104	0.011680	0.017449	0.000554	0.000251	0.025076	0.000954	0.004830

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963
NaturalGas Unmitigated	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	1691.62	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963
Total		**0.0182**	**0.1658**	**0.1393**	**1.0000e-003**		**0.0126**	**0.0126**		**0.0126**	**0.0126**		**199.0137**	**199.0137**	**3.8100e-003**	**3.6500e-003**	**200.1963**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	1.69162	0.0182	0.1658	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0137	199.0137	3.8100e-003	3.6500e-003	200.1963
Total		**0.0182**	**0.1658**	**0.1393**	**1.0000e-003**		**0.0126**	**0.0126**		**0.0126**	**0.0126**		**199.0137**	**199.0137**	**3.8100e-003**	**3.6500e-003**	**200.1963**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Unmitigated	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	**1.0000e-005**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.3000e-004**	**3.3000e-004**	**0.0000**		**3.5000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	**1.0000e-005**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.3000e-004**	**3.3000e-004**	**0.0000**		**3.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	8.00	30	402	0.38	Diesel

Zephyr Battery Storage - San Bernardino-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Off-Highway Trucks	0.4970	3.3279	3.2502	0.0132		0.1198	0.1198		0.1102	0.1102	0.0000	1,280.3504	1,280.3504	0.4141		1,290.7027
Total	**0.4970**	**3.3279**	**3.2502**	**0.0132**		**0.1198**	**0.1198**		**0.1102**	**0.1102**	**0.0000**	**1,280.3504**	**1,280.3504**	**0.4141**		**1,290.7027**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation