APPENDIX C
AIR QUALITY AND GREENHOUSE GAS REPORT

AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT

Janus Solar Project

Colusa County, California

August 24, 2021

RWE

RWE Solar Development, LLC

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Appendix A. Detailed CalEEMod Output

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Applicant	Janus Solar PV, LLC
AQMP	Air Quality Management Plan
ATCM	air toxics control measures
BCAQMD	Butte County Air Quality Management District
BESS	battery energy storage system
BSA	Broader Sacramento Area
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAPCD	Colusa County Air Pollution Control District
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
EA	Exclusive Agriculture
EPA	U.S. Environmental Protection Agency
FA	Foothill Agriculture
gen-tie	generation tie
GHG	Greenhouse Gas
GWP	global warming potential
HAP	hazardous air pollutants
HFC	hydrofluorocarbon
Janus Solar	Janus Solar Project
kV	kilovolt

lbs/day	pounds per day
µg/m^3	microgram per cubic meter
MT	metric tons
NAAQS	National Ambient Air Quality Standards
N_2O	nitrous oxide
NO_2	nitrogen dioxide
NO_x	Nitrogen oxides
NOA	naturally occurring asbestos
NSVAB	Northern Sacramento Valley Air Basin
NSVPA	Northern Sacramento Valley Planning Area
O_3	ozone
O&M	operations and maintenance
PFC	perfluorocarbons
PG&E	Pacific Gas and Electric Company
PM	particulate matter
$PM_{2.5}$	fine particulate matter equal to or less than 2.5 microns
PM_{10}	fine particulate matter equal to or less than 10 microns
Project	Janus Solar Project
PV	photovoltaic
ROG	reactive organic gases
ROW	right of way
RPW	Renewable Portfolio Standard
SVAB	Sacramento Valley Air Basin
SB	Senate Bill
SF_6	sulfur hexafluoride
SO_2	sulfur dioxide
TAC	toxic air contaminants
USBR	United States Bureau of Reclamation

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 solar project. Janus Solar PV, LLC (Applicant), seeks to develop the Janus Solar Project (Janus Solar or Project), a photovoltaic (PV) solar electrical generating facility, in Colusa County, California. Janus Solar would generate 80 megawatts of renewable energy and would include up to 80 megawatts of battery energy storage system (BESS).

Air quality impacts from grading and construction sources were analyzed based on the equipment 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; AP-42 handbooks), horsepower, load factor, and percentage of time in use. Exhaust and dust emissions from worker commutes and 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 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 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 construction activities, vehicle trips to and from the Project site, and operations and maintenance (O&M) activities. Emissions associated with the emergency engine were also quantified using CalEEMod. The total Project construction and operational emissions were compared to the Butte County Air Quality Management District (BCAQMD) 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 BCAQMD were identified and incorporated as part of the Project's standard conditions. Potential GHG impacts and benefits associated with the proposed solar project were assessed.

1.2 PROJECT DESCRIPTION

The Project consists of constructing and operating a PV solar electricity generating facility, a BESS, the generation tie (gen-tie) line, and associated infrastructure that would produce up to 80 megawatts of alternating current energy at the point of electrical grid interconnection on approximately 1,024 acres of land, owned by a private landowner in unincorporated western Colusa County. To avoid environmental constraints, only approximately 768 acres of the 1,024-acre site would be used for the Project. The proposed BESS would extend the period of time each day that the Project could contribute PV-generated energy to the electrical grid. Up to 5 acres of the solar facility site would be dedicated to the BESS. The BESS would be located adjacent to the on-site substation and contained within steel cabinets or housings. The Project would connect to the electrical grid at the existing Cortina Substation, which is owned and operated by Pacific Gas and Electric Company (PG&E), approximately 4.1 miles northeast of the Project site.

The solar facility would include arrays of solar PV modules (or panels) and support structures, direct current electricity to alternating current electricity power inverters and transformers or power conditioning stations, and an on-site substation. The O&M facility would include office space, storage, and sanitary facilities. The sanitary facilities include portable toilets on site during construction, operations, and

decommissioning. Water would be trucked to the site. Other solar facility components would include access roads, perimeter fences, telecommunications infrastructure, a meteorological data collection system, signage, lighting, and stormwater facilities. Construction is scheduled to begin by the end of 2022.

Internal service roads would be built to access the Project, for ingress and egress to the Project Site, to individual Project components, and between the solar array rows to facilitate installation, maintenance, and cleaning of the solar panels. Roads throughout the arrays would be graveled and provide access to the inverter equipment pads and substations.

To interconnect the Project with the electrical grid, the Applicant would construct a new, 4.1-mile-long overhead, 60 kilovolt (kV) gen-tie line, partially located on Colusa County's right-of-way (ROW) on Walnut Drive and Spring Valley Road and partially on land administered by the United States Bureau of Reclamation (USBR), from the Project Site to the point of interconnection (POI) at the Cortina Substation. Figure 1 shows the Project site.

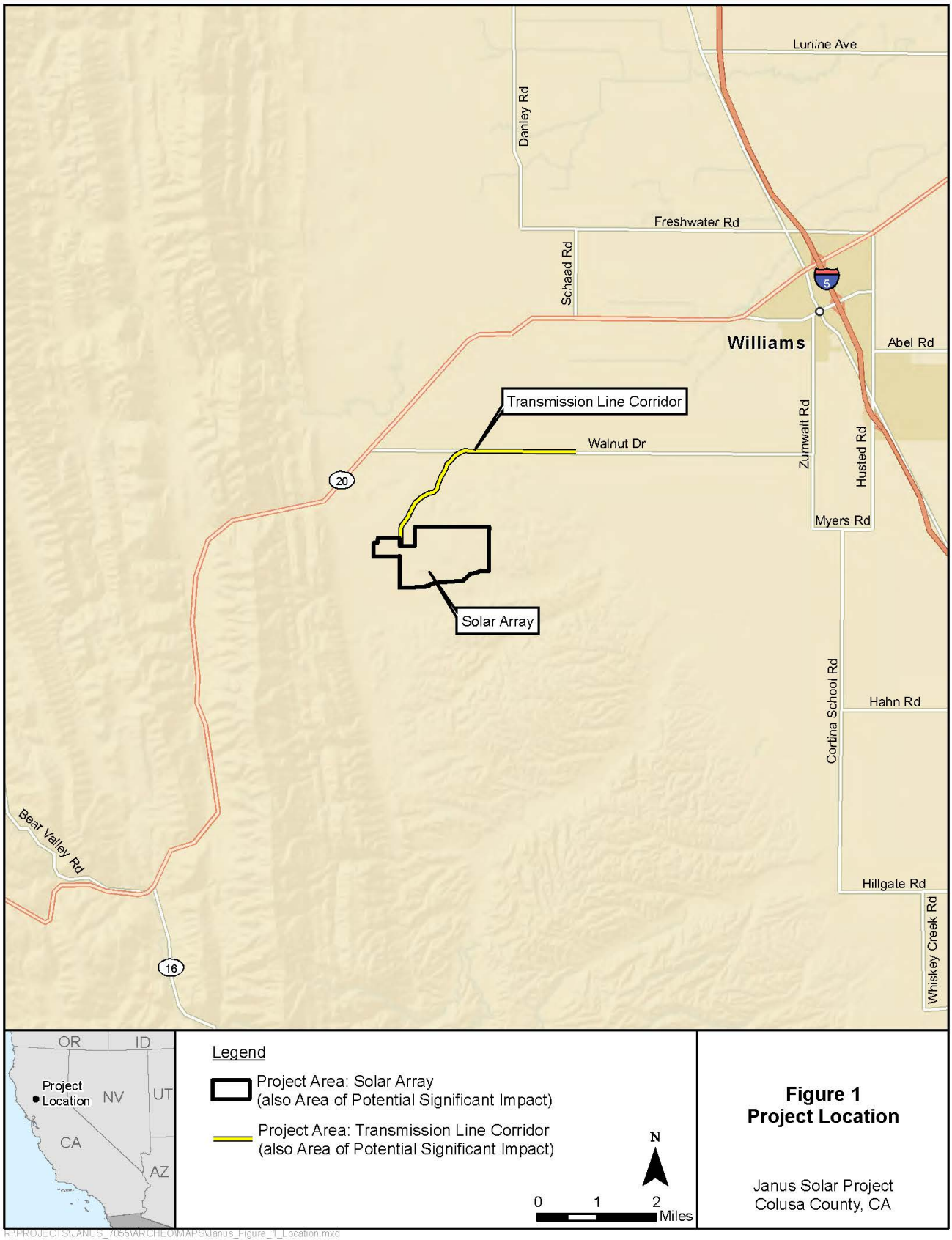
One main, temporary, construction laydown yard is included in the Project. The laydown yard is 3 acres in size, located within the Project Site. The laydown yard would be graded with a gravel surface and temporarily fenced to provide storage for supplies, vehicles, and equipment during construction.

1.3 REGIONAL AND LOCAL SETTING

The Project is approximately 6.5 miles southwest of the City of Williams. State Highway 20 runs about one mile from the Project site, north and west. The proposed Project would be located on three parcels totaling 1,023.9 acres of private property currently used for cattle grazing in Colusa County, California. The Project would connect to the Cortina Substation, located on Walnut Drive, approximately 4.1 miles northeast of the Project site.

The Project site consists of rangeland designated as Agriculture Upland in the Colusa County General Plan and zoned Foothill Agriculture (FA) by Colusa County. The gen-tie line from the Project site intersects land designated as Agriculture Upland and Agriculture General and zoned as FA and Exclusive Agriculture (EA). The Project site has also been deemed as Farmland of Local Importance by the California Department of Conservation. However, the Project site is not considered to be Prime or Unique Farmland.

The surrounding land use is rural. Properties are currently being used for cattle grazing, agriculture, and open space. The closest residence is approximately 100 feet to the south of the Project site.


Lurline Ave
Danley Rd
Freshwater Rd
Schaad Rd
5
Williams
Abel Rd
Transmission Line Corridor
Walnut Dr
Zumwalt Rd
Husted Rd
20
Myers Rd
Solar Array
Cortina School Rd
Hahn Rd
Bear Valley Rd
Hillgate Rd
16
Whiskey Creek Rd
OR
ID
Project Location
NV
UT
CA
AZ
Legend
Project Area: Solar Array
(also Area of Potential Significant Impact)
Project Area: Transmission Line Corridor
(also Area of Potential Significant Impact)
N
0 1 2 Miles
Figure 1
Project Location
Janus Solar Project
Colusa County, CA
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2.0 AIR QUALITY

2.1 ENVIRONMENTAL SETTING

2.1.1 Climate and Topography

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. Colusa County is located in the Sacramento Valley Air Basin (SVAB) which includes Sutter, Yuba, Colusa, Butte, Glenn, Tehama, Shasta, Placer, Solano, Yolo, and Sacramento counties. The northern portion of the SVAB (NSVAB) includes Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba counties and is bounded on the north and west by the Coastal Mountain Range and on the east by the southern end of the Cascade Mountain Range and the northern end of the Sierra Nevada. These mountain ranges reach heights of 6,000 feet above mean sea level, with individual peaks rising much higher. The mountains form a substantial physical barrier to locally created pollution as well as to pollution transported northward on prevailing winds from the Sacramento metropolitan area (SVAQEEP 2015). Colusa County's topography and meteorology have the potential to cause potentially adverse air quality conditions.

Colusa's climate is classified as warm and temperate. The rain in Colusa falls mostly in the winter, with relatively little rain in the summer. The Köppen-Geiger climate classification is Csa (C= warm, temperate; s=steppe; a=hot summer). Prevailing winds in the area are generally from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Colusa County has on average 17.84 inches of precipitation annually with the most rainfall occurring during the winter months (NOAA NCDC normals 1981-2010).

2.1.2 Pollutants and Effects

The Clean Air Act (CAA) requires EPA to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants. EPA calls these "criteria" air pollutants because it regulates them by developing health-based (primary) or environmentally based (secondary) standards. These pollutants are summarized below.

Ozone (O_3) is a secondary pollutant that is formed from the reaction of nitrogen oxides and volatile organic compounds in the presence of sunlight. Ozone exists naturally in the stratosphere, shielding Earth from harmful ultraviolet radiation. However, at ground-level, ozone causes adverse health effects and is a major component of smog. High concentrations have been tied to respiratory ailments and cardiovascular disease, as well as damage to natural ecosystems, agricultural crops, and materials such as rubber, paint, and plastics. In the Northern Sacramento Planning Area (NSVPA), ozone can be caused by stationary source emissions, such as from internal combustion engines or boilers, mobile sources such as cars, trucks, and trains, or area sources such as consumer products or wildfires. The NSVPA districts also experience transport ozone from the Broader Sacramento Area (BSA).

Reactive organic gases (ROG) are composed of hydrocarbon compounds that contribute to the formation of smog through atmospheric chemical reactions. ROG are emitted from fuel combustion and industrial and agricultural processes. Compounds that make up ROG are often evaluated as part of a toxic risk assessment under AB 2588 provisions.

Nitrogen Oxides (NO_x) are a family of gaseous nitrogen compounds that result primarily from the combustion of fossil fuels. It is a precursor to the formation of ozone and particulate matter, and nitrogen dioxide (NO_2) is regulated directly under the NAAQS and California Ambient Air Quality Standards (CAAQS).

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

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

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

Carbon Monoxide (CO) is an odorless, colorless gas formed by the incomplete combustion of fuels emitted directly into the air. The main source of CO in the Valley is on-road motor vehicles. Therefore, 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.

Sulfur Dioxide (SO_2) is a colorless gas formed by the combustion of fossil fuels that contain sulfur. The Valley 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.

2.1.3 Sensitive Receptors

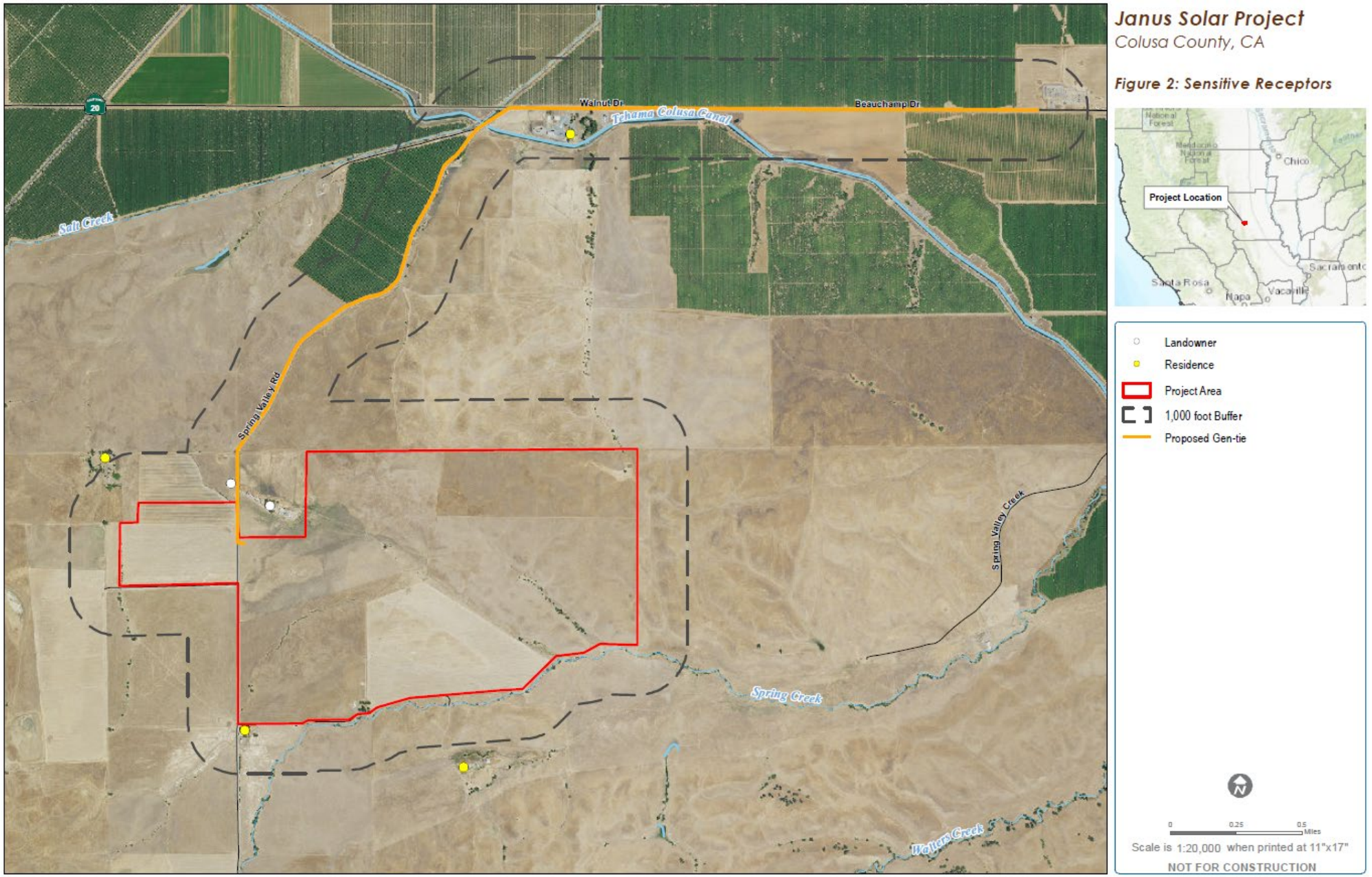
Sensitive receptors are segments of the population most susceptible to poor air quality (i.e. children, the elderly, and those with pre-existing serious health problems related to respiratory distress). Land uses often identified as sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities.

Land use in the area is mostly agricultural interspersed with sparse rural residential. The nearest residence is 100 feet south of the Project. A second residence is located about 430 feet from the generation tie line on Walnut Road.

The residence near the north side of the Project area is owned by the landowner leasing the parcels for the solar farm. Some agricultural buildings are also located to the west of the Project. The remaining residences and other sensitive receptors are located more than 1,000 feet from the site. The city of Williams is located approximately 6 miles from the site and a daycare is located 5.8 miles from the site. To the east, the nearest residence is just under two miles from the nearest site boundary.

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. 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. The exposure is below significance thresholds and will be temporary.

An aerial map showing the 1,000-foot buffer and nearby sensitive receptors is provided in Figure 2.


Janus Solar Project
Colusa County, CA
Figure 2: Sensitive Receptors
Project Location
Chico
Sacramento
Santa Rosa
Napa
Vacaville
Landowner
Residence
Project Area
1,000 foot Buffer
Proposed Gen-tie
0 0.25 0.5 Miles
Scale is 1:20,000 when printed at 11"x17"
NOT FOR CONSTRUCTION
Walnut Dr
Beauchamp Dr
Tehama Colusa Canal
Salt Creek
Spring Valley Rd
Spring Valley Creek
Spring Creek
Walters Creek

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 people most susceptible to respiratory distress (i.e., sensitive receptors), such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research suggests however, that long-term exposure to air pollution at levels that meet air quality standards may nevertheless have adverse health effects. For example, ozone exposure even at levels close to the ambient air quality standard may lead to adverse respiratory health.

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

2.2.1 Federal Regulations

2.2.1.1 Criteria Air Pollutants

The federal 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 required that the EPA review all National Ambient Air Quality Standards with respect to health impacts and propose modifications or new rules as appropriate. In addition, the amendments of the 1990 federal CAA are associated with the attainment and maintenance of air quality standards, permits and enforcement, toxic air pollutants, acid deposition, stratospheric ozone protection and motor vehicles and fuels.

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 federal CAA Amendments, which expanded the control program for HAPs, identified 189 substances and chemical families as HAPs. Over the years, the list has been modified. Currently, there are 187 federally regulated HAPs.

2.2.2 State Regulations

2.2.2.1 Criteria Air Pollutants

The CCAA, passed by the California Legislature and signed into law by the Governor in 1988, assigns state-specific ambient air quality standards. 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.

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 that the federal standards. No specific control programs are in place to achieve this much 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 (TAC) list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, facilities are required to communicate the results to the public in the form of notices and public meetings.

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

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

California Health and Safety Code Section 41700

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

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/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable	24 Hour	50 µg/m^3	Gravimetric or Beta	150 µg/m^3	Same as	Inertial Separation

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	Attenuation	—	Primary Standard	and Gravimetric Analysis
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12 µg/m^3	15 µg/m^3	
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 (NO_2)[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]	—	
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 (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, updated 05/04/16), and U.S. Environmental Protection Agency (http://www.epa.gov/air/criteria.html, accessed April 2021)

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*

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
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 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.						
12 In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.						

2.2.3 Local Regulations

2.2.3.1 Colusa County Air Pollution Control District

The CCAPCD manages air quality within the Colusa County portion of the SVAB for attainment and permitting purposes. In Colusa County, the CCAPCD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs. The CCAPCD develops regulations to improve air quality and protect the health and welfare of Colusa County residents and their environment. The district also monitors air quality, prepares clean air plans, responds to citizen complaints concerning air quality and regulates agricultural burning.

CCAPCD regulations include permit requirements, emissions limits for specific source categories, requirements for open burning, and air toxics control measures (ATCM) for several source categories including stationary compression ignition engines. An emergency generator is the only stationary source proposed for the Project and it will be registered as portable equipment. CCAPCD regulates nuisance conditions in Rule 200, which states that “no person shall discharge from any non-vehicular source 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. No other CCAPCD rules are applicable to the Project.

2.2.3.2 Colusa County Plan

Colusa County adopted a comprehensive update to their General Plan on July 31, 2012 (Colusa County, 2012). The General Plan details the County’s guiding principles for a variety of planning topics and is the roadmap for future development in the county. The Conservation Element addresses the conservation, development and utilization of natural resources which includes forests, soils, rivers and other waters, wildlife, and minerals. Energy conservation, air quality, and the preservation of cultural and historical resources are also addressed in the conservation element

The Colusa County General Plan contains several goals, policies, and actions relative to air quality. Following is a summary of goals policies and actions potentially applicable to the Project.

Goal CON-2: Conserve, protect, and enhance energy, air, and mineral resources.

Objective CON-2A: Use Energy Efficiently and Encourage the Use of Renewable and Sustainable Sources of Energy

- Policy CON 2-2: Encourage the development of large---scale commercial energy projects that utilize renewable sources such as solar, wind, biomass, and agricultural byproducts.
- Policy CON 2-3: Allow commercial alternative energy facilities, including solar, wind and biomass in the Agriculture General, Agriculture Upland, Industrial, Forest, and Resource Conservation land use designations with a Conditional Use Permit.

Objective CON-2B: Minimize Air Pollutant Emissions and Improve Air Quality to Protect Public Health

- Policy CON 2-15: Improve air quality through continuing to require a compact development pattern that focuses growth in and around existing communities, locating new housing near places of employment, encouraging alternative modes of transportation, and requiring projects to mitigate significant air quality impacts to the extent feasible.
- Action CON 2-E: Refer development, infrastructure, and planning projects to the Colusa County Air Pollution Control District (APCD) for review. Require project applicants to prepare air quality analyses to address APCD and General Plan requirements, which include analysis and identification of:
    - Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.
    - Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.
    - Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.
- Action CON 2-F: Coordinate with the APCD to develop:
    - Thresholds for criteria pollutants associated with construction activities, and
    - A list of standard best management practices (BMPs) to be implemented during construction activities.
- Action CON 2-G: Continue to implement measures and strategies contained in the Northern Sacramento Valley Air Quality Attainment Plan.

The renewable energy project meets Goal CON-2, Policies CON 2-2 and 2-3, Actions CON 2-E, CON-2F, and CON-2G. The Project's emissions analysis for construction and operation will comply with the Colusa County General Plan as demonstrated in Section 2.5.

2.3 REGIONAL AND LOCAL AIR QUALITY CONDITIONS

2.3.1 Colusa County Attainment Status

In an effort to protect human health and welfare, the CARB and EPA have established Ambient Air Quality Standards, described in Table 2. Areas are considered in "attainment" if standards are met and "nonattainment" if they are not met. For ozone, nonattainment status is further classified as marginal, moderate, serious, severe, or extreme.

Table 2. Colusa County Attainment Status

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

Source: CARB 2021a

2.3.2 Local Ambient Air Quality

Table 3 summarizes the most recent air quality data from 2017 through 2019 with the number of days exceeding the ambient air quality standards.

Table 3. Local Ambient Air Quality Monitoring Data for the Years 2017-2019

Averaging Period	2017	2018	2019
Ozone (O_3) – ***Sunrise Blvd, Colusa, California Monitoring Station (AQS Site ID: 06-011-1002)***			
1-hour Maximum Concentration (ppm)	0.075	0.073	0.062
Number of days exceeding CAAQS = **0.09 ppm**	0	4	0
8-hour Maximum Concentration	0.068	0.062	0.055
Number of days exceeding CAAQS = **0.070 ppm**	0	0	0
Number of days exceeding NAAQS = **0.070 ppm**	0	0	0
Nitrogen Dioxide (NO_2) – ***Yuba City, California Monitoring Station (AQS Site ID: 06-101-0003)***			
1-hour Maximum Concentration (ppb)	49	51	45
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**)	7	7	6
Carbon Monoxide (CO) – ***Chico, California Monitoring Station (AQS Site ID: 06-007-0008)***			
1-hour Maximum Concentration (ppm)	1.9	20.7	1.6
Number of days exceeding CAAQS = **20 ppm**	--	--	--
Number of days exceeding NAAQS = **35 ppm**	0	0	0
8-hour Maximum Concentration	1.4	12.8	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}) – ***Sunrise Blvd, Colusa, California Monitoring Station (AQS Site ID: 06-011-1002)***			
24-hour Maximum Concentration (µg/m^3)	148	275	120
Number of days exceeding CAAQS = **50 µg/m^3**	33	66	45

Averaging Period	2017	2018	2019
Number of days exceeding NAAQS = **150 µg/m^3**	0	2	0
Annual Average Concentration (state method) (µg/m^3) (**20 µg/m^3**)	26	32	28
Fine Particulate Matter ($PM_{2.5}$) – *Sunrise Blvd, Colusa, California Monitoring Station (AQS Site ID: 06-011-1002)*			
24-hour Maximum Concentration (µg/m^3)	45	113	27
Number of days exceeding NAAQS = **35 µg/m^3**	8	-	0
Annual Average Concentration (µg/m^3) (**12 µg/m^3**)	8	-	7
Sulfur Dioxide (SO_2) – *Sacramento Del Paso Manor, California Monitoring Station (AQS Site ID: 06-067-0006)*			
1-hour Maximum Concentration (ppm)	0.0073	0.0036	0.004
Number of days exceeding NAAQS = **0.075 ppm**	0	0	0
24-hour Maximum Concentration (ppm)	0.0059	0.0011	0.0011
Number of days exceeding NAAQS = **0.14 ppm**	0	0	0
Annual Average Concentration (ppm) (**0.03 ppm**)	0.00185*	0.00037	0.00038

*Does not satisfy minimum completeness
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
Sources: CARB 2021b; EPA 2021

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 California Environmental Quality Act (CEQA) Guidelines (CEQA 2020), 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; and
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

2.4.1.2 Colusa County Air Pollution Control District

CCAPCD has not developed air quality thresholds of significance. Action CON-2F states the County should coordinate with CCAPCD to develop thresholds associated with construction activities and to develop best BMPs to be implemented during construction. CCAPCD has not yet developed these but has recommended using significance thresholds adopted by the BCAQMD due to their proximity in the SVAB. The BCAQMD Guidelines for Addressing Air Quality and Greenhouse Gas Impacts for Projects Subject to CEQA (BCAQMD Guidelines) were issued in 2014 (BCAQMD 2014). The BCAQMD Guidelines have air quality thresholds of significance for criteria pollutants and TACs (see Table 4).

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

Phase	NO_X	ROG	PM_{10}
Construction	137 lb/day	137 lb/day	80 lb/day
Operational	25 lb/day	25 lb/day	80 lb/day
	4.5 tpy	4.5 tpy	None

The BCAQMD Guidance outlines screening criteria for different types and sizes of projects. For projects that do not meet the screening-criteria and require further evaluation, BCAQMD requires that criteria air pollutants and GHG emissions that may occur during the construction and operational phases be quantified through the latest version of CalEEMod or another acceptable modeling approach. The proposed solar project is not one of the project "types" listed in the screening guidance. Therefore, to evaluate impacts of the project under CEQA, CalEEMod was used to quantify emissions for comparison to air quality thresholds of significance.

For non-stationary source greenhouse gas emissions, the BCAQMD guidance recommends compliance with Qualified Greenhouse Gas Reduction Strategy, Lead Agency's threshold, or consistency with goals of AB 32.

Recommended significance thresholds for TACs include mitigating below the following levels within a zone of influence of 1,000-foot radius from the source:

- Increased cancer risk of > 10 in one million;
- Chronic or acute Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute)
- Ambient Diesel $PM_{2.5}$ increase > 0.3 $\mu g/m^3$ annual average

There is a potential for odor from construction equipment during construction. Any odorous impacts from construction will be temporary in nature and will be minimized by the use of Tier 4 equipment.

2.4.2 Approach and Methodology

Air pollutant emissions associated with the Project would occur over the short term (i.e., 11 months) from construction related activities including equipment exhaust, vehicle travel on paved and unpaved roads, and fugitive dust from soil disturbance activities. Construction activities would produce combustion emissions from construction equipment engines and motor vehicles transporting the construction crew, equipment, and materials. Exhaust emissions from construction activities would vary daily as activity levels change. Emissions quantification related to construction activities is necessary for comparison to the BCAQMD significance thresholds. In addition, the emissions documentation must include the quantification methodology used, including emission factors, emission factors sources, assumptions, and sample calculations where necessary. Because the emission calculation tool CalEEMod was used, the emissions calculation assumption section presents the general assumptions for the specific inputs and settings used for the air quality analysis.

Once constructed, the Project would operate seven days per week and 365 days per year. Only occasional, on-site maintenance is expected to be required following commissioning. Operations and maintenance activities would require up to three workers performing visual inspections, monitoring plant performance, executing minor repairs, and responding to needs for plant adjustment. On intermittent occasions, the additional workers may be required for repairs or replacement of equipment, panel cleaning, and other specialized maintenance. However, due to the self-operating nature of the facilities, such actions would likely occur infrequently. The expected maintenance would generate little traffic during operations. O&M vehicles would include light duty trucks (e.g., pickup, flatbed) and other light equipment

for maintenance and module washing. Heavy equipment would not be utilized during normal operation other than water trucks delivering water to the facility.

Minimal water would be required for panel washing activities and general maintenance. The need for panel washing would be infrequent (e.g., months to years between washings) and determined based on operating considerations, including actual soiling of the PV panels and any expected benefit from cleaning.

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 five main phases shown in Table 5.

Table 5. Construction Schedule

Phase	Duration (days)
Preparation	9
Excavation	23
Utilities/Sub-grade	23
Construction	233
Paving	17

The main construction processes are anticipated to occur during a period of approximately 10 months and would begin in late 2022. Project construction would consist of five major stages (see Table 6). The first stage would include mobilization, site preparation, fencing, and laydown. The second stage would involve excavation, trenching and trench backfill. Because the facility has been designed to use flat areas of the site, grading would be minimal. The third stage includes installation of cables and utilities. The fourth stage includes construction of the inverters, PV modules, and BESS units, and also includes commissioning and testing. The final stage includes road paving.

Water for dust control and other construction needs would likely be trucked to the site, which this assessment conservatively assumes.

Table 6. Construction Scenario Assumptions

Construction Phase	Equipment			Average / Peak Daily Worker Vehicle Round Trips*	Average / Peak Daily Vendor / Haul Truck Round Trips*
	Equipment Type	Quantity	Usage Hours		
Preparation	Tractors/Loaders/Backhoes	4	8	50 / 50	10 / 20
	Plate Compactors	2	8		
	Crawler Tractors	2	8		
	Dumpers/Tenders	5	8		
	Forklifts	2	8		
	Generator Sets	4	8		
	Graders	2	8		
	Scrapers	2	8		
	Skid Steer Loaders	4	8		
	Water Trucks	8	8		

Construction Phase	Equipment			Average / Peak Daily Worker Vehicle Round Trips*	Average / Peak Daily Vendor / Haul Truck Round Trips*
	Equipment Type	Quantity	Usage Hours		
Excavation	Tractors/Loaders/Backhoes	4	8	50 / 0	10 / 20
	Plate Compactors	2	8		
	Crawler Tractors	2	8		
	Dumpers/Tenders	5	8		
	Forklifts	2	8		
	Generator Sets	4	8		
	Graders	2	8		
	Scrapers	2	8		
	Skid Steer Loaders	2	8		
	Water Trucks	8	8		
Utilities/Sub-grade	Tractors/Loaders/Backhoes	4	8	100 / 100	10 / 20
	Plate Compactors	2	8		
	Crawler Tractors	2	8		
	Dumpers/Tenders	5	8		
	Forklifts	2	8		
	Generator Sets	4	8		
	Graders	2	8		
	Scrapers	2	8		
	Skid Steer Loaders	2	8		
	Water Trucks	8	8		
Construction	Tractors/Loaders/Backhoes	7	8	150 / 200	10 / 30
	Bore/Drill Rigs	10	8		
	Cement and Mortar Mixers	10	8		
	Forklifts	5	8		
	Concrete/Industrial Saws	3	8		
	Plate Compactors	1	8		
	Cranes	1	8		
	Dumpers/Tenders	5	8		
	Excavators	2	8		
	Generator Sets	4	8		
	Pavers	1	8		
	Paving Equipment	1	8		
	Skid Steer Loaders	2	8		
	Trenchers	10	8		
	Rollers	1	8		
	Water Trucks	2	8		
Paving	Rollers	1	8	20 / 20	2 / 5

2.4.2.2 Operation

Emissions from facility operations results from 3 workers per day commuting to and from the site, visual inspections, monitoring plant performance, executing minor repairs, and responding to needs for plant adjustment.

2.4.2.3 Emission Calculation Assumptions

On-Road Equipment Assumptions

1. Trip lengths reflect that trips would be between the Janus Solar facilities and major commercial centers and ports.
2. Exhaust emissions for on-road equipment were calculated using CalEEMod for years 2022 and 2023.
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 and the number of trips is provided in Table 6.

Off-Road Equipment Assumptions

1. Exhaust emissions were calculated using the CalEEMod for years 2022 and 2023.
2. Fugitive dust emissions were estimated for grading activities and truck loading using CalEEMod.

A list of the types and quantity of construction equipment is provided in Table 6.

2.4.2.4 Construction Information and Assumptions

Construction-related emissions are based on the following:

1. The site total acreage inside the proposed fence-line is approximately 1,024 acres. Approximately 13 acres will require excavation and grading.
2. Mobilization of the construction equipment may occur in the open spaces of the shared facilities area. Equipment and vehicle travels may also occur within the 1,024-acre Project site and the shared facilities area during the construction period.
3. Construction activity is expected to last for approximately of 10 months.

2.4.2.5 Combustion

Combustion emissions during construction will result from the following:

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 and from the Project site.

2.4.2.6 Fugitive Dust

Fugitive dust emissions during construction will result from:

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

2.5 SIGNIFICANCE CRITERIA AND METHODOLOGY

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

Less Than Significant Impact. The Project would not conflict with existing land uses or result in population growth. CCAPCD Rule 200 (nuisance conditions) is applicable to the Project. 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.

During construction, unmitigated NO_x emissions would exceed the BCAQMD daily and annual significance thresholds. However, mitigated NO_X emissions would fall below the BCAQMD significance thresholds. Both unmitigated and mitigated ROG emissions are below the annual threshold of significance. Both unmitigated and mitigated PM_{10} emissions are below the daily threshold of significance.

Unmitigated and mitigated daily operational emissions are below 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 although, the increase in emissions would not exceed any significance threshold. Construction and operational emissions are summarized in Tables 7, 8, and 9.

As previously discussed, the renewable energy project meets Goal CON-2, Policies CON 2-2 and 2-3, Actions CON 2-E, CON-2F, and CON-2G of the Colusa County General Plan.

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

2.5.2.1 Construction Emissions

Less Than Significant Impact. Construction emissions are summarized in Tables 7 and 8. The Project area is non-attainment for the California AAQS for PM_{10}. The CCAPCD has requested that the Project use BCAQMD annual and daily 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. Based on these recommended thresholds, the proposed Project would result in a significant contribution to localized ambient air quality if daily emissions exceeded 80 pounds per day (lbs/day) of PM_{10} during either construction or operation. Daily PM_{10} emissions will be well below this threshold for both construction and operation. BCAQMD also specifies daily and annual significance thresholds for NO_X and ROG emissions from construction. Emissions for both are below significance thresholds. Detailed emissions calculations are provided in Appendix A.

Table 7. Estimated Maximum Annual Construction Criteria Air Pollutant Emissions

Max. Rolling 12-month	Emissions (tons per year)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Unmitigated	2.31	18.56	21.49	0.06	3.01	0.57
Mitigated	0.94	4.45	25.68	0.06	2.23	0.57
BCAQMD Threshold	*4.5*	*4.5*	--	--	--	--
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Table 8. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Max. Rolling 12-month	Emissions (lbs/day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Unmitigated	18.64	170.05	178.55	0.59	27.37	11.95
Mitigated	8.29	62.59	207.69	0.59	21.41	6.40
BCAQMD Threshold	*137*	*137*	--	--	*80*	--
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

2.5.2.2 Operational Emissions

Less Than Significant Impact. Project operational emissions were estimated using CalEEMod to include potential area, energy, mobile, off-road, and stationary source emissions. This included solvent emissions from paints and primers, water trucks, potential emergency generator emissions, and vehicle emissions from maintenance vehicles. Table 9 presents the maximum daily operational emissions in pounds per day with a comparison to BCAQMD thresholds. Operational emissions would be well below the BCAQMD thresholds of significance for all pollutants. Detailed emissions calculations are provided in Appendix A.

Table 9. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Emission Source	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	lbs/day					
Area, Energy, Mobile, Off-road, Stationary	14.26	13.09	20.07	0.04	2.36	1.00
BCAQMD Threshold	*25*	*25*	--	--	*80*	--
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Emissions data for Colusa County provided by CARB (CEPAM 2019SIP v1.02) were used for comparison with potential Project emissions. A summary of annual and daily emissions in Colusa County are provided Tables 10 and 11. A comparison of the Project annual PM_{10} emissions to the lowest annual PM_{10} emissions over the past 10 years shows potential construction PM_{10} to be 0.048 percent of total county annual emissions and operational emissions to be 0.00086% of the total county annual emissions.

A comparison of county-wide daily emissions (tons per day) with Project construction and operational emissions using the lowest daily Colusa County PM_{10} emissions over the past 10 years shows construction emissions would be 0.086 percent of the county daily emissions and operational emissions would be 0.0079 percent of the county total daily emissions.

The Project area is non-attainment for the California AAQS for PM_{10}. CCAPCD requires the use of the BCAQMD's daily and annual significance thresholds for 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 PM_{10}, the cumulative emissions associated with the Project would not be considerable as the emissions would fall below BCAQMD thresholds. Under this condition, the Project would not make a cumulatively considerable contribution during construction or operations. Therefore, impacts would be less than significant. Additionally, the Project would not conflict with the CCAPCD PM_{10} attainment plans, which address cumulative emissions in Colusa County and account for emissions associated with construction activity.

The comparison of the Project emissions to the area source county emissions shows that the projected PM_{10} emissions from construction and operation of the Project will be a small fraction of the county emissions. Therefore, the Project would not interfere with attainment progress for the CAAQS for PM_{10} in the County.

Table 10. Colusa County Historical Region-Wide Annual Pollutant Emissions

Year / Source Type*		Emissions (tons/year)					
		NO_x	CO	ROG	SO_x	PM_{10}	$PM_{2.5}$
2010	Point	555.6	182.7	74.6	12.8	406.8	116.3
	All other	4,247.1	8,896.3	21,136.3	55.1	4,622.6	1,157.4
2011	Point	457.7	267.8	81.4	121.0	363.3	123.5
	All other	4,029.3	8,436.4	20,495.4	51.6	4,556.3	1,126.7
2012	Point	424.1	245.0	76.0	101.2	389.9	133.5
	All other	5,194.8	129,909.8	28,968.2	879.1	16,443.5	11,164.4
2013	Point	448.2	192.0	89.9	116.2	378.7	127.8
	All other	3,668.5	6,625.1	20,353.6	33.6	4,422.5	983.2
2014	Point	397.5	223.4	80.8	101.6	312.6	96.6
	All other	3,539.0	6,438.5	20,288.7	33.9	4,424.5	979.0
2015	Point	345.2	189.6	91.6	23.3	280.0	110.2
	All other	3,611.1	16,218.4	20,944.5	142.6	5,508.7	1,883.1
2016	Point	348.5	341.1	115.9	28.6	366.1	167.4
	All other	3,167.7	5,741.5	20,143.4	32.3	4,389.3	926.6
2017	Point	315.6	188.8	75.6	24.0	298.5	108.4
	All other	3,018.7	5,170.0	20,038.2	28.2	4,347.4	886.7
2018	Point	308.4	184.8	76.3	23.1	301.3	107.6
	All other	3,107.0	19,465.1	21,019.7	132.8	5,773.4	2,092.5
2019	Point	308.4	185.5	77.0	23.2	304.6	107.8
	All other	3,017.8	19,327.3	20,985.1	132.7	5,771.1	2,090.1
2020	Point	313.8	192.5	68.9	23.0	273.8	102.1
	All other	2,896.8	19,214.5	20,905.0	132.7	5,747.9	2,077.9
Project Construction		4.45	25.68	0.94	0.06	2.23	0.65
Project Operation		0.65	0.68	2.05	0.003	0.04	0.02

* All other sources include stationary aggregated, areawide, on-road mobile, other mobile, and biogenic.

Table 11. Colusa County Historical Region-Wide Daily Pollutant Emissions

Year / Source Type*		Emissions (tons/day)					
		NO_x	CO	ROG	SO_x	PM_{10}	$PM_{2.5}$
2010	Point	1.52	0.50	0.20	0.04	1.11	0.32
	All other	11.64	24.37	57.91	0.15	12.66	3.17
2011	Point	1.25	0.73	0.22	0.33	1.00	0.34
	All other	11.04	23.11	56.15	0.14	12.48	3.09
2012	Point	1.16	0.67	0.21	0.28	1.07	0.37
	All other	14.23	355.92	79.37	2.41	45.05	30.59
2013	Point	1.23	0.53	0.25	0.32	1.04	0.35
	All other	10.05	18.15	55.76	0.09	12.12	2.69
2014	Point	1.09	0.61	0.22	0.28	0.86	0.26
	All other	9.70	17.64	55.59	0.09	12.12	2.68
2015	Point	0.95	0.52	0.25	0.06	0.77	0.30
	All other	9.89	44.43	57.38	0.39	15.09	5.16
2016	Point	0.95	0.93	0.32	0.08	1.00	0.46
	All other	8.68	15.73	55.19	0.09	12.03	2.54
2017	Point	0.86	0.52	0.21	0.07	0.82	0.30
	All other	8.27	14.16	54.90	0.08	11.91	2.43
2018	Point	0.84	0.51	0.21	0.06	0.83	0.29
	All other	8.51	53.33	57.59	0.36	15.82	5.73
2019	Point	0.84	0.51	0.21	0.06	0.83	0.30
	All other	8.27	52.95	57.49	0.36	15.81	5.73
2020	Point	0.86	0.53	0.19	0.06	0.75	0.28
	All other	7.94	52.64	57.27	0.36	15.75	5.69
Project Construction		0.031	0.104	0.004	0.0003	0.011	0.003
Project Operation		0.007	0.010	0.007	0.00002	0.001	0.0005

* All other sources include stationary aggregated, areawide, on-road mobile, other mobile, and biogenic.

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

Less Than Significant Impact. The Project consists of construction of a solar energy facility that may have the potential to affect nearby sensitive receptors. As shown in Figure 2, there are only two sensitive receptors (residences) located within 1,000 feet of the Project boundary. The sensitive receptors are residences to the south of the Project and south of the proposed gen-tie line. There are no schools, daycare centers, hospitals, or other sensitive receptors in the Project vicinity. Diesel particulate matter will be minimized by using Tier 4 engines and good operational practices as noted below. Construction emissions will be temporary in nature. Operational emissions will be minimal and will occur intermittently for Project maintenance.

The nearest population center, the City of Williams, is located approximately 6.5 miles northeast of the site. Sensitive receptors in Williams and their distances to the site include:

- Liz Kidz Daycare – located 5.8 miles northeast of the Project boundary;
- Williams Elementary Scholl located 6.4 miles from the Project boundary; and

- Mid Valley High School located 6.4 miles from the Project boundary.

In addition to the large distance from the Project to sensitive receptors, mitigated pollutant impacts during construction and operation would not result in emissions of criteria pollutants in excess of established BCAQMD thresholds.

The Project proposes to limit diesel particulate matter from construction activities using the following mitigation measures:

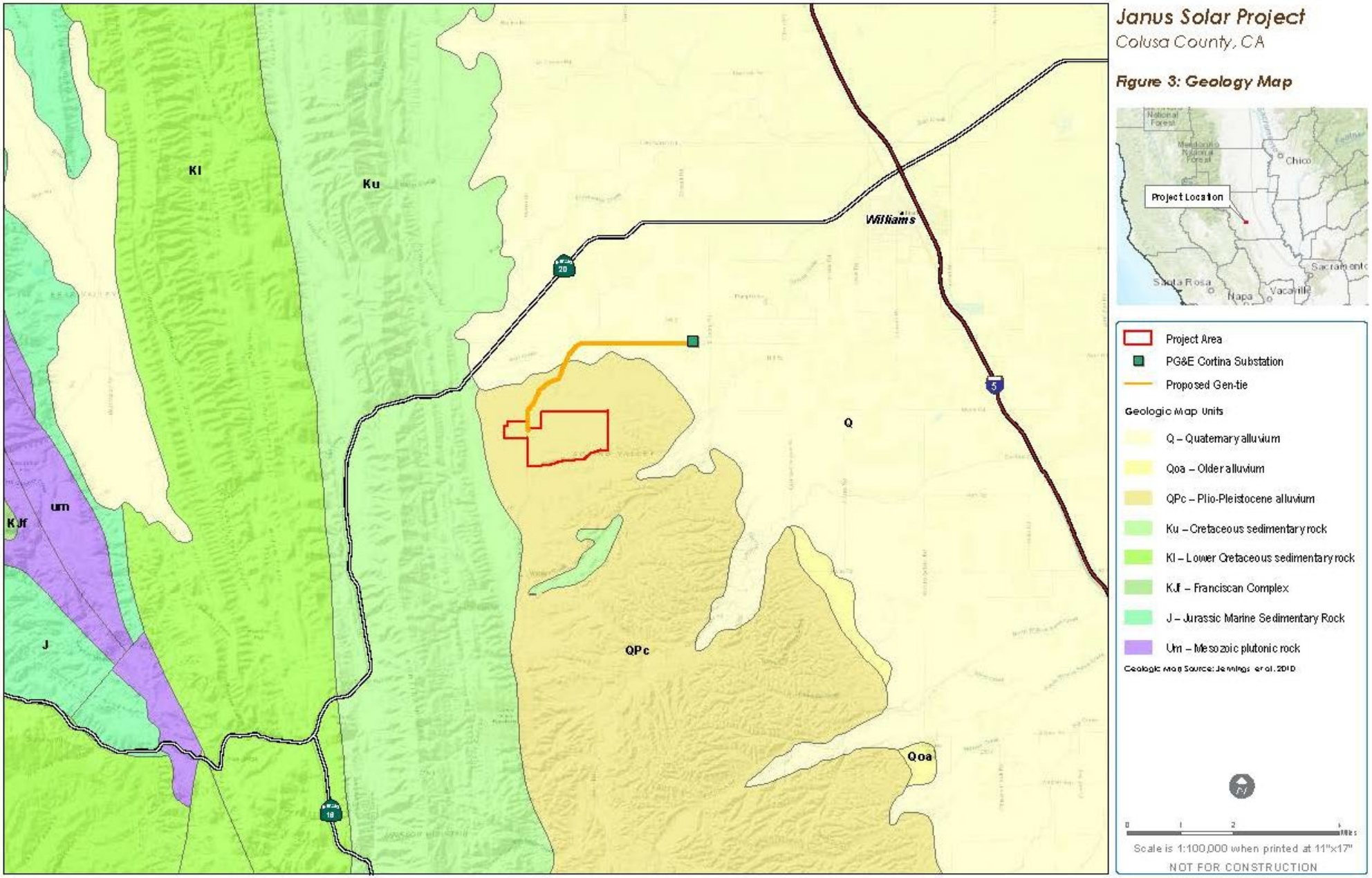
- Install diesel particulate filters or implement other CARB-verified diesel emission control strategies.
- All on- and off-road diesel equipment shall not idle for more than five minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the five-minute idling limit.
- All construction equipment shall be maintained in proper tune according to the manufacturer's specifications. Equipment must be checked and determined to be running in proper condition before the start of work.
- Idling, staging and queuing of diesel equipment within 1,000 feet of sensitive receptors shall be limited.

In addition to the above mitigation measures, the Project will use ultra-low sulfur diesel fuels (<=15 parts per million by weight sulfur).

Based on the temporary nature and the time frame for construction, these measures will reduce construction emissions and impacts to levels that are in compliance with the CCAPCD air quality regulations.

BCAQMD also identifies significance thresholds for TACs that are based on localized impacts. These include a maximum incremental lifetime cancer risk greater than 10 in a million, a chronic and acute hazard index (i.e., ratio of concentrations to Reference Exposure Levels [RELs]) of one or more, and an annual diesel particulate matter concentration of 0.3 $\mu g/m^3$. The primary TAC emitted from construction activities is diesel PM (as $PM_{2.5}$); however, because emissions of TACs from diesel-powered construction equipment are expected to be minimal, intermittent, and of short duration, the Project is not expected to substantially increase ambient concentrations of TACs regionally or locally. As discussed in Section 2.1.3, there are only two residences within 1,000 feet of the Project and no other sensitive receptors in the 1,000-foot radius from the Project boundaries. 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.

Another potential TAC that may impact sensitive receptors is natural occurring asbestos (NOA). NOA has been identified by the CARB as a toxic air contaminant. Serpentine and ultramafic rocks, which may contain NOA, are found in certain mountainous areas of Colusa County. A review of geologic formations within the Project site indicates no ultramafic rocks present (California Department of Conservation 2021). Figure 3 presents a geologic map of the Project area showing the location of ultramafic (serpentine rock).


Janus Solar Project
Colusa County, CA
Figure 3: Geology Map
Project Location
Chico
Williams
Sacramento
Santa Rosa
Napa
Vacaville
Project Area
PG&E Cortina Substation
Proposed Gen-tie
Geologic Map Units
Q – Quaternary alluvium
Qoa – Older alluvium
QPc – Plio-Pleistocene alluvium
Ku – Cretaceous sedimentary rock
Kl – Lower Cretaceous sedimentary rock
KJf – Franciscan Complex
J – Jurassic Marine Sedimentary Rock
Um – Mesozoic plutonic rock
Geologic Map Source: Jennings et al. 2010
Scale is 1:100,000 when printed at 11"x17"
NOT FOR CONSTRUCTION
Kl
Ku
Q
QPc
Qoa
KJf
um
J

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

Less Than Significant Impact. The land use surrounding the Project site is rural. Properties are currently being used for cattle grazing, agriculture, and open space. The closest residence is approximately 100 feet to the south of the Project site, and the next closest residence is approximately 400 feet south of the proposed gen-tie line. During Project-related construction activities, various diesel-powered vehicles and equipment could create minor odors. These odors are not likely to be noticeable beyond the immediate vicinity and would be temporary and short-lived. Therefore, construction odor impacts would be less than significant. The Project will include portable toilets on site during construction, operations, and decommissioning. The portable toilets will be regularly maintained and cleaned by a third-party service. Therefore, odor from the use of portable toilets is not anticipated to impact nearby residences.

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 are also 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.

3.0 GREENHOUSE GAS EMISSIONS

3.1 ENVIRONMENTAL SETTING

3.1.1 The Greenhouse Effect

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

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

3.1.2 Greenhouse Gases and Global Warming Potential

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

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

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

Global Warming Potential

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to that of one kilogram of a reference gas. The reference gas used is CO_2. Therefore, GWP-weighted emissions are measured in metric tons (MT) of CO_2 equivalent (CO_2e). It was assumed that the GWP for CH_4 is 25 (which means that emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), the GWP for N_2O is 298, and the GWP for SF_6 is 22,800 based on the Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC 2007). These GWPs have been adopted by the 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 metric tons or more of CO_2 per year. This publicly available data allows the reporters to track their own emissions, compare them to similar facilities, and help identify cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs along with vehicle and engine manufacturers report at the corporate level. An estimated 85 percent of the total United States GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

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

On December 7, 2009, the EPA adopted its Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the CAA (Endangerment Finding). The Endangerment Finding is based on Section 202(a) of the CAA, which states that the Administrator (of EPA) should regulate and develop standards for "emission[s] of air pollution from any class 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. 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.” Senate Bill (SB) 32 codifies the emissions reduction goal of 40% below 1990 levels by 2030.

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 RPS by establishing a renewable energy target of 20 percent of the total electricity sold to retail customers in California per year by 2013, and 33 percent by 2020 and subsequent years. SB 350 further expanded the RPS by establishing a goal of 50 percent of the total electricity sold to retail customers in California per year by 2030.

SB 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

Colusa County does not have any plans or regulations specific to GHGs. The General Plan does encourage renewable energy development in their conservation element under Objective CON-2A:

Objective CON-2A: Use Energy Efficiently and Encourage the Use of Renewable and Sustainable Sources of Energy

- Policy CON 2-2: Encourage the development of large-scale commercial energy projects that utilize renewable sources such as solar, wind, biomass, and agricultural byproducts.
- Policy CON 2-3: Allow commercial alternative energy facilities, including solar, wind and biomass in the Agriculture General, Agriculture Upland, Industrial, Forest, and Resource Conservation land use designations with a Conditional Use Permit.

The Project will help the County meet their renewable energy goals in the General Plan.

3.3 SIGNIFICANCE CRITERIA AND METHODOLOGY

3.3.1 Thresholds of Significance

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

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.

3.3.2 Approach and Methodology

A GHG analysis is required to be included in CEQA documents for all non-exempt projects. CCAPCD and BCAQMD have not adopted GHG thresholds of significance. The BCAQMD CEQA guidance suggests compliance with Qualified Greenhouse Gas Reduction Strategy, Lead Agency's threshold, or consistency with goals of AB 32 for projects subject to CEQA.

For this Project, the major source of GHG is the combustion of fuel in construction equipment, in vehicles used to haul equipment and 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 phase of the proposed Project. Based on the construction schedule, and the types and quantities of construction equipment and haul trucks, the maximum CO_2e emissions were estimated. 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. The SF_6 global warming equivalence is 22,800 times that of CO_2. The Project will have no more than two high-voltage circuit breakers, each with up to 160 pounds of SF_6 for a total of up to 320 pounds, and a maximum leak rate of 0.5 perce t per year. CO_2e resulting from SF_6 gas leakage can be represented by the following equation:

CO_2e Emissions = SF_6 gas contained in equipment (lbs) x 0.5% leak rate x 0.0004536 MT/lb x 22,800

3.4 IMPACT ANALYSIS

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

3.4.1.1 Construction Emissions

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

Construction emissions would be associated with vehicle engine exhaust from construction equipment and vehicles, equipment and material deliveries, and construction worker commuting trips. Construction-related GHG emissions are considered temporary and short term. Annual Construction Emissions are provided in Table 12.

Table 12. Estimated Annual Construction Greenhouse Gas Emissions

Construction Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2022	2,163.64	0.37	0.07	2,192.64
2023	3,386.44	0.55	0.09	3,428.03
Total Project Construction GHG Emissions	5,550.08	0.92	0.16	5,620.67

3.4.1.2 Operational Emissions

Less Than Significant Impact. Operation of the Project would generate GHG emissions through motor vehicle trips to and from the Project site, energy use, special maintenance activities such as panel washing, waste and wastewater generation, potential use of the emergency generator, and potential leakage from gas-insulated circuit breakers. The CalEEMod was used to calculate the annual GHG emissions based on the operational assumptions described previously. The estimated operational GHG emissions are shown in Table 13. GHG emissions from operational activities will be minimal and will not have significant impact on the environment.

Table 13. Estimated Annual Operational Greenhouse Gas Emissions

Annual Operation	CO_2	CH_4	N_2O	SF_6	CO_2e
	Metric Tons per Year				
Total Project Operational GHG Emissions	629.44	0.18	0.008	0.000726	653.0

3.4.2 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 Project will support State legislation climate goals including emissions reductions required by AB 32 and SB 32 and will help the state reach renewable portfolio standards required by SB 1078, SB XI-2, and SB 350. While GHG would be generated from construction and occasional operation and maintenance activities, the Project would result in a net reduction in GHG from the production of solar energy that would potentially replace energy generated by fossil fuels. The Project would assist in the attainment of the state's goals by using a renewable source of energy that could displace electricity generated by fossil-fuel-fired power plants, and therefore would comply with the goals and objectives of the state. The solar energy project will meet Colusa County's conservation objective CON-2A and will meet Policies CON 2-2 and 2-3.

4.0 REFERENCES

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Appendix A. Detailed CalEEMod Output

Janus Solar Project - Colusa County, Annual

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

Janus Solar Project

Colusa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	4.00	User Defined Unit	4.00	174,240.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage and square footage estimate based on building area (used only in operational emissions calculations).

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.

Trips and VMT - Provided by applicant.

Grading -

Vehicle Trips - 3 permanent on-site staff.

Energy Use - Data for 'Refrigerated Warehouse-Rail' used to estimate energy use by BESS, O&M, Substation, and area lighting.

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

Water And Wastewater - Water use (approx. 30 gal/day sanitary waste to septic tank, 890 gal/day for O&M) provided by applicant.

Solid Waste - 1 cu. yd./wk, and assuming density for municipal solid waste (commercial - all waste, uncompacted) of 138 lbs per cu. yd.

Construction Off-road Equipment Mitigation - Tier 4 engines will be used.

Operational Off-Road Equipment - One off-road truck per day for potential O&M activities.

Stationary Sources - Emergency Generators and Fire Pumps - 49 kW diesel powered emergency generator to be located at project substation.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	87120	544500
tblAreaCoating	Area_Nonresidential_Interior	261360	1633500
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	20
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	20.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	16.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	26.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	19.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	9.00
tblConstructionPhase	NumDays	8.00	23.00
tblConstructionPhase	NumDays	230.00	233.00
tblConstructionPhase	NumDays	18.00	17.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
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tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblEnergyUse	LightingElect	0.00	2.45

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

tblEnergyUse	NT24E	0.00	21.99
tblEnergyUse	T24E	0.00	0.42
tblLandUse	LandUseSquareFeet	0.00	174,240.00
tblLandUse	LotAcreage	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
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tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	365.00
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tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	0.00	3.60
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tblTripsAndVMT	HaulingTripLength	20.00	0.00
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tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00

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

tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	29.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
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
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripNumber	88.00	100.00
tblTripsAndVMT	WorkerTripNumber	83.00	100.00
tblTripsAndVMT	WorkerTripNumber	83.00	200.00
tblTripsAndVMT	WorkerTripNumber	73.00	400.00
tblTripsAndVMT	WorkerTripNumber	3.00	40.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	20.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	1.50
tblWater	IndoorWaterUseRate	0.00	11,000.00
tblWater	OutdoorWaterUseRate	0.00	325,000.00

2.0 Emissions Summary

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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					
2022	0.9269	7.8289	8.1194	0.0242	0.8071	0.3342	1.1412	0.2048	0.3127	0.5175	0.0000	2,163.6374	2,163.6374	0.3728	0.0661	2,192.6408
2023	1.3786	10.7309	13.3744	0.0378	1.3760	0.4945	1.8705	0.3671	0.4629	0.8300	0.0000	3,386.4376	3,386.4376	0.5469	0.0937	3,428.0269
Maximum	**1.3786**	**10.7309**	**13.3744**	**0.0378**	**1.3760**	**0.4945**	**1.8705**	**0.3671**	**0.4629**	**0.8300**	**0.0000**	**3,386.4376**	**3,386.4376**	**0.5469**	**0.0937**	**3,428.0269**

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					
2022	0.3626	1.9021	9.8414	0.0242	0.7697	0.0359	0.8056	0.2008	0.0352	0.2360	0.0000	2,163.6359	2,163.6359	0.3728	0.0661	2,192.6392
2023	0.5777	2.5462	15.8344	0.0378	1.3760	0.0508	1.4268	0.3671	0.0499	0.4170	0.0000	3,386.4353	3,386.4353	0.5469	0.0937	3,428.0246
Maximum	**0.5777**	**2.5462**	**15.8344**	**0.0378**	**1.3760**	**0.0508**	**1.4268**	**0.3671**	**0.0499**	**0.4170**	**0.0000**	**3,386.4353**	**3,386.4353**	**0.5469**	**0.0937**	**3,428.0246**

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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	**59.21**	**76.03**	**-19.46**	**0.00**	**1.71**	**89.54**	**25.88**	**0.70**	**89.03**	**51.54**	**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	**9-1-2022**	**11-30-2022**	6.3170	1.6520
2	**12-1-2022**	**2-28-2023**	6.7882	1.7731
3	**3-1-2023**	**5-31-2023**	6.6835	1.7110
4	**6-1-2023**	**8-31-2023**	1.1254	0.3011
		Highest	6.7882	1.7731

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

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	1.9424	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	400.7766	400.7766	0.0648	7.8600e-003	404.7395
Mobile	3.6900e-003	8.3200e-003	0.0441	1.2000e-004	0.0116	1.0000e-004	0.0117	3.1000e-003	1.0000e-004	3.2000e-003	0.0000	10.8219	10.8219	4.4000e-004	5.1000e-004	10.9852
Offroad	0.0907	0.6073	0.5932	2.4100e-003		0.0219	0.0219		0.0201	0.0201	0.0000	211.9761	211.9761	0.0686	0.0000	213.6901
Stationary	0.0108	0.0353	0.0393	5.0000e-005		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	5.0265	5.0265	7.0000e-004	0.0000	5.0441
Waste						0.0000	0.0000		0.0000	0.0000	0.7308	0.0000	0.7308	0.0432	0.0000	1.8105
Water						0.0000	0.0000		0.0000	0.0000	3.4900e-003	0.1108	0.1142	3.8000e-004	1.0000e-005	0.1268
Total	**2.0476**	**0.6510**	**0.6766**	**2.5800e-003**	**0.0116**	**0.0236**	**0.0352**	**3.1000e-003**	**0.0218**	**0.0249**	**0.7343**	**628.7119**	**629.4462**	**0.1781**	**8.3800e-003**	**636.3962**

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	1.9424	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	400.7766	400.7766	0.0648	7.8600e-003	404.7395
Mobile	3.6900e-003	8.3200e-003	0.0441	1.2000e-004	0.0116	1.0000e-004	0.0117	3.1000e-003	1.0000e-004	3.2000e-003	0.0000	10.8219	10.8219	4.4000e-004	5.1000e-004	10.9852
Offroad	0.0907	0.6073	0.5932	2.4100e-003		0.0219	0.0219		0.0201	0.0201	0.0000	211.9761	211.9761	0.0686	0.0000	213.6901
Stationary	0.0108	0.0353	0.0393	5.0000e-005		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	5.0265	5.0265	7.0000e-004	0.0000	5.0441
Waste						0.0000	0.0000		0.0000	0.0000	0.7308	0.0000	0.7308	0.0432	0.0000	1.8105
Water						0.0000	0.0000		0.0000	0.0000	3.4900e-003	0.1108	0.1142	3.8000e-004	1.0000e-005	0.1268
Total	**2.0476**	**0.6510**	**0.6766**	**2.5800e-003**	**0.0116**	**0.0236**	**0.0352**	**3.1000e-003**	**0.0218**	**0.0249**	**0.7343**	**628.7119**	**629.4462**	**0.1781**	**8.3800e-003**	**636.3962**

	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

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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Preparation	Site Preparation	9/1/2022	9/9/2022	7	9	
2	Excavation	Grading	9/10/2022	10/2/2022	7	23	
3	Utilities/Sub-grade	Trenching	10/3/2022	10/25/2022	7	23	
4	Construction	Building Construction	10/26/2022	6/15/2023	7	233	
5	Paving	Paving	6/16/2023	7/2/2023	7	17	

Acres of Grading (Site Preparation Phase): 36

Acres of Grading (Grading Phase): 92

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
Preparation	Crawler Tractors	2	8.00	212	0.43
Preparation	Dumpers/Tenders	5	8.00	16	0.38
Preparation	Forklifts	2	8.00	89	0.20
Preparation	Generator Sets	4	8.00	84	0.74
Preparation	Graders	2	8.00	187	0.41
Preparation	Off-Highway Trucks	8	8.00	402	0.38
Preparation	Plate Compactors	2	8.00	8	0.43
Preparation	Scrapers	2	8.00	367	0.48
Preparation	Skid Steer Loaders	4	8.00	65	0.37
Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Excavation	Crawler Tractors	2	8.00	212	0.43
Excavation	Dumpers/Tenders	5	8.00	16	0.38
Excavation	Forklifts	2	8.00	89	0.20

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

Excavation	Generator Sets	4	8.00	84	0.74
Excavation	Graders	2	8.00	187	0.41
Excavation	Off-Highway Trucks	8	8.00	402	0.38
Excavation	Plate Compactors	2	8.00	8	0.43
Excavation	Scrapers	2	8.00	367	0.48
Excavation	Skid Steer Loaders	2	8.00	65	0.37
Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Utilities/Sub-grade	Crawler Tractors	2	8.00	212	0.43
Utilities/Sub-grade	Dumpers/Tenders	5	8.00	16	0.38
Utilities/Sub-grade	Forklifts	2	8.00	89	0.20
Utilities/Sub-grade	Generator Sets	4	8.00	84	0.74
Utilities/Sub-grade	Graders	2	8.00	187	0.41
Utilities/Sub-grade	Off-Highway Trucks	8	8.00	402	0.38
Utilities/Sub-grade	Plate Compactors	2	8.00	8	0.43
Utilities/Sub-grade	Scrapers	2	8.00	367	0.48
Utilities/Sub-grade	Skid Steer Loaders	2	8.00	65	0.37
Utilities/Sub-grade	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Construction	Bore/Drill Rigs	10	8.00	221	0.50
Construction	Cement and Mortar Mixers	10	8.00	9	0.56
Construction	Concrete/Industrial Saws	3	8.00	81	0.73
Construction	Cranes	1	8.00	231	0.29
Construction	Dumpers/Tenders	5	8.00	16	0.38
Construction	Excavators	2	8.00	158	0.38
Construction	Forklifts	5	8.00	89	0.20
Construction	Generator Sets	4	8.00	84	0.74
Construction	Off-Highway Trucks	2	8.00	402	0.38
Construction	Pavers	1	8.00	130	0.42
Construction	Paving Equipment	1	8.00	132	0.36
Construction	Plate Compactors	1	8.00	8	0.43

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

Construction	Rollers	1	8.00	80	0.38
Construction	Skid Steer Loaders	2	8.00	65	0.37
Construction	Tractors/Loaders/Backhoes	7	8.00	97	0.37
Construction	Trenchers	10	8.00	78	0.50
Paving	Rollers	1	8.00	80	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
Preparation	35	100.00	20.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Excavation	33	100.00	20.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Utilities/Sub-grade	33	200.00	20.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Construction	65	400.00	20.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Paving	1	40.00	4.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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

3.2 Preparation - 2022

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					0.0191	0.0000	0.0191	2.0600e-003	0.0000	2.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0478	0.4482	0.3640	9.9000e-004		0.0179	0.0179		0.0168	0.0168	0.0000	86.3065	86.3065	0.0248	0.0000	86.9259
Total	**0.0478**	**0.4482**	**0.3640**	**9.9000e-004**	**0.0191**	**0.0179**	**0.0370**	**2.0600e-003**	**0.0168**	**0.0188**	**0.0000**	**86.3065**	**86.3065**	**0.0248**	**0.0000**	**86.9259**

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	1.2500e-003	0.0635	7.6100e-003	2.6000e-004	7.6600e-003	7.1000e-004	8.3600e-003	2.1100e-003	6.8000e-004	2.7800e-003	0.0000	25.2315	25.2315	5.0000e-005	3.9700e-003	26.4145
Worker	4.3900e-003	3.9200e-003	0.0449	1.4000e-004	0.0165	8.0000e-005	0.0166	4.3900e-003	8.0000e-005	4.4700e-003	0.0000	13.3360	13.3360	2.3000e-004	3.2000e-004	13.4372
Total	**5.6400e-003**	**0.0674**	**0.0525**	**4.0000e-004**	**0.0242**	**7.9000e-004**	**0.0250**	**6.5000e-003**	**7.6000e-004**	**7.2500e-003**	**0.0000**	**38.5675**	**38.5675**	**2.8000e-004**	**4.2900e-003**	**39.8517**

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

3.2 Preparation - 2022

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					8.5900e-003	0.0000	8.5900e-003	9.3000e-004	0.0000	9.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.0692	0.4874	9.9000e-004		1.5500e-003	1.5500e-003		1.5500e-003	1.5500e-003	0.0000	86.3064	86.3064	0.0248	0.0000	86.9258
Total	**0.0121**	**0.0692**	**0.4874**	**9.9000e-004**	**8.5900e-003**	**1.5500e-003**	**0.0101**	**9.3000e-004**	**1.5500e-003**	**2.4800e-003**	**0.0000**	**86.3064**	**86.3064**	**0.0248**	**0.0000**	**86.9258**

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	1.2500e-003	0.0635	7.6100e-003	2.6000e-004	7.6600e-003	7.1000e-004	8.3600e-003	2.1100e-003	6.8000e-004	2.7800e-003	0.0000	25.2315	25.2315	5.0000e-005	3.9700e-003	26.4145
Worker	4.3900e-003	3.9200e-003	0.0449	1.4000e-004	0.0165	8.0000e-005	0.0166	4.3900e-003	8.0000e-005	4.4700e-003	0.0000	13.3360	13.3360	2.3000e-004	3.2000e-004	13.4372
Total	**5.6400e-003**	**0.0674**	**0.0525**	**4.0000e-004**	**0.0242**	**7.9000e-004**	**0.0250**	**6.5000e-003**	**7.6000e-004**	**7.2500e-003**	**0.0000**	**38.5675**	**38.5675**	**2.8000e-004**	**4.2900e-003**	**39.8517**

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

3.3 Excavation - 2022

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					0.0488	0.0000	0.0488	5.2700e-003	0.0000	5.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1204	1.1240	0.8982	2.4800e-003		0.0451	0.0451		0.0421	0.0421	0.0000	216.3798	216.3798	0.0620	0.0000	217.9289
Total	**0.1204**	**1.1240**	**0.8982**	**2.4800e-003**	**0.0488**	**0.0451**	**0.0938**	**5.2700e-003**	**0.0421**	**0.0474**	**0.0000**	**216.3798**	**216.3798**	**0.0620**	**0.0000**	**217.9289**

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	3.1900e-003	0.1623	0.0195	6.7000e-004	0.0196	1.8100e-003	0.0214	5.3800e-003	1.7300e-003	7.1100e-003	0.0000	64.4804	64.4804	1.4000e-004	0.0101	67.5037
Worker	0.0112	0.0100	0.1148	3.7000e-004	0.0422	2.1000e-004	0.0425	0.0112	1.9000e-004	0.0114	0.0000	34.0809	34.0809	5.9000e-004	8.2000e-004	34.3394
Total	**0.0144**	**0.1723**	**0.1342**	**1.0400e-003**	**0.0618**	**2.0200e-003**	**0.0638**	**0.0166**	**1.9200e-003**	**0.0185**	**0.0000**	**98.5613**	**98.5613**	**7.3000e-004**	**0.0110**	**101.8431**

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

3.3 Excavation - 2022

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					0.0220	0.0000	0.0220	2.3700e-003	0.0000	2.3700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0296	0.1500	1.2094	2.4800e-003		3.8700e-003	3.8700e-003		3.8700e-003	3.8700e-003	0.0000	216.3796	216.3796	0.0620	0.0000	217.9287
Total	**0.0296**	**0.1500**	**1.2094**	**2.4800e-003**	**0.0220**	**3.8700e-003**	**0.0258**	**2.3700e-003**	**3.8700e-003**	**6.2400e-003**	**0.0000**	**216.3796**	**216.3796**	**0.0620**	**0.0000**	**217.9287**

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	3.1900e-003	0.1623	0.0195	6.7000e-004	0.0196	1.8100e-003	0.0214	5.3800e-003	1.7300e-003	7.1100e-003	0.0000	64.4804	64.4804	1.4000e-004	0.0101	67.5037
Worker	0.0112	0.0100	0.1148	3.7000e-004	0.0422	2.1000e-004	0.0425	0.0112	1.9000e-004	0.0114	0.0000	34.0809	34.0809	5.9000e-004	8.2000e-004	34.3394
Total	**0.0144**	**0.1723**	**0.1342**	**1.0400e-003**	**0.0618**	**2.0200e-003**	**0.0638**	**0.0166**	**1.9200e-003**	**0.0185**	**0.0000**	**98.5613**	**98.5613**	**7.3000e-004**	**0.0110**	**101.8431**

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

3.4 Utilities/Sub-grade - 2022

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	0.1204	1.1240	0.8982	2.4800e-003		0.0451	0.0451		0.0421	0.0421	0.0000	216.3798	216.3798	0.0620	0.0000	217.9289
Total	**0.1204**	**1.1240**	**0.8982**	**2.4800e-003**		**0.0451**	**0.0451**		**0.0421**	**0.0421**	**0.0000**	**216.3798**	**216.3798**	**0.0620**	**0.0000**	**217.9289**

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	3.1900e-003	0.1623	0.0195	6.7000e-004	0.0196	1.8100e-003	0.0214	5.3800e-003	1.7300e-003	7.1100e-003	0.0000	64.4804	64.4804	1.4000e-004	0.0101	67.5037
Worker	0.0224	0.0201	0.2295	7.4000e-004	0.0845	4.2000e-004	0.0849	0.0225	3.8000e-004	0.0228	0.0000	68.1618	68.1618	1.1800e-003	1.6400e-003	68.6788
Total	**0.0256**	**0.1823**	**0.2490**	**1.4100e-003**	**0.1040**	**2.2300e-003**	**0.1063**	**0.0278**	**2.1100e-003**	**0.0300**	**0.0000**	**132.6422**	**132.6422**	**1.3200e-003**	**0.0118**	**136.1825**

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

3.4 Utilities/Sub-grade - 2022

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	0.0296	0.1500	1.2094	2.4800e-003		3.8700e-003	3.8700e-003		3.8700e-003	3.8700e-003	0.0000	216.3796	216.3796	0.0620	0.0000	217.9287
Total	**0.0296**	**0.1500**	**1.2094**	**2.4800e-003**		**3.8700e-003**	**3.8700e-003**		**3.8700e-003**	**3.8700e-003**	**0.0000**	**216.3796**	**216.3796**	**0.0620**	**0.0000**	**217.9287**

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	3.1900e-003	0.1623	0.0195	6.7000e-004	0.0196	1.8100e-003	0.0214	5.3800e-003	1.7300e-003	7.1100e-003	0.0000	64.4804	64.4804	1.4000e-004	0.0101	67.5037
Worker	0.0224	0.0201	0.2295	7.4000e-004	0.0845	4.2000e-004	0.0849	0.0225	3.8000e-004	0.0228	0.0000	68.1618	68.1618	1.1800e-003	1.6400e-003	68.6788
Total	**0.0256**	**0.1823**	**0.2490**	**1.4100e-003**	**0.1040**	**2.2300e-003**	**0.1063**	**0.0278**	**2.1100e-003**	**0.0300**	**0.0000**	**132.6422**	**132.6422**	**1.3200e-003**	**0.0118**	**136.1825**

Janus Solar Project - Colusa County, Annual

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

3.5 Construction - 2022

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	0.4527	4.1213	4.1294	9.1100e-003		0.2134	0.2134		0.1998	0.1998	0.0000	789.8494	789.8494	0.2144	0.0000	795.2101
Total	**0.4527**	**4.1213**	**4.1294**	**9.1100e-003**		**0.2134**	**0.2134**		**0.1998**	**0.1998**	**0.0000**	**789.8494**	**789.8494**	**0.2144**	**0.0000**	**795.2101**

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	9.2900e-003	0.4728	0.0567	1.9600e-003	0.0570	5.2600e-003	0.0623	0.0157	5.0300e-003	0.0207	0.0000	187.8342	187.8342	3.9000e-004	0.0295	196.6413
Worker	0.1307	0.1168	1.3371	4.3000e-003	0.4922	2.4300e-003	0.4946	0.1308	2.2400e-003	0.1331	0.0000	397.1166	397.1166	6.9000e-003	9.5300e-003	400.1285
Total	**0.1400**	**0.5895**	**1.3938**	**6.2600e-003**	**0.5492**	**7.6900e-003**	**0.5569**	**0.1465**	**7.2700e-003**	**0.1538**	**0.0000**	**584.9508**	**584.9508**	**7.2900e-003**	**0.0391**	**596.7697**

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

3.5 Construction - 2022

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	0.1057	0.5213	5.1056	9.1100e-003		0.0139	0.0139		0.0139	0.0139	0.0000	789.8485	789.8485	0.2144	0.0000	795.2091
Total	**0.1057**	**0.5213**	**5.1056**	**9.1100e-003**		**0.0139**	**0.0139**		**0.0139**	**0.0139**	**0.0000**	**789.8485**	**789.8485**	**0.2144**	**0.0000**	**795.2091**

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	9.2900e-003	0.4728	0.0567	1.9600e-003	0.0570	5.2600e-003	0.0623	0.0157	5.0300e-003	0.0207	0.0000	187.8342	187.8342	3.9000e-004	0.0295	196.6413
Worker	0.1307	0.1168	1.3371	4.3000e-003	0.4922	2.4300e-003	0.4946	0.1308	2.2400e-003	0.1331	0.0000	397.1166	397.1166	6.9000e-003	9.5300e-003	400.1285
Total	**0.1400**	**0.5895**	**1.3938**	**6.2600e-003**	**0.5492**	**7.6900e-003**	**0.5569**	**0.1465**	**7.2700e-003**	**0.1538**	**0.0000**	**584.9508**	**584.9508**	**7.2900e-003**	**0.0391**	**596.7697**

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

3.5 Construction - 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	1.0618	9.4637	10.1908	0.0226		0.4773	0.4773		0.4467	0.4467	0.0000	1,958.8546	1,958.8546	0.5305	0.0000	1,972.1175
Total	**1.0618**	**9.4637**	**10.1908**	**0.0226**		**0.4773**	**0.4773**		**0.4467**	**0.4467**	**0.0000**	**1,958.8546**	**1,958.8546**	**0.5305**	**0.0000**	**1,972.1175**

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	0.0116	0.9795	0.1166	4.6700e-003	0.1413	0.0105	0.1517	0.0389	0.0100	0.0489	0.0000	448.7701	448.7701	4.9000e-004	0.0705	469.8004
Worker	0.3006	0.2514	3.0179	0.0103	1.2194	5.6600e-003	1.2250	0.3241	5.2100e-003	0.3293	0.0000	957.8525	957.8525	0.0151	0.0215	964.6326
Total	**0.3122**	**1.2309**	**3.1346**	**0.0150**	**1.3606**	**0.0161**	**1.3767**	**0.3630**	**0.0152**	**0.3782**	**0.0000**	**1,406.6226**	**1,406.6226**	**0.0156**	**0.0920**	**1,434.4330**

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

3.5 Construction - 2023

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	0.2620	1.2915	12.6497	0.0226		0.0344	0.0344		0.0344	0.0344	0.0000	1,958.8523	1,958.8523	0.5305	0.0000	1,972.1152
Total	**0.2620**	**1.2915**	**12.6497**	**0.0226**		**0.0344**	**0.0344**		**0.0344**	**0.0344**	**0.0000**	**1,958.8523**	**1,958.8523**	**0.5305**	**0.0000**	**1,972.1152**

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	0.0116	0.9795	0.1166	4.6700e-003	0.1413	0.0105	0.1517	0.0389	0.0100	0.0489	0.0000	448.7701	448.7701	4.9000e-004	0.0705	469.8004
Worker	0.3006	0.2514	3.0179	0.0103	1.2194	5.6600e-003	1.2250	0.3241	5.2100e-003	0.3293	0.0000	957.8525	957.8525	0.0151	0.0215	964.6326
Total	**0.3122**	**1.2309**	**3.1346**	**0.0150**	**1.3606**	**0.0161**	**1.3767**	**0.3630**	**0.0152**	**0.3782**	**0.0000**	**1,406.6226**	**1,406.6226**	**0.0156**	**0.0920**	**1,434.4330**

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

3.6 Paving - 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	1.3100e-003	0.0137	0.0157	2.0000e-005		7.5000e-004	7.5000e-004		6.9000e-004	6.9000e-004	0.0000	1.9594	1.9594	6.3000e-004	0.0000	1.9753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3100e-003**	**0.0137**	**0.0157**	**2.0000e-005**		**7.5000e-004**	**7.5000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**1.9594**	**1.9594**	**6.3000e-004**	**0.0000**	**1.9753**

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	2.4000e-004	0.0201	2.3900e-003	1.0000e-004	2.8900e-003	2.1000e-004	3.1100e-003	8.0000e-004	2.1000e-004	1.0000e-003	0.0000	9.1917	9.1917	1.0000e-005	1.4400e-003	9.6224
Worker	3.0800e-003	2.5700e-003	0.0309	1.1000e-004	0.0125	6.0000e-005	0.0126	3.3200e-003	5.0000e-005	3.3700e-003	0.0000	9.8093	9.8093	1.5000e-004	2.2000e-004	9.8788
Total	**3.3200e-003**	**0.0226**	**0.0333**	**2.1000e-004**	**0.0154**	**2.7000e-004**	**0.0157**	**4.1200e-003**	**2.6000e-004**	**4.3700e-003**	**0.0000**	**19.0010**	**19.0010**	**1.6000e-004**	**1.6600e-003**	**19.5012**

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

3.6 Paving - 2023

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	2.7000e-004	1.1800e-003	0.0169	2.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	1.9594	1.9594	6.3000e-004	0.0000	1.9753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7000e-004**	**1.1800e-003**	**0.0169**	**2.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**1.9594**	**1.9594**	**6.3000e-004**	**0.0000**	**1.9753**

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	2.4000e-004	0.0201	2.3900e-003	1.0000e-004	2.8900e-003	2.1000e-004	3.1100e-003	8.0000e-004	2.1000e-004	1.0000e-003	0.0000	9.1917	9.1917	1.0000e-005	1.4400e-003	9.6224
Worker	3.0800e-003	2.5700e-003	0.0309	1.1000e-004	0.0125	6.0000e-005	0.0126	3.3200e-003	5.0000e-005	3.3700e-003	0.0000	9.8093	9.8093	1.5000e-004	2.2000e-004	9.8788
Total	**3.3200e-003**	**0.0226**	**0.0333**	**2.1000e-004**	**0.0154**	**2.7000e-004**	**0.0157**	**4.1200e-003**	**2.6000e-004**	**4.3700e-003**	**0.0000**	**19.0010**	**19.0010**	**1.6000e-004**	**1.6600e-003**	**19.5012**

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	3.6900e-003	8.3200e-003	0.0441	1.2000e-004	0.0116	1.0000e-004	0.0117	3.1000e-003	1.0000e-004	3.2000e-003	0.0000	10.8219	10.8219	4.4000e-004	5.1000e-004	10.9852
Unmitigated	3.6900e-003	8.3200e-003	0.0441	1.2000e-004	0.0116	1.0000e-004	0.0117	3.1000e-003	1.0000e-004	3.2000e-003	0.0000	10.8219	10.8219	4.4000e-004	5.1000e-004	10.9852

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	6.00	0.00	0.00	31,200	31,200
Total	6.00	0.00	0.00	31,200	31,200

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	20.00	0.00	0.00	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	0.511083	0.054733	0.175759	0.156171	0.037435	0.008637	0.007437	0.019021	0.000259	0.000185	0.025067	0.000721	0.003491

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	400.7766	400.7766	0.0648	7.8600e-003	404.7395
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	400.7766	400.7766	0.0648	7.8600e-003	404.7395
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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	0	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**

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	0	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**

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	4.33161e+006	400.7766	0.0648	7.8600e-003	404.7395
Total		**400.7766**	**0.0648**	**7.8600e-003**	**404.7395**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	4.33161e+006	400.7766	0.0648	7.8600e-003	404.7395
Total		**400.7766**	**0.0648**	**7.8600e-003**	**404.7395**

6.0 Area Detail

6.1 Mitigation Measures Area

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	1.9424	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Unmitigated	1.9424	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-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	1.2619					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6805					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	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Total	**1.9424**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**8.0000e-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	1.2619					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6805					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	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Total	**1.9424**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**8.0000e-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	0.1142	3.8000e-004	1.0000e-005	0.1268
Unmitigated	0.1142	3.8000e-004	1.0000e-005	0.1268

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0.011 / 0.325	0.1142	3.8000e-004	1.0000e-005	0.1268
Total		**0.1142**	**3.8000e-004**	**1.0000e-005**	**0.1268**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0.011 / 0.325	0.1142	3.8000e-004	1.0000e-005	0.1268
Total		**0.1142**	**3.8000e-004**	**1.0000e-005**	**0.1268**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.7308	0.0432	0.0000	1.8105
Unmitigated	0.7308	0.0432	0.0000	1.8105

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	3.6	0.7308	0.0432	0.0000	1.8105
Total		**0.7308**	**0.0432**	**0.0000**	**1.8105**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	3.6	0.7308	0.0432	0.0000	1.8105
Total		**0.7308**	**0.0432**	**0.0000**	**1.8105**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	8.00	365	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	0.0907	0.6073	0.5932	2.4100e-003		0.0219	0.0219		0.0201	0.0201	0.0000	211.9761	211.9761	0.0686	0.0000	213.6901
Total	**0.0907**	**0.6073**	**0.5932**	**2.4100e-003**		**0.0219**	**0.0219**		**0.0201**	**0.0201**	**0.0000**	**211.9761**	**211.9761**	**0.0686**	**0.0000**	**213.6901**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	200	66	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

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

10.1 Stationary Sources

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					
Emergency Generator - Diesel (50 - 75 HP)	0.0108	0.0353	0.0393	5.0000e-005		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	5.0265	5.0265	7.0000e-004	0.0000	5.0441
Total	**0.0108**	**0.0353**	**0.0393**	**5.0000e-005**		**1.5900e-003**	**1.5900e-003**		**1.5900e-003**	**1.5900e-003**	**0.0000**	**5.0265**	**5.0265**	**7.0000e-004**	**0.0000**	**5.0441**

11.0 Vegetation

Janus Solar Project - Colusa County, Summer

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

Janus Solar Project

Colusa County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	4.00	User Defined Unit	4.00	174,240.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage and square footage estimate based on building area (used only in operational emissions calculations).

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.

Trips and VMT - Provided by applicant.

Grading -

Vehicle Trips - Up to 30 staff for maintenance activities.

Energy Use - Data for 'Refrigerated Warehouse-Rail' used to estimate energy use by BESS, O&M, Substation, and area lighting.

Janus Solar Project - Colusa County, Summer

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

Water And Wastewater - Water use (approx. 30 gal/day sanitary waste to septic tank, 890 gal/day for O&M) provided by applicant.

Solid Waste - 1 cu. yd./wk, and assuming density for municipal solid waste (commercial - all waste, uncompacted) of 138 lbs per cu. yd.

Construction Off-road Equipment Mitigation - Tier 4 engines will be used.

Operational Off-Road Equipment - One off-road truck per day for potential O&M activities.

Stationary Sources - Emergency Generators and Fire Pumps - 49 kW diesel powered emergency generator to be located at project substation.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	87120	544500
tblAreaCoating	Area_Nonresidential_Interior	261360	1633500
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	20
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	20.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	16.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	26.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	19.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	9.00
tblConstructionPhase	NumDays	8.00	23.00
tblConstructionPhase	NumDays	230.00	233.00
tblConstructionPhase	NumDays	18.00	17.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblEnergyUse	LightingElect	0.00	2.45

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

tblEnergyUse	NT24E	0.00	21.99
tblEnergyUse	T24E	0.00	0.42
tblLandUse	LandUseSquareFeet	0.00	174,240.00
tblLandUse	LotAcreage	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	365.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	0.00	3.60
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00

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

tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	29.00	60.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
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
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripNumber	88.00	100.00
tblTripsAndVMT	WorkerTripNumber	83.00	100.00
tblTripsAndVMT	WorkerTripNumber	83.00	200.00
tblTripsAndVMT	WorkerTripNumber	73.00	400.00
tblTripsAndVMT	WorkerTripNumber	3.00	40.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	40.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	15.00
tblWater	IndoorWaterUseRate	0.00	11,000.00
tblWater	OutdoorWaterUseRate	0.00	325,000.00

2.0 Emissions Summary

Janus Solar Project - Colusa 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					
2022	18.5826	166.0302	178.5535	0.5888	20.4555	6.9144	27.3699	5.4713	6.4809	11.9522	0.0000	58,934.2453	58,934.2453	7.3422	3.2102	60,074.4304
2023	17.1352	150.0841	172.7272	0.5782	20.4557	6.1974	26.6531	5.4714	5.8066	11.2780	0.0000	57,911.0945	57,911.0945	7.2833	3.0795	59,010.8694
Maximum	**18.5826**	**166.0302**	**178.5535**	**0.5888**	**20.4557**	**6.9144**	**27.3699**	**5.4714**	**6.4809**	**11.9522**	**0.0000**	**58,934.2453**	**58,934.2453**	**7.3422**	**3.2102**	**60,074.4304**

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					
2022	8.2250	58.5678	207.6925	0.5888	20.4555	0.9577	21.4132	5.4713	0.9316	6.4029	0.0000	58,934.2452	58,934.2452	7.3422	3.2102	60,074.4303
2023	7.4985	51.6242	202.3530	0.5782	20.4557	0.8608	21.3164	5.4714	0.8390	6.3103	0.0000	57,911.0945	57,911.0945	7.2833	3.0795	59,010.8694
Maximum	**8.2250**	**58.5678**	**207.6925**	**0.5888**	**20.4557**	**0.9577**	**21.4132**	**5.4714**	**0.9316**	**6.4029**	**0.0000**	**58,934.2452**	**58,934.2452**	**7.3422**	**3.2102**	**60,074.4303**

Janus Solar Project - Colusa 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	**55.98**	**65.14**	**-16.73**	**0.00**	**0.00**	**86.13**	**20.90**	**0.00**	**85.59**	**45.27**	**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	10.6432	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Energy	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
Mobile	0.5167	1.1287	7.3823	0.0190	1.8443	0.0159	1.8602	0.4918	0.0150	0.5067		1,962.1656	1,962.1656	0.0672	0.0800	1,987.6955
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
Stationary	2.5995	8.4763	9.4322	0.0125		0.3824	0.3824		0.3824	0.3824		1,329.7904	1,329.7904	0.1864		1,334.4513
Total	**14.2563**	**12.9328**	**20.0651**	**0.0447**	**1.8443**	**0.5181**	**2.3624**	**0.4918**	**0.5076**	**0.9994**	**0.0000**	**4,572.3073**	**4,572.3073**	**0.6677**	**0.0800**	**4,612.8504**

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	10.6432	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Energy	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
Mobile	0.5167	1.1287	7.3823	0.0190	1.8443	0.0159	1.8602	0.4918	0.0150	0.5067		1,962.1656	1,962.1656	0.0672	0.0800	1,987.6955
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
Stationary	2.5995	8.4763	9.4322	0.0125		0.3824	0.3824		0.3824	0.3824		1,329.7904	1,329.7904	0.1864		1,334.4513
Total	**14.2563**	**12.9328**	**20.0651**	**0.0447**	**1.8443**	**0.5181**	**2.3624**	**0.4918**	**0.5076**	**0.9994**	**0.0000**	**4,572.3073**	**4,572.3073**	**0.6677**	**0.0800**	**4,612.8504**

	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	Preparation	Site Preparation	9/1/2022	9/9/2022	7	9	
2	Excavation	Grading	9/10/2022	10/2/2022	7	23	
3	Utilities/Sub-grade	Trenching	10/3/2022	10/25/2022	7	23	

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

4	Construction	Building Construction	10/26/2022	6/15/2023	7	233	
5	Paving	Paving	6/16/2023	7/2/2023	7	17	

Acres of Grading (Site Preparation Phase): 36

Acres of Grading (Grading Phase): 92

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
Preparation	Crawler Tractors	2	8.00	212	0.43
Preparation	Dumpers/Tenders	5	8.00	16	0.38
Preparation	Forklifts	2	8.00	89	0.20
Preparation	Generator Sets	4	8.00	84	0.74
Preparation	Graders	2	8.00	187	0.41
Preparation	Off-Highway Trucks	8	8.00	402	0.38
Preparation	Plate Compactors	2	8.00	8	0.43
Preparation	Scrapers	2	8.00	367	0.48
Preparation	Skid Steer Loaders	4	8.00	65	0.37
Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Excavation	Crawler Tractors	2	8.00	212	0.43
Excavation	Dumpers/Tenders	5	8.00	16	0.38
Excavation	Forklifts	2	8.00	89	0.20
Excavation	Generator Sets	4	8.00	84	0.74
Excavation	Graders	2	8.00	187	0.41
Excavation	Off-Highway Trucks	8	8.00	402	0.38
Excavation	Plate Compactors	2	8.00	8	0.43
Excavation	Scrapers	2	8.00	367	0.48

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

Excavation	Skid Steer Loaders	2	8.00	65	0.37
Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Utilities/Sub-grade	Crawler Tractors	2	8.00	212	0.43
Utilities/Sub-grade	Dumpers/Tenders	5	8.00	16	0.38
Utilities/Sub-grade	Forklifts	2	8.00	89	0.20
Utilities/Sub-grade	Generator Sets	4	8.00	84	0.74
Utilities/Sub-grade	Graders	2	8.00	187	0.41
Utilities/Sub-grade	Off-Highway Trucks	8	8.00	402	0.38
Utilities/Sub-grade	Plate Compactors	2	8.00	8	0.43
Utilities/Sub-grade	Scrapers	2	8.00	367	0.48
Utilities/Sub-grade	Skid Steer Loaders	2	8.00	65	0.37
Utilities/Sub-grade	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Construction	Bore/Drill Rigs	10	8.00	221	0.50
Construction	Cement and Mortar Mixers	10	8.00	9	0.56
Construction	Concrete/Industrial Saws	3	8.00	81	0.73
Construction	Cranes	1	8.00	231	0.29
Construction	Dumpers/Tenders	5	8.00	16	0.38
Construction	Excavators	2	8.00	158	0.38
Construction	Forklifts	5	8.00	89	0.20
Construction	Generator Sets	4	8.00	84	0.74
Construction	Off-Highway Trucks	2	8.00	402	0.38
Construction	Pavers	1	8.00	130	0.42
Construction	Paving Equipment	1	8.00	132	0.36
Construction	Plate Compactors	1	8.00	8	0.43
Construction	Rollers	1	8.00	80	0.38
Construction	Skid Steer Loaders	2	8.00	65	0.37
Construction	Tractors/Loaders/Backhoes	7	8.00	97	0.37
Construction	Trenchers	10	8.00	78	0.50
Paving	Rollers	1	8.00	80	0.38

Janus Solar Project - Colusa County, Summer

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

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
Preparation	35	100.00	40.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Excavation	33	100.00	40.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Utilities/Sub-grade	33	200.00	40.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Construction	65	400.00	60.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Paving	1	40.00	10.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Preparation - 2022

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					4.2420	0.0000	4.2420	0.4580	0.0000	0.4580			0.0000			0.0000
Off-Road	10.6115	99.5926	80.8814	0.2198		3.9860	3.9860		3.7226	3.7226		21,141.4739	21,141.4739	6.0690		21,293.1986
Total	**10.6115**	**99.5926**	**80.8814**	**0.2198**	**4.2420**	**3.9860**	**8.2280**	**0.4580**	**3.7226**	**4.1807**		**21,141.4739**	**21,141.4739**	**6.0690**		**21,293.1986**

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

3.2 Preparation - 2022

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	0.5574	26.5385	3.3757	0.1168	3.5049	0.3141	3.8190	0.9613	0.3005	1.2618		12,360.3831	12,360.3831	0.0261	1.9426	12,939.9279
Worker	1.0582	0.8000	12.5558	0.0354	3.7996	0.0181	3.8177	1.0074	0.0167	1.0240		3,600.9552	3,600.9552	0.0619	0.0741	3,624.5744
Total	**1.6156**	**27.3385**	**15.9314**	**0.1522**	**7.3044**	**0.3323**	**7.6367**	**1.9686**	**0.3172**	**2.2859**		**15,961.3383**	**15,961.3383**	**0.0879**	**2.0167**	**16,564.5023**

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					1.9089	0.0000	1.9089	0.2061	0.0000	0.2061			0.0000			0.0000
Off-Road	2.6776	15.3694	108.3075	0.2198		0.3434	0.3434		0.3434	0.3434	0.0000	21,141.4738	21,141.4738	6.0690		21,293.1986
Total	**2.6776**	**15.3694**	**108.3075**	**0.2198**	**1.9089**	**0.3434**	**2.2523**	**0.2061**	**0.3434**	**0.5496**	**0.0000**	**21,141.4738**	**21,141.4738**	**6.0690**		**21,293.1986**

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

3.2 Preparation - 2022

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	0.5574	26.5385	3.3757	0.1168	3.5049	0.3141	3.8190	0.9613	0.3005	1.2618		12,360.3831	12,360.3831	0.0261	1.9426	12,939.9279
Worker	1.0582	0.8000	12.5558	0.0354	3.7996	0.0181	3.8177	1.0074	0.0167	1.0240		3,600.9552	3,600.9552	0.0619	0.0741	3,624.5744
Total	**1.6156**	**27.3385**	**15.9314**	**0.1522**	**7.3044**	**0.3323**	**7.6367**	**1.9686**	**0.3172**	**2.2859**		**15,961.3383**	**15,961.3383**	**0.0879**	**2.0167**	**16,564.5023**

3.3 Excavation - 2022

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					4.2420	0.0000	4.2420	0.4580	0.0000	0.4580			0.0000			0.0000
Off-Road	10.4723	97.7354	78.1070	0.2157		3.9170	3.9170		3.6592	3.6592		20,740.6913	20,740.6913	5.9394		20,889.1756
Total	**10.4723**	**97.7354**	**78.1070**	**0.2157**	**4.2420**	**3.9170**	**8.1590**	**0.4580**	**3.6592**	**4.1172**		**20,740.6913**	**20,740.6913**	**5.9394**		**20,889.1756**

Janus Solar Project - Colusa County, Summer

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

3.3 Excavation - 2022

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	0.5574	26.5385	3.3757	0.1168	3.5049	0.3141	3.8190	0.9613	0.3005	1.2618		12,360.3831	12,360.3831	0.0261	1.9426	12,939.9279
Worker	1.0582	0.8000	12.5558	0.0354	3.7996	0.0181	3.8177	1.0074	0.0167	1.0240		3,600.9552	3,600.9552	0.0619	0.0741	3,624.5744
Total	**1.6156**	**27.3385**	**15.9314**	**0.1522**	**7.3044**	**0.3323**	**7.6367**	**1.9686**	**0.3172**	**2.2859**		**15,961.3383**	**15,961.3383**	**0.0879**	**2.0167**	**16,564.5023**

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					1.9089	0.0000	1.9089	0.2061	0.0000	0.2061			0.0000			0.0000
Off-Road	2.5758	13.0450	105.1687	0.2157		0.3367	0.3367		0.3367	0.3367	0.0000	20,740.6913	20,740.6913	5.9394		20,889.1756
Total	**2.5758**	**13.0450**	**105.1687**	**0.2157**	**1.9089**	**0.3367**	**2.2456**	**0.2061**	**0.3367**	**0.5428**	**0.0000**	**20,740.6913**	**20,740.6913**	**5.9394**		**20,889.1756**

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

3.3 Excavation - 2022

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	0.5574	26.5385	3.3757	0.1168	3.5049	0.3141	3.8190	0.9613	0.3005	1.2618		12,360.3831	12,360.3831	0.0261	1.9426	12,939.9279
Worker	1.0582	0.8000	12.5558	0.0354	3.7996	0.0181	3.8177	1.0074	0.0167	1.0240		3,600.9552	3,600.9552	0.0619	0.0741	3,624.5744
Total	**1.6156**	**27.3385**	**15.9314**	**0.1522**	**7.3044**	**0.3323**	**7.6367**	**1.9686**	**0.3172**	**2.2859**		**15,961.3383**	**15,961.3383**	**0.0879**	**2.0167**	**16,564.5023**

3.4 Utilities/Sub-grade - 2022

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	10.4723	97.7354	78.1070	0.2157		3.9170	3.9170		3.6592	3.6592		20,740.6913	20,740.6913	5.9394		20,889.1756
Total	**10.4723**	**97.7354**	**78.1070**	**0.2157**		**3.9170**	**3.9170**		**3.6592**	**3.6592**		**20,740.6913**	**20,740.6913**	**5.9394**		**20,889.1756**

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

3.4 Utilities/Sub-grade - 2022

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	0.5574	26.5385	3.3757	0.1168	3.5049	0.3141	3.8190	0.9613	0.3005	1.2618		12,360.3831	12,360.3831	0.0261	1.9426	12,939.9279
Worker	2.1163	1.5999	25.1115	0.0708	7.5991	0.0362	7.6353	2.0147	0.0334	2.0481		7,201.9104	7,201.9104	0.1237	0.1481	7,249.1488
Total	**2.6738**	**28.1384**	**28.4872**	**0.1876**	**11.1040**	**0.3504**	**11.4543**	**2.9760**	**0.3339**	**3.3099**		**19,562.2935**	**19,562.2935**	**0.1498**	**2.0907**	**20,189.0768**

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	2.5758	13.0450	105.1687	0.2157		0.3367	0.3367		0.3367	0.3367	0.0000	20,740.6913	20,740.6913	5.9394		20,889.1756
Total	**2.5758**	**13.0450**	**105.1687**	**0.2157**		**0.3367**	**0.3367**		**0.3367**	**0.3367**	**0.0000**	**20,740.6913**	**20,740.6913**	**5.9394**		**20,889.1756**

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

3.4 Utilities/Sub-grade - 2022

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	0.5574	26.5385	3.3757	0.1168	3.5049	0.3141	3.8190	0.9613	0.3005	1.2618		12,360.3831	12,360.3831	0.0261	1.9426	12,939.9279
Worker	2.1163	1.5999	25.1115	0.0708	7.5991	0.0362	7.6353	2.0147	0.0334	2.0481		7,201.9104	7,201.9104	0.1237	0.1481	7,249.1488
Total	**2.6738**	**28.1384**	**28.4872**	**0.1876**	**11.1040**	**0.3504**	**11.4543**	**2.9760**	**0.3339**	**3.3099**		**19,562.2935**	**19,562.2935**	**0.1498**	**2.0907**	**20,189.0768**

3.5 Construction - 2022

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	13.5138	123.0225	123.2669	0.2721		6.3707	6.3707		5.9633	5.9633		25,989.8499	25,989.8499	7.0556		26,166.2408
Total	**13.5138**	**123.0225**	**123.2669**	**0.2721**		**6.3707**	**6.3707**		**5.9633**	**5.9633**		**25,989.8499**	**25,989.8499**	**7.0556**		**26,166.2408**

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

3.5 Construction - 2022

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	0.8361	39.8078	5.0635	0.1752	5.2573	0.4712	5.7285	1.4419	0.4508	1.8927		18,540.5746	18,540.5746	0.0391	2.9139	19,409.8919
Worker	4.2327	3.1998	50.2230	0.1416	15.1982	0.0725	15.2707	4.0294	0.0668	4.0961		14,403.8208	14,403.8208	0.2474	0.2963	14,498.2977
Total	**5.0688**	**43.0076**	**55.2866**	**0.3168**	**20.4555**	**0.5437**	**20.9992**	**5.4713**	**0.5176**	**5.9889**		**32,944.3954**	**32,944.3954**	**0.2865**	**3.2102**	**33,908.1895**

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	3.1562	15.5602	152.4060	0.2721		0.4140	0.4140		0.4140	0.4140	0.0000	25,989.8498	25,989.8498	7.0556		26,166.2408
Total	**3.1562**	**15.5602**	**152.4060**	**0.2721**		**0.4140**	**0.4140**		**0.4140**	**0.4140**	**0.0000**	**25,989.8498**	**25,989.8498**	**7.0556**		**26,166.2408**

Janus Solar Project - Colusa County, Summer

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

3.5 Construction - 2022

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	0.8361	39.8078	5.0635	0.1752	5.2573	0.4712	5.7285	1.4419	0.4508	1.8927		18,540.5746	18,540.5746	0.0391	2.9139	19,409.8919
Worker	4.2327	3.1998	50.2230	0.1416	15.1982	0.0725	15.2707	4.0294	0.0668	4.0961		14,403.8208	14,403.8208	0.2474	0.2963	14,498.2977
Total	**5.0688**	**43.0076**	**55.2866**	**0.3168**	**20.4555**	**0.5437**	**20.9992**	**5.4713**	**0.5176**	**5.9889**		**32,944.3954**	**32,944.3954**	**0.2865**	**3.2102**	**33,908.1895**

3.5 Construction - 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	12.7929	114.0201	122.7802	0.2723		5.7507	5.7507		5.3817	5.3817		26,015.2723	26,015.2723	7.0457		26,191.4149
Total	**12.7929**	**114.0201**	**122.7802**	**0.2723**		**5.7507**	**5.7507**		**5.3817**	**5.3817**		**26,015.2723**	**26,015.2723**	**7.0457**		**26,191.4149**

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

3.5 Construction - 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	0.0000	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	0.4241	33.2827	4.2066	0.1689	5.2575	0.3785	5.6360	1.4420	0.3621	1.8041		17,877.7854	17,877.7854	0.0200	2.8097	18,715.5750
Worker	3.9181	2.7813	45.7404	0.1370	15.1982	0.0682	15.2664	4.0294	0.0628	4.0922		14,018.0368	14,018.0368	0.2176	0.2698	14,103.8795
Total	**4.3423**	**36.0640**	**49.9470**	**0.3059**	**20.4557**	**0.4467**	**20.9024**	**5.4714**	**0.4249**	**5.8963**		**31,895.8222**	**31,895.8222**	**0.2376**	**3.0795**	**32,819.4545**

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	3.1562	15.5602	152.4060	0.2723		0.4140	0.4140		0.4140	0.4140	0.0000	26,015.2723	26,015.2723	7.0457		26,191.4149
Total	**3.1562**	**15.5602**	**152.4060**	**0.2723**		**0.4140**	**0.4140**		**0.4140**	**0.4140**	**0.0000**	**26,015.2723**	**26,015.2723**	**7.0457**		**26,191.4149**

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

3.5 Construction - 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	0.0000	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	0.4241	33.2827	4.2066	0.1689	5.2575	0.3785	5.6360	1.4420	0.3621	1.8041		17,877.7854	17,877.7854	0.0200	2.8097	18,715.5750
Worker	3.9181	2.7813	45.7404	0.1370	15.1982	0.0682	15.2664	4.0294	0.0628	4.0922		14,018.0368	14,018.0368	0.2176	0.2698	14,103.8795
Total	**4.3423**	**36.0640**	**49.9470**	**0.3059**	**20.4557**	**0.4467**	**20.9024**	**5.4714**	**0.4249**	**5.8963**		**31,895.8222**	**31,895.8222**	**0.2376**	**3.0795**	**32,819.4545**

3.6 Paving - 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	0.1537	1.6101	1.8522	2.6200e-003		0.0886	0.0886		0.0815	0.0815		254.1077	254.1077	0.0822		256.1623
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1537**	**1.6101**	**1.8522**	**2.6200e-003**		**0.0886**	**0.0886**		**0.0815**	**0.0815**		**254.1077**	**254.1077**	**0.0822**		**256.1623**

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

3.6 Paving - 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	0.0000	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	0.0707	5.5471	0.7011	0.0282	0.8762	0.0631	0.9393	0.2403	0.0604	0.3007		2,979.6309	2,979.6309	3.3200e-003	0.4683	3,119.2625
Worker	0.3918	0.2781	4.5740	0.0137	1.5198	6.8200e-003	1.5266	0.4029	6.2800e-003	0.4092		1,401.8037	1,401.8037	0.0218	0.0270	1,410.3880
Total	**0.4625**	**5.8252**	**5.2751**	**0.0419**	**2.3961**	**0.0699**	**2.4660**	**0.6433**	**0.0666**	**0.7099**		**4,381.4346**	**4,381.4346**	**0.0251**	**0.4953**	**4,529.6504**

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	0.0322	0.1394	1.9838	2.6200e-003		4.2900e-003	4.2900e-003		4.2900e-003	4.2900e-003	0.0000	254.1077	254.1077	0.0822		256.1623
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0322**	**0.1394**	**1.9838**	**2.6200e-003**		**4.2900e-003**	**4.2900e-003**		**4.2900e-003**	**4.2900e-003**	**0.0000**	**254.1077**	**254.1077**	**0.0822**		**256.1623**

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

3.6 Paving - 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	0.0000	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	0.0707	5.5471	0.7011	0.0282	0.8762	0.0631	0.9393	0.2403	0.0604	0.3007		2,979.6309	2,979.6309	3.3200e-003	0.4683	3,119.2625
Worker	0.3918	0.2781	4.5740	0.0137	1.5198	6.8200e-003	1.5266	0.4029	6.2800e-003	0.4092		1,401.8037	1,401.8037	0.0218	0.0270	1,410.3880
Total	**0.4625**	**5.8252**	**5.2751**	**0.0419**	**2.3961**	**0.0699**	**2.4660**	**0.6433**	**0.0666**	**0.7099**		**4,381.4346**	**4,381.4346**	**0.0251**	**0.4953**	**4,529.6504**

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	0.5167	1.1287	7.3823	0.0190	1.8443	0.0159	1.8602	0.4918	0.0150	0.5067		1,962.1656	1,962.1656	0.0672	0.0800	1,987.6955
Unmitigated	0.5167	1.1287	7.3823	0.0190	1.8443	0.0159	1.8602	0.4918	0.0150	0.5067		1,962.1656	1,962.1656	0.0672	0.0800	1,987.6955

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	60.00	0.00	0.00	624,000	624,000
Total	60.00	0.00	0.00	624,000	624,000

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	40.00	0.00	0.00	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	0.511083	0.054733	0.175759	0.156171	0.037435	0.008637	0.007437	0.019021	0.000259	0.000185	0.025067	0.000721	0.003491

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	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

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	0	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**

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	0	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**

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	10.6432	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Unmitigated	10.6432	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004

Janus Solar Project - Colusa 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	6.9144					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.7287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Total	**10.6432**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**8.8000e-004**	**8.8000e-004**	**0.0000**		**9.3000e-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	6.9144					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.7287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Total	**10.6432**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**8.8000e-004**	**8.8000e-004**	**0.0000**		**9.3000e-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	365	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
Emergency Generator	1	24	200	66	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

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

10.1 Stationary Sources

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					
Emergency Generator - Diesel (50 - 75 HP)	2.5995	8.4763	9.4322	0.0125		0.3824	0.3824		0.3824	0.3824		1,329.7904	1,329.7904	0.1864		1,334.4513
Total	**2.5995**	**8.4763**	**9.4322**	**0.0125**		**0.3824**	**0.3824**		**0.3824**	**0.3824**		**1,329.7904**	**1,329.7904**	**0.1864**		**1,334.4513**

11.0 Vegetation

Janus Solar Project - Colusa County, Winter

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

Janus Solar Project

Colusa County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	4.00	User Defined Unit	4.00	174,240.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage and square footage estimate based on building area (used only in operational emissions calculations).

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.

Trips and VMT - Provided by applicant.

Grading -

Vehicle Trips - Up to 30 staff for maintenance activities.

Energy Use - Data for 'Refrigerated Warehouse-Rail' used to estimate energy use by BESS, O&M, Substation, and area lighting.

Janus Solar Project - Colusa County, Winter

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

Water And Wastewater - Water use (approx. 30 gal/day sanitary waste to septic tank, 890 gal/day for O&M) provided by applicant.

Solid Waste - 1 cu. yd./wk, and assuming density for municipal solid waste (commercial - all waste, uncompacted) of 138 lbs per cu. yd.

Construction Off-road Equipment Mitigation - Tier 4 engines will be used.

Operational Off-Road Equipment - One off-road truck per day for potential O&M activities.

Stationary Sources - Emergency Generators and Fire Pumps - 49 kW diesel powered emergency generator to be located at project substation.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	87120	544500
tblAreaCoating	Area_Nonresidential_Interior	261360	1633500
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	20
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	20.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	16.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	26.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	19.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	9.00
tblConstructionPhase	NumDays	8.00	23.00
tblConstructionPhase	NumDays	230.00	233.00
tblConstructionPhase	NumDays	18.00	17.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblEnergyUse	LightingElect	0.00	2.45

Janus Solar Project - Colusa County, Winter

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

tblEnergyUse	NT24E	0.00	21.99
tblEnergyUse	T24E	0.00	0.42
tblLandUse	LandUseSquareFeet	0.00	174,240.00
tblLandUse	LotAcreage	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	365.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	0.00	3.60
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripLength	6.60	100.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00

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

tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	29.00	60.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
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
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripLength	16.80	50.00
tblTripsAndVMT	WorkerTripNumber	88.00	100.00
tblTripsAndVMT	WorkerTripNumber	83.00	100.00
tblTripsAndVMT	WorkerTripNumber	83.00	200.00
tblTripsAndVMT	WorkerTripNumber	73.00	400.00
tblTripsAndVMT	WorkerTripNumber	3.00	40.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	40.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	15.00
tblWater	IndoorWaterUseRate	0.00	11,000.00
tblWater	OutdoorWaterUseRate	0.00	325,000.00

2.0 Emissions Summary

Janus Solar Project - Colusa 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					
2022	18.6429	170.0502	166.5767	0.5719	20.4555	6.9146	27.3701	5.4713	6.4811	11.9524	0.0000	57,211.2520	57,211.2520	7.3205	3.2516	58,363.2264
2023	17.2131	153.4881	161.8342	0.5619	20.4557	6.1975	26.6532	5.4714	5.8067	11.2781	0.0000	56,241.8078	56,241.8078	7.2650	3.1174	57,352.4039
Maximum	**18.6429**	**170.0502**	**166.5767**	**0.5719**	**20.4557**	**6.9146**	**27.3701**	**5.4714**	**6.4811**	**11.9524**	**0.0000**	**57,211.2520**	**57,211.2520**	**7.3205**	**3.2516**	**58,363.2264**

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					
2022	8.2853	62.5879	195.7157	0.5719	20.4555	0.9579	21.4134	5.4713	0.9318	6.4031	0.0000	57,211.2520	57,211.2520	7.3205	3.2516	58,363.2264
2023	7.5763	55.0283	191.4600	0.5619	20.4557	0.8609	21.3165	5.4714	0.8391	6.3105	0.0000	56,241.8078	56,241.8078	7.2650	3.1174	57,352.4039
Maximum	**8.2853**	**62.5879**	**195.7157**	**0.5719**	**20.4557**	**0.9579**	**21.4134**	**5.4714**	**0.9318**	**6.4031**	**0.0000**	**57,211.2520**	**57,211.2520**	**7.3205**	**3.2516**	**58,363.2264**

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	**55.76**	**63.65**	**-17.89**	**0.00**	**0.00**	**86.13**	**20.90**	**0.00**	**85.59**	**45.27**	**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	10.6432	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Energy	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
Mobile	0.4775	1.2893	6.5784	0.0173	1.8443	0.0159	1.8602	0.4918	0.0150	0.5067		1,787.0508	1,787.0508	0.0690	0.0856	1,814.2841
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
Stationary	2.5995	8.4763	9.4322	0.0125		0.3824	0.3824		0.3824	0.3824		1,329.7904	1,329.7904	0.1864		1,334.4513
Total	**14.2172**	**13.0934**	**19.2613**	**0.0430**	**1.8443**	**0.5181**	**2.3624**	**0.4918**	**0.5076**	**0.9994**	**0.0000**	**4,397.1924**	**4,397.1924**	**0.6695**	**0.0856**	**4,439.4391**

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	10.6432	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Energy	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
Mobile	0.4775	1.2893	6.5784	0.0173	1.8443	0.0159	1.8602	0.4918	0.0150	0.5067		1,787.0508	1,787.0508	0.0690	0.0856	1,814.2841
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
Stationary	2.5995	8.4763	9.4322	0.0125		0.3824	0.3824		0.3824	0.3824		1,329.7904	1,329.7904	0.1864		1,334.4513
Total	**14.2172**	**13.0934**	**19.2613**	**0.0430**	**1.8443**	**0.5181**	**2.3624**	**0.4918**	**0.5076**	**0.9994**	**0.0000**	**4,397.1924**	**4,397.1924**	**0.6695**	**0.0856**	**4,439.4391**

	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	Preparation	Site Preparation	9/1/2022	9/9/2022	7	9	
2	Excavation	Grading	9/10/2022	10/2/2022	7	23	
3	Utilities/Sub-grade	Trenching	10/3/2022	10/25/2022	7	23	

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

4	Construction	Building Construction	10/26/2022	6/15/2023	7	233	
5	Paving	Paving	6/16/2023	7/2/2023	7	17	

Acres of Grading (Site Preparation Phase): 36

Acres of Grading (Grading Phase): 92

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
Preparation	Crawler Tractors	2	8.00	212	0.43
Preparation	Dumpers/Tenders	5	8.00	16	0.38
Preparation	Forklifts	2	8.00	89	0.20
Preparation	Generator Sets	4	8.00	84	0.74
Preparation	Graders	2	8.00	187	0.41
Preparation	Off-Highway Trucks	8	8.00	402	0.38
Preparation	Plate Compactors	2	8.00	8	0.43
Preparation	Scrapers	2	8.00	367	0.48
Preparation	Skid Steer Loaders	4	8.00	65	0.37
Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Excavation	Crawler Tractors	2	8.00	212	0.43
Excavation	Dumpers/Tenders	5	8.00	16	0.38
Excavation	Forklifts	2	8.00	89	0.20
Excavation	Generator Sets	4	8.00	84	0.74
Excavation	Graders	2	8.00	187	0.41
Excavation	Off-Highway Trucks	8	8.00	402	0.38
Excavation	Plate Compactors	2	8.00	8	0.43
Excavation	Scrapers	2	8.00	367	0.48

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

Excavation	Skid Steer Loaders	2	8.00	65	0.37
Excavation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Utilities/Sub-grade	Crawler Tractors	2	8.00	212	0.43
Utilities/Sub-grade	Dumpers/Tenders	5	8.00	16	0.38
Utilities/Sub-grade	Forklifts	2	8.00	89	0.20
Utilities/Sub-grade	Generator Sets	4	8.00	84	0.74
Utilities/Sub-grade	Graders	2	8.00	187	0.41
Utilities/Sub-grade	Off-Highway Trucks	8	8.00	402	0.38
Utilities/Sub-grade	Plate Compactors	2	8.00	8	0.43
Utilities/Sub-grade	Scrapers	2	8.00	367	0.48
Utilities/Sub-grade	Skid Steer Loaders	2	8.00	65	0.37
Utilities/Sub-grade	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Construction	Bore/Drill Rigs	10	8.00	221	0.50
Construction	Cement and Mortar Mixers	10	8.00	9	0.56
Construction	Concrete/Industrial Saws	3	8.00	81	0.73
Construction	Cranes	1	8.00	231	0.29
Construction	Dumpers/Tenders	5	8.00	16	0.38
Construction	Excavators	2	8.00	158	0.38
Construction	Forklifts	5	8.00	89	0.20
Construction	Generator Sets	4	8.00	84	0.74
Construction	Off-Highway Trucks	2	8.00	402	0.38
Construction	Pavers	1	8.00	130	0.42
Construction	Paving Equipment	1	8.00	132	0.36
Construction	Plate Compactors	1	8.00	8	0.43
Construction	Rollers	1	8.00	80	0.38
Construction	Skid Steer Loaders	2	8.00	65	0.37
Construction	Tractors/Loaders/Backhoes	7	8.00	97	0.37
Construction	Trenchers	10	8.00	78	0.50
Paving	Rollers	1	8.00	80	0.38

Janus Solar Project - Colusa County, Winter

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

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
Preparation	35	100.00	40.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Excavation	33	100.00	40.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Utilities/Sub-grade	33	200.00	40.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Construction	65	400.00	60.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT
Paving	1	40.00	10.00	0.00	50.00	100.00	0.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Preparation - 2022

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					4.2420	0.0000	4.2420	0.4580	0.0000	0.4580			0.0000			0.0000
Off-Road	10.6115	99.5926	80.8814	0.2198		3.9860	3.9860		3.7226	3.7226		21,141.4739	21,141.4739	6.0690		21,293.1986
Total	**10.6115**	**99.5926**	**80.8814**	**0.2198**	**4.2420**	**3.9860**	**8.2280**	**0.4580**	**3.7226**	**4.1807**		**21,141.4739**	**21,141.4739**	**6.0690**		**21,293.1986**

Janus Solar Project - Colusa County, Winter

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

3.2 Preparation - 2022

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	0.5507	28.7604	3.3971	0.1168	3.5049	0.3143	3.8191	0.9613	0.3007	1.2619		12,362.5681	12,362.5681	0.0258	1.9430	12,942.2151
Worker	1.0757	0.9718	9.5535	0.0312	3.7996	0.0181	3.8177	1.0074	0.0167	1.0240		3,169.3875	3,169.3875	0.0566	0.0843	3,195.9158
Total	**1.6265**	**29.7322**	**12.9506**	**0.1480**	**7.3044**	**0.3324**	**7.6368**	**1.9686**	**0.3174**	**2.2860**		**15,531.9556**	**15,531.9556**	**0.0823**	**2.0272**	**16,138.1308**

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					1.9089	0.0000	1.9089	0.2061	0.0000	0.2061			0.0000			0.0000
Off-Road	2.6776	15.3694	108.3075	0.2198		0.3434	0.3434		0.3434	0.3434	0.0000	21,141.4738	21,141.4738	6.0690		21,293.1986
Total	**2.6776**	**15.3694**	**108.3075**	**0.2198**	**1.9089**	**0.3434**	**2.2523**	**0.2061**	**0.3434**	**0.5496**	**0.0000**	**21,141.4738**	**21,141.4738**	**6.0690**		**21,293.1986**

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

3.2 Preparation - 2022

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	0.5507	28.7604	3.3971	0.1168	3.5049	0.3143	3.8191	0.9613	0.3007	1.2619		12,362.5681	12,362.5681	0.0258	1.9430	12,942.2151
Worker	1.0757	0.9718	9.5535	0.0312	3.7996	0.0181	3.8177	1.0074	0.0167	1.0240		3,169.3875	3,169.3875	0.0566	0.0843	3,195.9158
Total	**1.6265**	**29.7322**	**12.9506**	**0.1480**	**7.3044**	**0.3324**	**7.6368**	**1.9686**	**0.3174**	**2.2860**		**15,531.9556**	**15,531.9556**	**0.0823**	**2.0272**	**16,138.1308**

3.3 Excavation - 2022

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					4.2420	0.0000	4.2420	0.4580	0.0000	0.4580			0.0000			0.0000
Off-Road	10.4723	97.7354	78.1070	0.2157		3.9170	3.9170		3.6592	3.6592		20,740.6913	20,740.6913	5.9394		20,889.1756
Total	**10.4723**	**97.7354**	**78.1070**	**0.2157**	**4.2420**	**3.9170**	**8.1590**	**0.4580**	**3.6592**	**4.1172**		**20,740.6913**	**20,740.6913**	**5.9394**		**20,889.1756**

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

3.3 Excavation - 2022

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	0.5507	28.7604	3.3971	0.1168	3.5049	0.3143	3.8191	0.9613	0.3007	1.2619		12,362.5681	12,362.5681	0.0258	1.9430	12,942.2151
Worker	1.0757	0.9718	9.5535	0.0312	3.7996	0.0181	3.8177	1.0074	0.0167	1.0240		3,169.3875	3,169.3875	0.0566	0.0843	3,195.9158
Total	**1.6265**	**29.7322**	**12.9506**	**0.1480**	**7.3044**	**0.3324**	**7.6368**	**1.9686**	**0.3174**	**2.2860**		**15,531.9556**	**15,531.9556**	**0.0823**	**2.0272**	**16,138.1308**

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					1.9089	0.0000	1.9089	0.2061	0.0000	0.2061			0.0000			0.0000
Off-Road	2.5758	13.0450	105.1687	0.2157		0.3367	0.3367		0.3367	0.3367	0.0000	20,740.6913	20,740.6913	5.9394		20,889.1756
Total	**2.5758**	**13.0450**	**105.1687**	**0.2157**	**1.9089**	**0.3367**	**2.2456**	**0.2061**	**0.3367**	**0.5428**	**0.0000**	**20,740.6913**	**20,740.6913**	**5.9394**		**20,889.1756**

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

3.3 Excavation - 2022

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	0.5507	28.7604	3.3971	0.1168	3.5049	0.3143	3.8191	0.9613	0.3007	1.2619		12,362.5681	12,362.5681	0.0258	1.9430	12,942.2151
Worker	1.0757	0.9718	9.5535	0.0312	3.7996	0.0181	3.8177	1.0074	0.0167	1.0240		3,169.3875	3,169.3875	0.0566	0.0843	3,195.9158
Total	**1.6265**	**29.7322**	**12.9506**	**0.1480**	**7.3044**	**0.3324**	**7.6368**	**1.9686**	**0.3174**	**2.2860**		**15,531.9556**	**15,531.9556**	**0.0823**	**2.0272**	**16,138.1308**

3.4 Utilities/Sub-grade - 2022

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	10.4723	97.7354	78.1070	0.2157		3.9170	3.9170		3.6592	3.6592		20,740.6913	20,740.6913	5.9394		20,889.1756
Total	**10.4723**	**97.7354**	**78.1070**	**0.2157**		**3.9170**	**3.9170**		**3.6592**	**3.6592**		**20,740.6913**	**20,740.6913**	**5.9394**		**20,889.1756**

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

3.4 Utilities/Sub-grade - 2022

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	0.5507	28.7604	3.3971	0.1168	3.5049	0.3143	3.8191	0.9613	0.3007	1.2619		12,362.5681	12,362.5681	0.0258	1.9430	12,942.2151
Worker	2.1515	1.9436	19.1071	0.0623	7.5991	0.0362	7.6353	2.0147	0.0334	2.0481		6,338.7750	6,338.7750	0.1131	0.1686	6,391.8315
Total	**2.7022**	**30.7040**	**22.5041**	**0.1791**	**11.1040**	**0.3505**	**11.4545**	**2.9760**	**0.3340**	**3.3100**		**18,701.3431**	**18,701.3431**	**0.1389**	**2.1115**	**19,334.0466**

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	2.5758	13.0450	105.1687	0.2157		0.3367	0.3367		0.3367	0.3367	0.0000	20,740.6913	20,740.6913	5.9394		20,889.1756
Total	**2.5758**	**13.0450**	**105.1687**	**0.2157**		**0.3367**	**0.3367**		**0.3367**	**0.3367**	**0.0000**	**20,740.6913**	**20,740.6913**	**5.9394**		**20,889.1756**

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

3.4 Utilities/Sub-grade - 2022

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	0.5507	28.7604	3.3971	0.1168	3.5049	0.3143	3.8191	0.9613	0.3007	1.2619		12,362.5681	12,362.5681	0.0258	1.9430	12,942.2151
Worker	2.1515	1.9436	19.1071	0.0623	7.5991	0.0362	7.6353	2.0147	0.0334	2.0481		6,338.7750	6,338.7750	0.1131	0.1686	6,391.8315
Total	**2.7022**	**30.7040**	**22.5041**	**0.1791**	**11.1040**	**0.3505**	**11.4545**	**2.9760**	**0.3340**	**3.3100**		**18,701.3431**	**18,701.3431**	**0.1389**	**2.1115**	**19,334.0466**

3.5 Construction - 2022

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	13.5138	123.0225	123.2669	0.2721		6.3707	6.3707		5.9633	5.9633		25,989.8499	25,989.8499	7.0556		26,166.2408
Total	**13.5138**	**123.0225**	**123.2669**	**0.2721**		**6.3707**	**6.3707**		**5.9633**	**5.9633**		**25,989.8499**	**25,989.8499**	**7.0556**		**26,166.2408**

Janus Solar Project - Colusa County, Winter

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

3.5 Construction - 2022

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	0.8261	43.1406	5.0956	0.1752	5.2573	0.4714	5.7287	1.4419	0.4510	1.8929		18,543.8522	18,543.8522	0.0386	2.9145	19,413.3226
Worker	4.3029	3.8871	38.2142	0.1246	15.1982	0.0725	15.2707	4.0294	0.0668	4.0961		12,677.5500	12,677.5500	0.2262	0.3371	12,783.6630
Total	**5.1290**	**47.0277**	**43.3097**	**0.2998**	**20.4555**	**0.5439**	**20.9994**	**5.4713**	**0.5177**	**5.9890**		**31,221.4022**	**31,221.4022**	**0.2649**	**3.2516**	**32,196.9856**

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	3.1562	15.5602	152.4060	0.2721		0.4140	0.4140		0.4140	0.4140	0.0000	25,989.8498	25,989.8498	7.0556		26,166.2408
Total	**3.1562**	**15.5602**	**152.4060**	**0.2721**		**0.4140**	**0.4140**		**0.4140**	**0.4140**	**0.0000**	**25,989.8498**	**25,989.8498**	**7.0556**		**26,166.2408**

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

3.5 Construction - 2022

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	0.8261	43.1406	5.0956	0.1752	5.2573	0.4714	5.7287	1.4419	0.4510	1.8929		18,543.8522	18,543.8522	0.0386	2.9145	19,413.3226
Worker	4.3029	3.8871	38.2142	0.1246	15.1982	0.0725	15.2707	4.0294	0.0668	4.0961		12,677.5500	12,677.5500	0.2262	0.3371	12,783.6630
Total	**5.1290**	**47.0277**	**43.3097**	**0.2998**	**20.4555**	**0.5439**	**20.9994**	**5.4713**	**0.5177**	**5.9890**		**31,221.4022**	**31,221.4022**	**0.2649**	**3.2516**	**32,196.9856**

3.5 Construction - 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	12.7929	114.0201	122.7802	0.2723		5.7507	5.7507		5.3817	5.3817		26,015.2723	26,015.2723	7.0457		26,191.4149
Total	**12.7929**	**114.0201**	**122.7802**	**0.2723**		**5.7507**	**5.7507**		**5.3817**	**5.3817**		**26,015.2723**	**26,015.2723**	**7.0457**		**26,191.4149**

Janus Solar Project - Colusa County, Winter

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

3.5 Construction - 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	0.0000	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	0.4127	36.0913	4.2300	0.1690	5.2575	0.3786	5.6361	1.4420	0.3622	1.8042		17,883.4333	17,883.4333	0.0194	2.8106	18,721.4853
Worker	4.0074	3.3767	34.8241	0.1206	15.1982	0.0682	15.2664	4.0294	0.0628	4.0922		12,343.1022	12,343.1022	0.1999	0.3067	12,439.5037
Total	**4.4201**	**39.4680**	**39.0540**	**0.2896**	**20.4557**	**0.4468**	**20.9025**	**5.4714**	**0.4250**	**5.8964**		**30,226.5355**	**30,226.5355**	**0.2193**	**3.1174**	**31,160.9890**

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	3.1562	15.5602	152.4060	0.2723		0.4140	0.4140		0.4140	0.4140	0.0000	26,015.2723	26,015.2723	7.0457		26,191.4149
Total	**3.1562**	**15.5602**	**152.4060**	**0.2723**		**0.4140**	**0.4140**		**0.4140**	**0.4140**	**0.0000**	**26,015.2723**	**26,015.2723**	**7.0457**		**26,191.4149**

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

3.5 Construction - 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	0.0000	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	0.4127	36.0913	4.2300	0.1690	5.2575	0.3786	5.6361	1.4420	0.3622	1.8042		17,883.4333	17,883.4333	0.0194	2.8106	18,721.4853
Worker	4.0074	3.3767	34.8241	0.1206	15.1982	0.0682	15.2664	4.0294	0.0628	4.0922		12,343.1022	12,343.1022	0.1999	0.3067	12,439.5037
Total	**4.4201**	**39.4680**	**39.0540**	**0.2896**	**20.4557**	**0.4468**	**20.9025**	**5.4714**	**0.4250**	**5.8964**		**30,226.5355**	**30,226.5355**	**0.2193**	**3.1174**	**31,160.9890**

3.6 Paving - 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	0.1537	1.6101	1.8522	2.6200e-003		0.0886	0.0886		0.0815	0.0815		254.1077	254.1077	0.0822		256.1623
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1537**	**1.6101**	**1.8522**	**2.6200e-003**		**0.0886**	**0.0886**		**0.0815**	**0.0815**		**254.1077**	**254.1077**	**0.0822**		**256.1623**

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

3.6 Paving - 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	0.0000	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	0.0688	6.0152	0.7050	0.0282	0.8762	0.0631	0.9394	0.2403	0.0604	0.3007		2,980.5722	2,980.5722	3.2300e-003	0.4684	3,120.2476
Worker	0.4007	0.3377	3.4824	0.0121	1.5198	6.8200e-003	1.5266	0.4029	6.2800e-003	0.4092		1,234.3102	1,234.3102	0.0200	0.0307	1,243.9504
Total	**0.4695**	**6.3529**	**4.1874**	**0.0402**	**2.3961**	**0.0699**	**2.4660**	**0.6433**	**0.0667**	**0.7099**		**4,214.8824**	**4,214.8824**	**0.0232**	**0.4991**	**4,364.1979**

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	0.0322	0.1394	1.9838	2.6200e-003		4.2900e-003	4.2900e-003		4.2900e-003	4.2900e-003	0.0000	254.1077	254.1077	0.0822		256.1623
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0322**	**0.1394**	**1.9838**	**2.6200e-003**		**4.2900e-003**	**4.2900e-003**		**4.2900e-003**	**4.2900e-003**	**0.0000**	**254.1077**	**254.1077**	**0.0822**		**256.1623**

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

3.6 Paving - 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	0.0000	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	0.0688	6.0152	0.7050	0.0282	0.8762	0.0631	0.9394	0.2403	0.0604	0.3007		2,980.5722	2,980.5722	3.2300e-003	0.4684	3,120.2476
Worker	0.4007	0.3377	3.4824	0.0121	1.5198	6.8200e-003	1.5266	0.4029	6.2800e-003	0.4092		1,234.3102	1,234.3102	0.0200	0.0307	1,243.9504
Total	**0.4695**	**6.3529**	**4.1874**	**0.0402**	**2.3961**	**0.0699**	**2.4660**	**0.6433**	**0.0667**	**0.7099**		**4,214.8824**	**4,214.8824**	**0.0232**	**0.4991**	**4,364.1979**

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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	0.4775	1.2893	6.5784	0.0173	1.8443	0.0159	1.8602	0.4918	0.0150	0.5067		1,787.0508	1,787.0508	0.0690	0.0856	1,814.2841
Unmitigated	0.4775	1.2893	6.5784	0.0173	1.8443	0.0159	1.8602	0.4918	0.0150	0.5067		1,787.0508	1,787.0508	0.0690	0.0856	1,814.2841

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	60.00	0.00	0.00	624,000	624,000
Total	60.00	0.00	0.00	624,000	624,000

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	40.00	0.00	0.00	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	0.511083	0.054733	0.175759	0.156171	0.037435	0.008637	0.007437	0.019021	0.000259	0.000185	0.025067	0.000721	0.003491

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	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

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	0	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**

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	0	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**

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	10.6432	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Unmitigated	10.6432	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004

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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	6.9144					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.7287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Total	**10.6432**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**8.8000e-004**	**8.8000e-004**	**0.0000**		**9.3000e-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	6.9144					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.7287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Total	**10.6432**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**8.8000e-004**	**8.8000e-004**	**0.0000**		**9.3000e-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	365	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
Emergency Generator	1	24	200	66	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

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

10.1 Stationary Sources

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					
Emergency Generator - Diesel (50 - 75 HP)	2.5995	8.4763	9.4322	0.0125		0.3824	0.3824		0.3824	0.3824		1,329.7904	1,329.7904	0.1864		1,334.4513
Total	**2.5995**	**8.4763**	**9.4322**	**0.0125**		**0.3824**	**0.3824**		**0.3824**	**0.3824**		**1,329.7904**	**1,329.7904**	**0.1864**		**1,334.4513**

11.0 Vegetation